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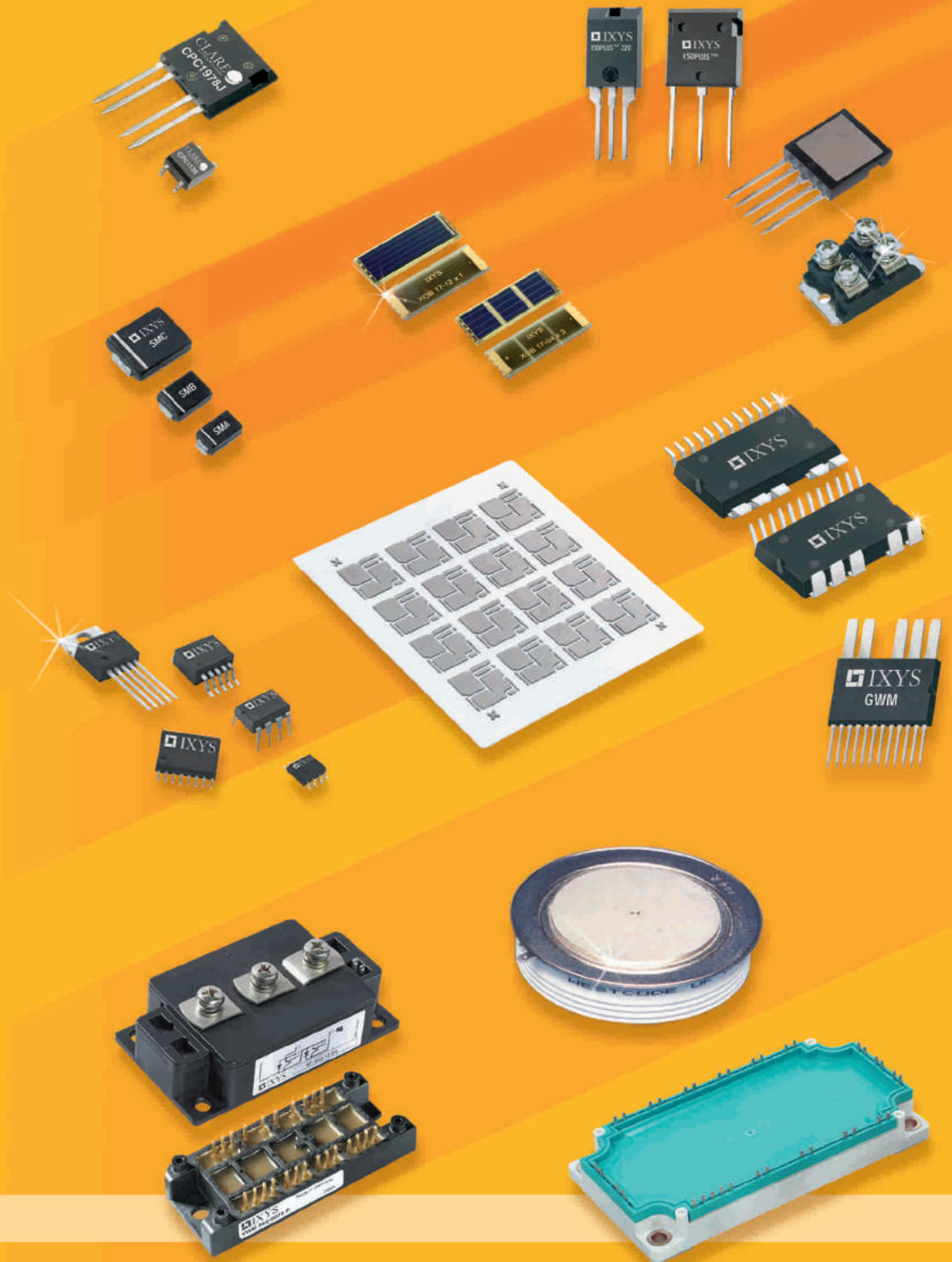
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каталог, описание, технические, характеристики, datasheet, параметры, маркировка,габариты, фото , мост, выпрямитель



Выпрямитель, Минск

Электронные компоненты, радиодетали

где и как купить в Минске?





2017-2018

CATALOGUE

产品样本

Power Semiconductor Discretives and Power Modules

IGBTs

THYRISTORs

FREDs

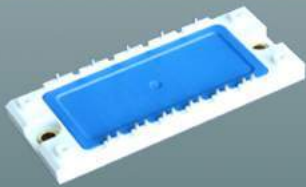
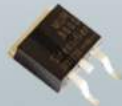
SCHOTTKY DIODEs

TRIACs

DIODEs

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каталог, описание, технические, характеристики, datasheet, параметры, маркировка, габариты, фото, модуль



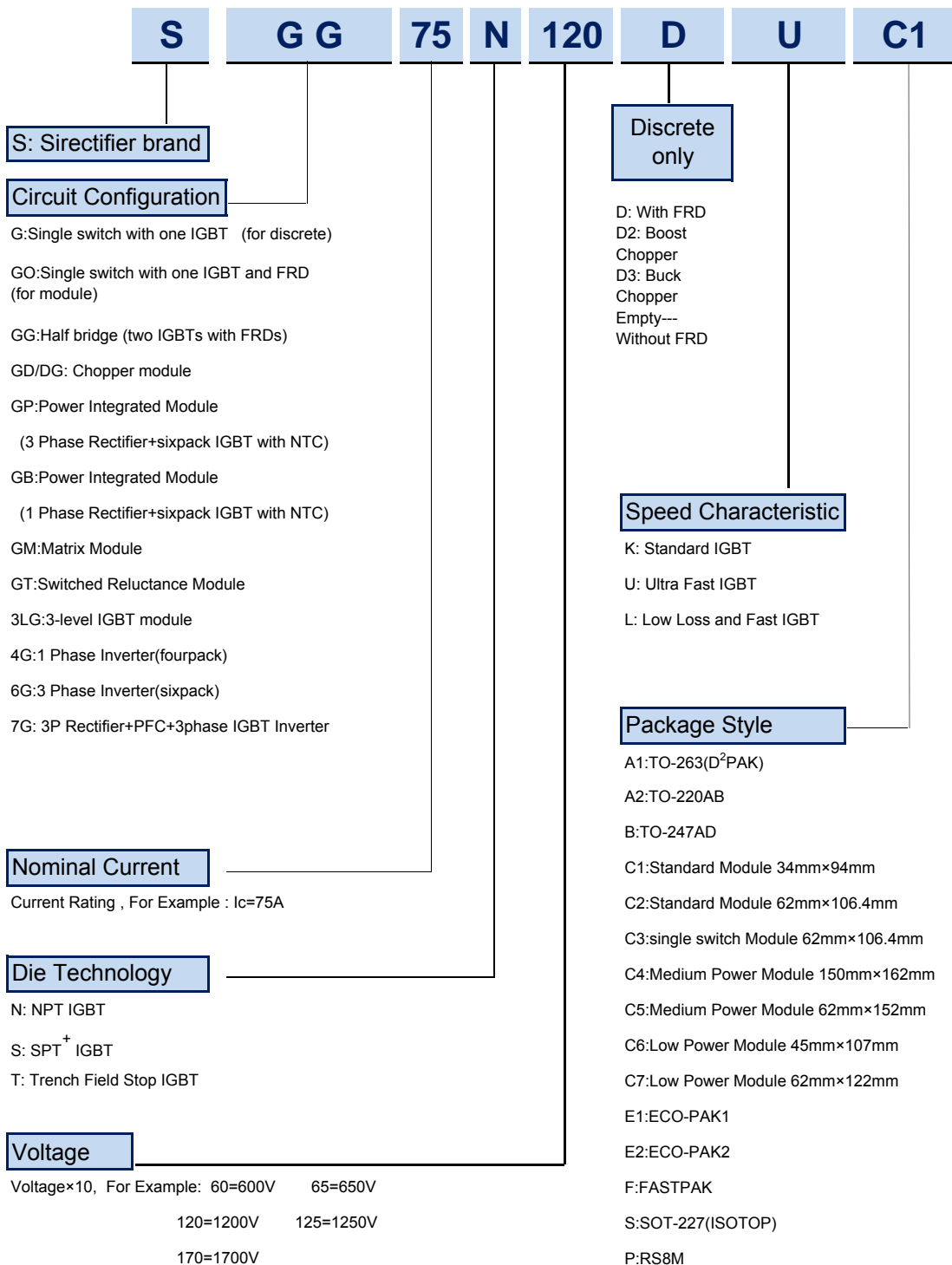
江苏矽莱克电子科技有限公司
Sirectifier Electronics Technology Corp.

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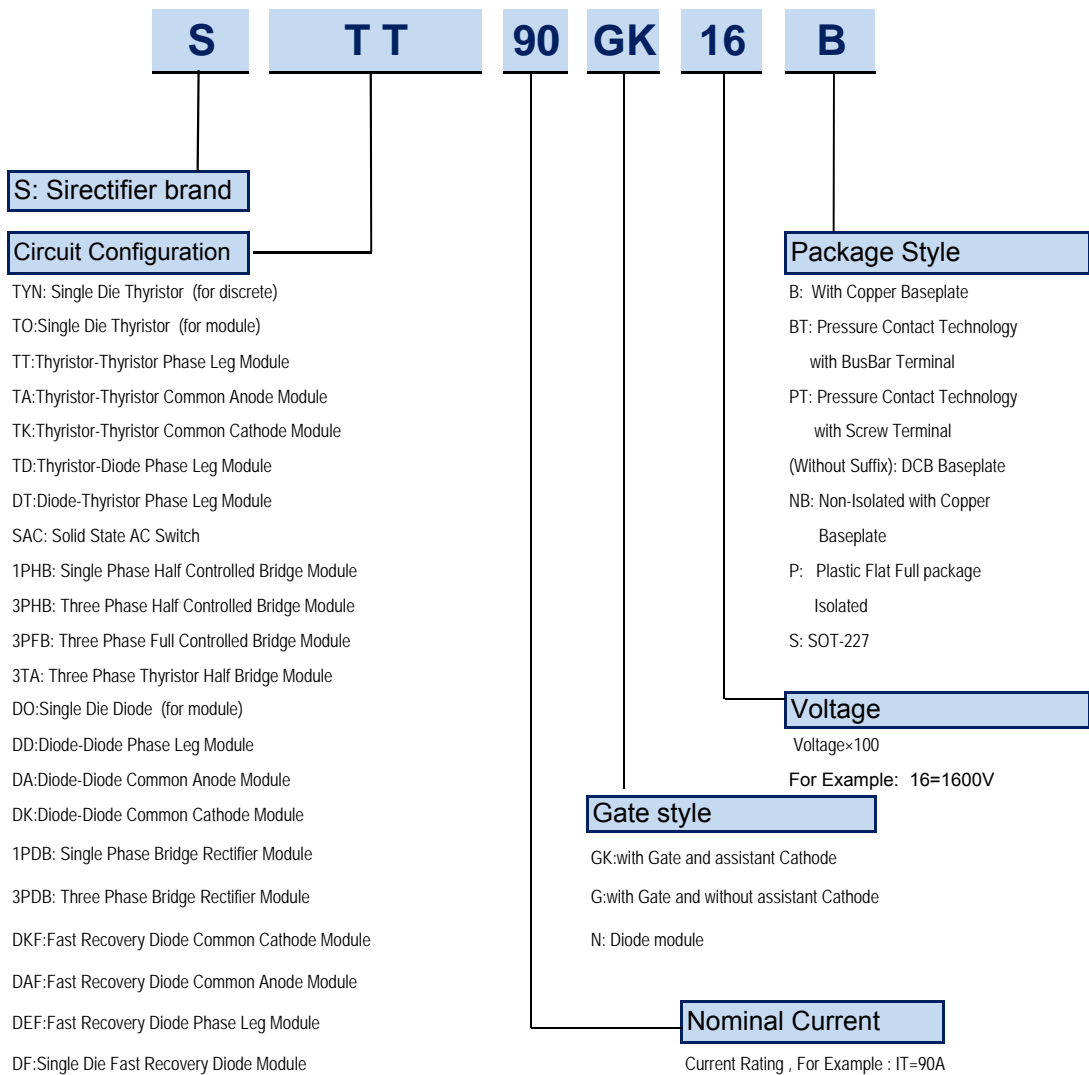
IGBT分立器件和功率模块命名方法

IGBT Discrete and Power Module Nomenclature



晶闸管、整流管分立器件和功率模块命名方法

Thyristor / Diode discrete and Power Module Nomenclature



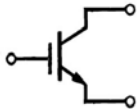
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каталог, описание, технические, характеристики, datasheet, параметры,
 маркировка, габариты, фото, модуль

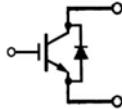
IGBT分立器件

IGBT Discretes

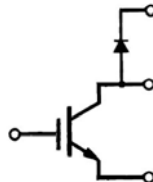
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	V _{CES}	I _{C25}	I _{C90}	V _{CEsat}	E _{OFF}	R _{thJC}		
		@T _c =25°C	@T _c =90°C	@25°C typ.	@125°C typ.			
V	A	A	V	mJ	K/W			
600V NPT IGBT Standard Series								
SG12N60B	600	24	12	2.1	0.8	1.25	1	TO-247AD
SG12N60DB	600	24	12	2.1	0.8	1.25	2	TO-247AD
SG23N60B	600	48	24	2.1	0.6	0.83	1	TO-247AD
SG23N60DB	600	48	24	2.1	0.6	0.83	2	TO-247AD
SG50N60B	600	75	50	2.5	4.2	0.62	1	TO-247AD
SG50N60DB	600	75	50	2.5	4.2	0.62	2	TO-247AD
SG50N60S	600	75	50	2.5	4.2	0.34	1	SOT-227
SG50N60DS	600	75	50	2.5	4.2	0.34	2	SOT-227
SG50N60D2S	600	75	50	2.5	4.2	0.34	3	SOT-227
SG50N60D3S	600	75	50	2.5	4.2	0.34	4	SOT-227
SG200N60S	600	200	100	2.1	14.4	0.21	1	SOT-227
600V Trench Field Stop IGBT Ultra Fast Series								
SG37T60B	600	75	37	1.9	2.2	0.50	1	TO-247AD
SG37T60DB	600	75	37	1.9	2.2	0.50	2	TO-247AD
SG50T60B	600	90	50	1.9	3.5	0.45	1	TO-247AD
SG50T60DB	600	90	50	1.9	3.5	0.45	2	TO-247AD
SG50T60S	600	90	50	1.9	3.5	0.33	1	SOT-227
SG50T60DS	600	90	50	1.9	3.5	0.33	2	SOT-227
SG75T60S	600	150	75	1.9	4.6	0.30	1	SOT-227
SG75T60DS	600	150	75	1.9	4.6	0.30	2	SOT-227
SG100T60S	600	200	100	1.9	8.2	0.22	1	SOT-227
1200V NPT IGBT Standard Series								
SG20N120B	1200	40	20	2.0	9.5	0.83	1	TO-247AD
SG20N120DB	1200	40	20	2.0	9.5	0.83	2	TO-247AD
SG25S120B	1200	46	25	2.0	2.5	0.83	1	TO-247AD
SG25S120DB	1200	46	25	2.0	2.5	0.83	2	TO-247AD
SG35N120B	1200	70	35	2.0	8.0	0.42	1	TO-247AD
SG35N120DB	1200	70	35	2.0	8.0	0.42	2	TO-247AD
SG40T120DB	1200	75	40	2.0	2.5	0.42	2	TO-247AD
SG40N120DB	1200	75	40	2.0	2.5	0.42	2	TO-247AD
SG45N120B	1200	75	45	2.0	2.5	0.42	1	TO-247AD
SG50N120S	1200	85	50	2.0	5.0	0.50	1	SOT-227
SG50N120DS	1200	85	50	2.0	5.0	0.50	2	SOT-227
SG75N120S	1200	100	75	2.0	7.5	0.27	1	SOT-227
SG75N120DS	1200	100	75	2.0	7.5	0.27	2	SOT-227



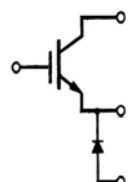
Circuit 1



Circuit 2



Circuit 3

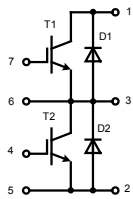


Circuit 4

600V IGBT模块 600V IGBT Modules

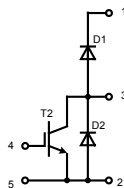
型号 TYPE	电气特性 Electrical Characteristics					内部电路 Circuit	封装外形 Package Style	
	VCES	IC	VCEsat	EOFF				RthJC max
		@Tc =80°C	@25°C	@125°C				
			typ	typ				
V	A	V	mJ		K/W			
600V NPT IGBT Standard Series								
SGG50N60KC1	600	50	2.00	1.90	0.24	1	Fig.1	
SGG75N60KC1	600	75	1.90	2.30	0.22	1	Fig.1	
SGG100N60KC1	600	100	1.90	6.60	0.16	1	Fig.1	
SGG145N60KC1	600	145	1.90	8.80	0.13	1	Fig.1	
SGG150N60KC2	600	150	1.90	8.80	0.12	1	Fig. 26	
SGG200N60KC2	600	200	1.90	16.20	0.11	1	Fig. 26	
SGG300N60KC2	600	300	1.90	20.40	0.10	1	Fig. 26	
SGG400N60KC2	600	400	1.90	25.80	0.08	1	Fig. 26	
SGD/SDG50N60KC1	600	50	2.00	1.90	0.24	2/3	Fig.1	
SGD/SDG75N60KC1	600	75	1.90	2.30	0.22	2/3	Fig.1	
SGD/SDG100N60KC1	600	100	1.90	6.60	0.16	2/3	Fig.1	
SGD/SDG145N60KC1	600	145	1.90	8.80	0.13	2/3	Fig.1	
SGD/SDG150N60KC2	600	150	1.90	8.80	0.12	2/3	Fig. 26	
SGD/SDG200N60KC2	600	200	1.90	16.20	0.11	2/3	Fig. 26	
SGD/SDG300N60KC2	600	300	1.90	20.40	0.10	2/3	Fig. 26	
SGD/SDG400N60KC2	600	400	1.90	25.80	0.08	2/3	Fig. 26	
SGO300N60KC3	600	200	1.90	18.00	0.11	4	Fig.58	
SGO400N60KC3	600	400	1.90	20.30	0.09	4	Fig.58	
SGO600N60KC3	600	600	1.90	48.20	0.06	4	Fig.58	
600V NPT IGBT Ultra Fast Series								
SGG75N60UC1	600	75	2.70	3.10	0.20	1	Fig.1	
SGG100N60UC1	600	100	2.70	5.05	0.16	1	Fig.1	
SGG145N60UC1	600	145	2.70	7.36	0.13	1	Fig.1	
SGG150N60UC2	600	150	2.70	7.36	0.12	1	Fig. 26	
SGG200N60UC2	600	200	2.70	10.1	0.11	1	Fig. 26	
SGG300N60UC2	600	300	2.70	15.6	0.10	1	Fig. 26	
SGG400N60UC2	600	400	2.70	22.8	0.08	1	Fig. 26	
SGD/SDG75N60UC1	600	75	2.70	3.10	0.20	2/3	Fig.1	
SGD/SDG100N60UC1	600	100	2.70	5.05	0.16	2/3	Fig.1	
SGD/SDG145N60UC1	600	145	2.70	7.36	0.13	2/3	Fig.1	
SGD/SDG150N60UC2	600	150	2.70	7.36	0.12	2/3	Fig. 26	
SGD/SDG200N60UC2	600	200	2.70	10.1	0.11	2/3	Fig. 26	
SGD/SDG300N60UC2	600	300	2.70	15.6	0.10	2/3	Fig. 26	
SGD/SDG400N60UC2	600	400	2.70	22.8	0.08	2/3	Fig. 26	
SGO300N60UC3	600	300	2.70	15.50	0.11	4	Fig.58	
SGO400N60UC3	600	400	2.70	22.70	0.09	4	Fig.58	
SGO600N60UC3	600	600	2.70	32.80	0.06	4	Fig.58	

型号 TYPE	电气特性Electrical Characteristics					内部电路 Circuit	封装外形 Package Style
	VCES	IC	VCEsat	EOFF	RthJC max		
		@Tc =80°C	@25°C	@125°C			
		A	V	mJ			
V	A	V	mJ	K/W			
600V Trench Field Stop IGBT Ultra Fast Series							
SGG75T60UC1	600	75	2.70	3.10	0.20	1	Fig.1
SGG100T60UC1	600	100	2.70	5.05	0.16	1	Fig.1
SGG145T60UC1	600	145	2.70	7.36	0.13	1	Fig.1
SGG150T60UC2	600	150	2.70	7.36	0.12	1	Fig. 26
SGG200T60UC2	600	200	2.70	10.1	0.11	1	Fig. 26
SGG300T60UC2	600	300	2.70	15.6	0.10	1	Fig. 26
SGG400T60UC2	600	400	2.70	22.8	0.08	1	Fig. 26
SGD/SDG75T60UC1	600	75	2.70	3.10	0.20	2/3	Fig.1
SGD/SDG100T60UC1	600	100	2.70	5.05	0.16	2/3	Fig.1
SGD/SDG145T60UC1	600	145	2.70	7.36	0.13	2/3	Fig.1
SGD/SDG150T60UC2	600	150	2.70	7.36	0.12	2/3	Fig. 26
SGD/SDG200T60UC2	600	200	2.70	10.1	0.11	2/3	Fig. 26
SGD/SDG300T60UC2	600	300	2.70	15.6	0.10	2/3	Fig. 26
SGD/SDG400T60UC2	600	400	2.70	22.8	0.08	2/3	Fig. 26



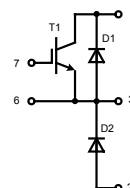
Circuit 1(Phase Leg)

SGG Series(for Fig.1 package)



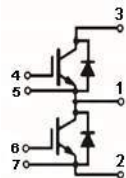
Circuit 2(Boost Chopper)

SGD Series(for Fig.1 package)



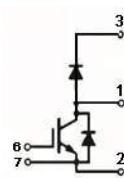
Circuit 3(Buck Chopper)

SDG Series(for Fig.1 package)



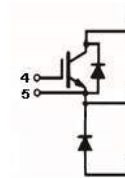
Circuit 1(Phase Leg)

SGG Series(for Fig.26 package)



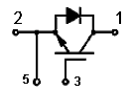
Circuit 2(Boost Chopper)

SGD Series(for Fig.26 package)



Circuit 3(Buck Chopper)

SDG Series (for Fig.26 package)



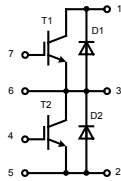
Circuit 4(Single Die)

SGO Series(for Fig.58 package)

1200V IGBT模块 1200V IGBT Modules

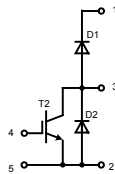
型号 TYPE	电气特性Electrical Characteristics						封装外形 Package Style
	VCES	IC	VCESat	E _{OFF}	R _{thJC} max	内部电路 Circuit	
		@T _c =80°C	@25°C	@125°C			
		V	A	V			
1200V NPT IGBT Standard Series							
SGG50N120KC1	1200	50	2.20	6.00	0.26	1	Fig.1
SGG75N120KC1	1200	75	2.20	9.20	0.35	1	Fig.1
SGG100N120KC1	1200	100	2.20	16.60	0.24	1	Fig.1
SGG145N120KC1	1200	145	2.20	25.60	0.15	1	Fig.1
SGG150N120KC2	1200	150	2.20	25.60	0.12	1	Fig. 26
SGG200N120KC2	1200	200	2.20	49.50	0.11	1	Fig. 26
SGG300N120KC2	1200	300	2.20	63.00	0.09	1	Fig. 26
SGG400N120KC2	1200	400	2.20	85.00	0.07	1	Fig. 26
SGD/SDG50N120KC1	1200	50	2.20	6.00	0.26	2/3	Fig.1
SGD/SDG75N120KC1	1200	75	2.20	9.20	0.35	2/3	Fig.1
SGD/SDG100N120KC1	1200	100	2.20	16.60	0.24	2/3	Fig.1
SGD/SDG145N120KC1	1200	145	2.20	25.60	0.15	2/3	Fig.1
SGD/SDG150N120KC2	1200	150	2.20	25.60	0.12	2/3	Fig. 26
SGD/SDG200N120KC2	1200	200	2.20	49.50	0.11	2/3	Fig. 26
SGD/SDG300N120KC2	1200	300	2.20	63.00	0.09	2/3	Fig. 26
SGD/SDG400N120KC2	1200	400	2.20	85.00	0.07	2/3	Fig. 26
1200V NPT IGBT Ultra Fast Series							
SGG50N120UC1	1200	50	3.20	5.90	0.33	1	Fig.1
SGG75N120UC1	1200	75	3.20	9.50	0.22	1	Fig.1
SGG100N120UC1	1200	100	3.20	12.90	0.19	1	Fig.1
SGG145N120U1	1200	145	3.20	18.80	0.13	1	Fig.1
SGG150N120UC2	1200	150	3.20	18.80	0.12	1	Fig. 26
SGG200N120UC2	1200	200	3.20	29.00	0.11	1	Fig. 26
SGG300N120UC2	1200	300	3.20	35.60	0.08	1	Fig. 26
SGG400N120UC2	1200	400	3.20	56.10	0.05	1	Fig. 26
SGD/SDG50N120UC1	1200	50	3.20	5.90	0.33	2/3	Fig.1
SGD/SDG75N120UC1	1200	75	3.20	9.50	0.22	2/3	Fig.1
SGD/SDG100N120UC1	1200	100	3.20	12.90	0.19	2/3	Fig.1
SGD/SDG145N120UC1	1200	145	3.20	18.80	0.13	2/3	Fig.1
SGD/SDG150N120UC2	1200	150	3.20	18.80	0.12	2/3	Fig. 26
SGD/SDG200N120UC2	1200	200	3.20	29.00	0.11	2/3	Fig. 26
SGD/SDG300N120UC2	1200	300	3.20	35.60	0.08	2/3	Fig. 26
SGD/SDG400N120UC2	1200	400	3.20	56.10	0.05	2/3	Fig. 26
SGO200N120UC3	1200	200	1.9	39	0.08	4	Fig.58
SGO300N120UC3	1200	300	1.9	64.8	0.06	4	Fig.58
SGO400N120UC3	1200	400	1.9	85	0.05	4	Fig.58
SGO600N120UC3	1200	600	1.9	163	0.04	4	Fig.58
1200V SPT⁺ IGBT Standard Series							
SGG50S120KC1	1200	50	1.80	4.3	0.36	1	Fig.1
SGG75S120KC1	1200	75	1.80	4.7	0.30	1	Fig.1
SGG100S120KC1	1200	100	1.80	7.5	0.21	1	Fig.1
SGG145S120KC1	1200	145	1.80	9.5	0.165	1	Fig.1
SGG150S120KC2	1200	150	1.80	9	0.15	1	Fig. 26
SGG200S120KC2	1200	200	1.80	15	0.095	1	Fig. 26
SGG300S120KC2	1200	300	1.80	22	0.085	1	Fig. 26
SGG400S120KC2	1200	400	1.80	31	0.055	1	Fig. 26

型号 TYPE	电气特性 Electrical Characteristics						封装外形 Package Style
	VCES	IC	VCEsat	E _{OFF}	R _{thJC} max	内部电路 Circuit	
		@T _c =80℃	@25℃	@125℃			
		V	A	V			
SGD/SDG50S120KC1	1200	50	1.80	4.3	0.36	1	Fig.1
SGD/SDG75S120KC1	1200	75	1.80	4.7	0.30	2	Fig.1
SGD/SDG100S120KC1	1200	100	1.80	7.5	0.21	2	Fig.1
SGD/SDG145S120KC1	1200	145	1.80	9.5	0.165	2	Fig.1
SGD/SDG150S120KC2	1200	150	1.80	9	0.15	2	Fig. 26
SGD/SDG200S120KC2	1200	200	1.80	15	0.095	2	Fig. 26
SGD/SDG300S120KC2	1200	300	1.80	22	0.085	2	Fig. 26
SGD/SDG400S120KC2	1200	400	1.80	31	0.055	2	Fig. 26
1200V Trench Field Stop IGBT Ultra Fast Series							
SGG50T120UC1	1200	50	1.90	7.50	0.43	1	Fig.1
SGG75T120UC1	1200	75	1.90	12.30	0.32	1	Fig.1
SGG100T120UC1	1200	100	1.90	19.50	0.25	1	Fig.1
SGG145T120U1	1200	145	1.90	23.60	0.16	1	Fig.1
SGG150T120UC2	1200	150	1.90	23.60	0.13	1	Fig. 26
SGG200T120UC2	1200	200	1.90	50.10	0.12	1	Fig. 26
SGG300T120UC2	1200	300	1.90	61.00	0.08	1	Fig. 26
SGG400T120UC2	1200	400	1.90	75.60	0.06	1	Fig. 26
SGD/SDG50T120UC1	1200	50	1.90	5.90	0.33	2/3	Fig.1
SGD/SDG75T120UC1	1200	75	1.90	9.50	0.22	2/3	Fig.1
SGD/SDG100T120UC1	1200	100	1.90	12.90	0.19	2/3	Fig.1
SGD/SDG145T120UC1	1200	145	1.90	18.80	0.13	2/3	Fig.1
SGD/SDG150T120UC2	1200	150	1.90	18.80	0.12	2/3	Fig. 26
SGD/SDG200T120UC2	1200	200	1.90	29.00	0.11	2/3	Fig. 26
SGD/SDG300T120UC2	1200	300	1.90	35.60	0.08	2/3	Fig. 26
SGD/SDG400T120UC2	1200	400	1.90	56.10	0.05	2/3	Fig. 26



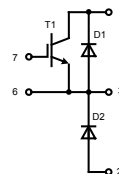
Circuit 1(Phase Leg)

SGG Series(for Fig.1 package)



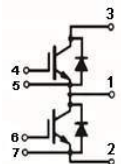
Circuit 2(Boost Chopper)

SGD Series(for Fig.1 package)



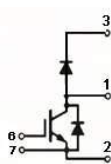
Circuit 3(Buck Chopper)

SDG Series(for Fig.1 package)



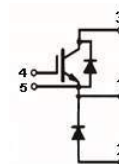
Circuit 1(Phase Leg)

SGG Series(for Fig.26 package)



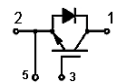
Circuit 2(Boost Chopper)

SGD Series(for Fig.26 package)



Circuit 3(Buck Chopper)

SDG Series (for Fig.26 package)



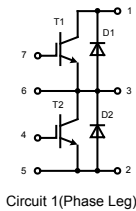
Circuit 4(Single Die)

SGO Series(for Fig.58 package)

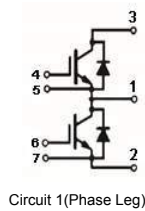
1700V IGBT模块

1700V IGBT Modules

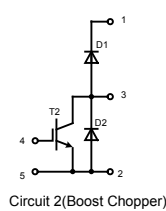
型号 TYPE	电气特性Electrical Characteristics					内部电路 Circuit	封装外形 Package Style
	VCES	IC	VCEsat	EOFF	RthJC max		
		@Tc =80°C	@25°C	@125°C			
		A	typ	typ			
V	A	V	mJ	K/W			
1700V SPT⁺ IGBT Standard Series							
SGG50S170KC1	1700	50	2.30	4.2	0.38	1	Fig.1
SGG75S170KC1	1700	75	2.30	4.7	0.30	1	Fig.1
SGG100S170KC1	1700	100	2.30	7.5	0.21	1	Fig.1
SGG145S170KC1	1700	145	2.30	9.5	0.165	1	Fig.1
SGG150S170KC2	1700	150	2.30	9	0.15	1	Fig. 26
SGG200S170KC2	1700	200	2.30	15	0.095	1	Fig. 26
SGG300S170KC2	1700	300	2.30	22	0.085	1	Fig. 26
SGD50S170KC1	1700	50	2.30	4.2	0.38	1	Fig.1
SGD75S170KC1	1700	75	2.30	4.7	0.30	2	Fig.1
SGD100S170KC1	1700	100	2.30	7.5	0.21	2	Fig.1
SGD145S170KC1	1700	145	2.30	9.5	0.165	2	Fig.1
SGD150S170KC2	1700	150	2.30	9	0.15	2	Fig. 26
SGD200S170KC2	1700	200	2.30	15	0.095	2	Fig. 26
SGD300S170KC2	1700	300	2.30	22	0.085	2	Fig. 26
SDG50S170KC1	1700	50	2.30	4.2	0.38	1	Fig.1
SDG75S170KC1	1700	75	2.30	4.7	0.30	2	Fig.1
SDG100S170KC1	1700	100	2.30	7.5	0.21	2	Fig.1
SDG145S170KC1	1700	145	2.30	9.5	0.165	2	Fig.1
SDG150S170KC2	1700	150	2.30	9	0.15	2	Fig. 26
SDG200S170KC2	1700	200	2.30	15	0.095	2	Fig. 26
SDG300S170KC2	1700	300	2.30	22	0.085	2	Fig. 26
1700V NPT IGBT Standard Series							
SGO200N170KC3	1700	200	2.30	155	0.08	4	Fig.58
SGO300N170KC3	1700	300	2.30	225	0.06	4	Fig.58
SGO400N170KC3	1700	400	2.30	205	0.05	4	Fig.58
SGO600N170KC3	1700	600	2.30	245	0.036	4	Fig.58
1700V SPT⁺ IGBT Standard Series							
SGO200T170KC3	1700	200	2.00	142	0.06	4	Fig.58
SGO300T170KC3	1700	300	2.00	199	0.05	4	Fig.58
SGO400T170KC3	1700	400	2.00	260	0.055	4	Fig.58
SGO600T170KC3	1700	600	2.00	390	0.04	4	Fig.58



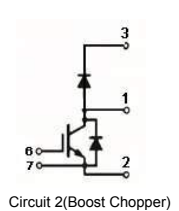
SGG Series (for Fig.1 package)



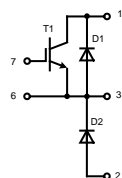
SGG Series (for Fig.26 package)



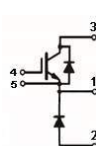
SGD Series (for Fig.1 package)



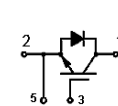
SGD Series (for Fig.26 package)



SDG Series (for Fig.1 package)



SDG Series (for Fig.26 package)



SGO Series (for Fig.58 package)


晶闸管(可控硅)分立器件 Thyristor Discretes (SCRs, Non-Isolated)



型号 TYPE	电气特性 Electrical Characteristics												封装外形 Package Style
	I_T		V_{DRM}	I_{GT}	V_{GT}	I_{DRM}	V_{TM}	I_H	I^2T	I_{TSM}	dv/dt	$R_{\theta JC}$	
	I_{TRMS}	I_{TVM}	V_{RRM}			I_{RRM}							
A	A	V	mA	V	mA	V	mA	A ² S	A	V/ μ s	$^{\circ}$ C/W		
STYN208 ~ STYN1208	8	5.0	200 ~ 1200	2~15	1.3	0.01	1.60	30	45	95	150	2.00	TO -220AB
STYN208S ~ STYN1208S	8	5.0	200 ~ 1200	2~15	1.3	0.01	1.60	30	45	95	150	2.00	TO -263 (D ² PAK)
STYN210 ~ STYN1210	10	6.4	200 ~ 1200	1~15	1.5	0.01	1.60	30	50	100	200	2.50	TO -220AB
STYN210S ~ STYN1210S	10	6.4	200 ~ 1200	1~15	1.5	0.01	1.60	30	50	100	200	2.50	TO -263 (D ² PAK)
STYN212 ~ STYN1212	12	8.0	200 ~ 1200	2~15	1.3	0.01	1.60	30	98	140	200	1.30	TO -220AB
STYN212S ~ STYN1212S	12	8.0	200 ~ 1200	2~15	1.3	0.01	1.60	30	98	140	200	1.30	TO -263 (D ² PAK)
STYN216 ~ STYN1216	16	10.0	200 ~ 1200	2~25	1.3	0.01	1.60	40	180	190	500	1.10	TO -220AB
STYN216S ~ STYN1216S	16	10.0	200 ~ 1200	2~25	1.3	0.01	1.60	40	180	190	500	1.10	TO -263 (D ² PAK)
STYN225 ~ STYN1225	25	16.0	200 ~ 1200	4~40	1.3	0.01	1.60	50	450	300	1000	1.00	TO -220AB
STYN225S ~ STYN1225S	25	16.0	200 ~ 1200	4~40	1.3	0.01	1.60	50	450	300	1000	1.00	TO -263 (D ² PAK)
STYN230 ~ STYN1830	30	19.0	200 ~ 1800	25~50	1.5	0.02	1.50	50	500	250	500	1.00	TO -247AD
STYN255 ~ STYN1855	55	32.0	200 ~ 1800	8~80	1.3	0.10	1.50	100	750	350	1000	0.90	TO -247AD
STYN865 ~ STYN1865	65	41.0	800 ~ 1800	50~100	1.5	0.50	1.64	100	1060	450	1000	0.75	TO-247AD
STYN875 ~ STYN1875	75	48.0	800 ~ 1800	50~100	1.5	0.50	1.64	100	2500	550	1000	0.70	TO-247AD

型号 TYPE	电气特性Electrical Characteristics												封装外形 Package Style
	I _T		V _{DRM}	I _{GT}	V _{GT}	I _{DRM}	V _{TM}	I _H	I ² T	I _{TSM}	dv/dt	R _{thJC}	
	I _{TRMS}	I _{TVM}	V _{RRM}			I _{RRM}							
A	A	V	mA	V	mA	V	mA	A ² S	A	V/μs	°C/W		
STYN8110 ~ STYN22110	110	70	800 ~ 2200	50~100	1.0	0.50	1.50	60	5400	800	1000	0.50	Fig.54
STYN8140 ~ STYN22140	140	90	800 ~ 2200	50~100	1.0	0.50	1.50	100	7500	1000	1000	0.40	Fig.54
STO30GK08S ~ STO30GK18S	47	30	800 ~ 1800	50~80	1.2	0.20	1.60	100	680	370	1000	1.00	SOT-227
STO50GK08S ~ STO50GK18S	79	50	800 ~ 1800	50~100	1.5	0.50	1.64	100	2740	750	1000	0.72	SOT-227
STO75GK08S ~ STO75GK18S	118	75	800 ~ 1800	50~100	1.5	0.50	1.64	100	5700	1100	1000	0.45	SOT-227
STO100GK08S ~ STO100GK18S	157	100	800 ~ 1800	50~100	1.5	0.50	1.64	100	9800	1400	1000	0.35	SOT-227
STO150GK08S ~ STO150GK18S	236	150	800 ~ 1800	50~100	1.5	0.50	1.64	100	2000	2000	1000	0.20	SOT-227

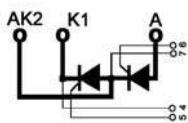
晶闸管-晶闸管模块 Thyristor-Thyristor Modules

 E310749

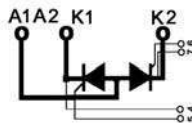
型号 TYPE	电气特性Electrical Characteristics										封装外形 Package Style
	IT			V_{DRM} V_{RRM}	I_{TSM} 45°C/10ms	V_{TO}	r_T	dv/dt	T_{VJM}	R_{thJC}	
	I_{TRMS}	I_{TVM}	@TC								
	A	A	°C	V	A	V	mΩ	V/μs	°C	K/W	
STT27GK08 ~ STT27GK18	42	27	85	800 ~ 1800	520	0.85	11.0	1000	125	0.440	Fig.31
STT27GK08B ~ STT27GK18B	42	27	85	800 ~ 1800	520	0.85	11.0	1000	125	0.540	Fig.12
STT49GK08 ~ STT49GK18	76	49	85	800 ~ 1800	1150	0.85	5.3	1000	125	0.265	Fig.31
STT49GK08B ~ STT49GK18B	76	49	85	800 ~ 1800	1150	0.85	5.3	1000	125	0.365	Fig.12
STT60GK08 ~ STT60GK18	94	60	85	800 ~ 1800	1500	0.85	3.7	1000	125	0.225	Fig.31
STT60GK08B ~ STT60GK18B	94	60	85	800 ~ 1800	1500	0.85	3.7	1000	125	0.325	Fig.12
STT70GK08 ~ STT70GK24	110	70	85	800 ~ 2400	1600	0.85	3.2	1000	125	0.200	Fig.31
STT70GK08B ~ STT70GK24B	110	70	85	800 ~ 2400	1600	0.85	3.2	1000	125	0.300	Fig.12
STT90GK08 ~ STT90GK20	140	90	85	800 ~ 2000	1700	0.85	3.2	1000	125	0.180	Fig.31
STT90GK08B ~ STT90GK20B	140	90	85	800 ~ 2000	1700	0.85	3.2	1000	125	0.280	Fig.12
STT100GK08 ~ STT100GK22	157	100	85	800 ~ 2200	1700	0.85	3.2	1000	125	0.170	Fig.31
STT100GK08B ~ STT100GK22B	157	100	85	800 ~ 2200	1700	0.85	3.2	1000	125	0.270	Fig.12
STT116GK08 ~ STT116GK18	180	116	85	800 ~ 1800	2250	0.80	2.4	1000	125	0.150	Fig.31
STT116GK08B ~ STT116GK18B	180	116	85	800 ~ 1800	2250	0.80	2.4	1000	125	0.250	Fig.12

STT130GK08 ~ STT130GK18	204	130	85	800 ~ 1800	5500	0.80	1.5	1000	125	0.115	Fig.32
STT130GK08B ~ STT130GK18B	204	130	85	800 ~ 1800	5500	0.80	1.5	1000	125	0.230	Fig.14
STT140GK08 ~ STT140GK18	220	140	85	800 ~ 1800	2400	0.80	1.5	1000	140	0.100	Fig.31
STT165GK08 ~ STT165GK22	259	165	85	800 ~ 2200	6000	0.80	1.6	1000	125	0.078	Fig.32
STT165GK08B ~ STT165GK22B	259	165	85	800 ~ 2200	6000	0.80	1.6	1000	125	0.195	Fig.14
STT181GK08 ~ STT181GK18	284	181	85	800 ~ 1800	6000	0.88	1.15	1000	125	0.070	Fig.32
STT181GK08B ~ STT181GK18B	284	181	85	800 ~ 1800	6000	0.88	1.15	1000	125	0.185	Fig.14
STTF180GK08BT ~ STTF180GK18BT	350	180	85	800 ~ 1800	6700	1.3	0.9	1000	125	0.065	Fig.35
STT200GK08B ~ STT200GK18B	314	200	85	800 ~ 1800	7900	0.95	1.1	1000	125	0.152	Fig.14
STT201GK08 ~ STT201GK18	314	200	85	800 ~ 1800	8000	0.95	1.0	1000	125	0.040	Fig.15
STT240GK30BT ~ STT240GK42BT	377	240	85	3000 ~ 4200	9000	1.56	2.1	1000	140	0.032	Fig.17
STT250GK08 ~ STT250GK18	400	250	85	800 ~ 1800	8000	0.85	1.0	1000	140	0.035	Fig.15
STT253GK08BT ~ STT253GK18BT	400	253	85	800 ~ 1800	8500	0.85	1.0	1000	140	0.239	Fig.35
STT320GK08 ~ STT320GK18	500	320	85	800 ~ 1800	9000	0.80	0.82	1000	140	0.033	Fig.15
STT320GK08BT ~ STT320GK18BT	500	320	85	800 ~ 1800	9200	0.80	0.82	1000	140	0.190	Fig.35
STT500GK08BT ~ STT500GK18BT	785	500	85	800 ~ 1800	15000	0.80	0.38	1000	140	0.072	Fig.17

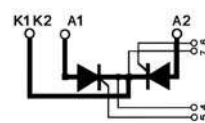
STT570GK08BT ~ STT570GK18BT	895	570	85	800 ~ 1800	17000	0.80	0.37	1000	140	0.070	Fig.17
STT800GK08PT ~ STT800GK18PT	1256	800	85	800 ~ 1800	30000	0.90	0.21	1000	140	0.041	Fig.29
STT800GK08PTWC ~ STT800GK18PTWC	1256	800	85	800 ~ 1800	30000	0.90	0.21	1000	140	0.050	Fig.66
STT1000GK08PT ~ STT1000GK24PT	1570	1000	85	800 ~ 2400	37000	0.95	0.3	1000	140	0.035	Fig.29
STT1000GK08PTWC ~ STT1000GK24PTWC	1570	1000	85	800 ~ 2400	37000	0.95	0.3	1000	140	0.038	Fig.66



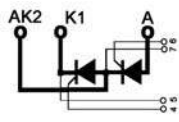
STT**



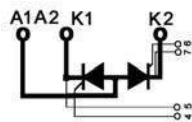
STA**



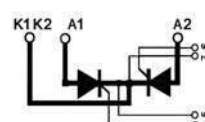
STK**



STT**B (or STTF**)



STA**B



STK**B

Without Suffix means with DCB Baseplate

Suffix " B " means with Copper Baseplate

Suffix " BT " means Pressure Contact Technology with BusBar Terminal

Suffix " PT " means Pressure Contact Technology with Screw Terminal


Suffix " P " means Plastic Flat Full package

Suffix " PTWC " means Pressure Contact Technology with Screw Terminal and Water Cooling construction

"STTF" Means Fast Thyristor-Thyristor Modules

晶闸管-二极管模块

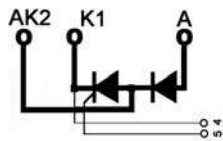
Thyristor-Diode Modules

 E310749

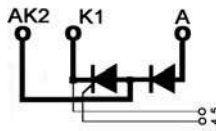
型号 TYPE	电气特性Electrical Characteristics										封装外形 Package Style
	IT			V_{DRM} V_{RRM}	I_{TSM} 45°C/10ms	V_{TO}	r_T	dv/dt	T_{VJM}	R_{thJC}	
	I_{TRMS}	I_{TVM}	@TC								
	A	A	°C	V	A	V	mΩ	V/μs	°C	K/W	
STD27GK08 ~ STD27GK18	42	27	85	800 ~ 1800	520	0.85	11.0	1000	125	0.440	Fig.36
STD27GK08B ~ STD27GK18B	42	27	85	800 ~ 1800	520	0.85	11.0	1000	125	0.540	Fig.18
STD49GK08 ~ STD49GK18	76	49	85	800 ~ 1800	1150	0.85	5.3	1000	125	0.265	Fig.36
STD49GK08B ~ STD49GK18B	76	49	85	800 ~ 1800	1150	0.85	5.3	1000	125	0.365	Fig.18
STD60GK08 ~ STD60GK18	94	60	85	800 ~ 1800	1500	0.85	3.7	1000	125	0.225	Fig.36
STD60GK08B ~ STD60GK18B	94	60	85	800 ~ 1800	1500	0.85	3.7	1000	125	0.325	Fig.18
STD70GK08 ~ STD70GK24	110	70	85	800 ~ 2400	1600	0.85	3.2	1000	125	0.200	Fig.36
STD70GK08B ~ STD70GK24B	110	70	85	800 ~ 2400	1600	0.85	3.2	1000	125	0.300	Fig.18
STD90GK08 ~ STD90GK20	140	90	85	800 ~ 2000	1700	0.85	3.2	1000	125	0.180	Fig.36
STD90GK08B ~ STD90GK20B	140	90	85	800 ~ 2000	1700	0.85	3.2	1000	125	0.280	Fig.18
STD100GK08 ~ STD100GK22	157	100	85	800 ~ 2200	1700	0.85	3.2	1000	125	0.170	Fig.36
STD100GK08B ~ STD100GK22B	157	100	85	800 ~ 2200	1700	0.85	3.2	1000	125	0.270	Fig.18
STD116GK08 ~ STD116GK18	180	116	85	800 ~ 1800	2250	0.80	2.4	1000	125	0.150	Fig.36
STD116GK08B ~ STD116GK18B	180	116	85	800 ~ 1800	2250	0.80	2.4	1000	125	0.250	Fig.18

STD130GK08 ~ STD130GK18	204	130	85	800 ~ 1800	5500	0.80	1.5	1000	125	0.115	Fig.37
STD130GK08B ~ STD130GK18B	204	130	85	800 ~ 1800	5500	0.80	1.5	1000	125	0.230	Fig.20
STD140GK08 ~ STD140GK18	220	140	85	800 ~ 1800	2400	0.80	1.5	1000	140	0.100	Fig.36
STD165GK08 ~ STD165GK22	259	165	85	800 ~ 2200	6000	0.80	1.6	1000	125	0.078	Fig.37
STD165GK08B ~ STD165GK22B	259	165	85	800 ~ 2200	6000	0.80	1.6	1000	125	0.195	Fig.20
STD181GK08 ~ STD181GK18	284	181	85	800 ~ 1800	6000	0.88	1.15	1000	125	0.070	Fig.37
STD181GK08B ~ STD181GK18B	284	181	85	800 ~ 1800	6000	0.88	1.15	1000	125	0.185	Fig.20
STD200GK08B ~ STD200GK18B	314	200	85	800 ~ 1800	7900	0.95	1.1	1000	125	0.152	Fig.20
STD201GK08 ~ STD201GK18	314	200	85	800 ~ 1800	8000	0.95	1.0	1000	125	0.040	Fig.21
STD240GK30BT ~ STD240GK42BT	377	240	85	3000 ~ 4200	9000	1.56	2.1	1000	140	0.032	Fig.17
STD250GK08 ~ STD250GK18	400	250	85	800 ~ 1800	8000	0.85	1.0	1000	140	0.035	Fig.21
STD253GK08BT ~ STD253GK18BT	400	253	85	800 ~ 1800	8500	0.85	1.0	1000	140	0.239	Fig.56
STD320GK08 ~ STD320GK18	500	320	85	800 ~ 1800	9000	0.80	0.82	1000	140	0.033	Fig.21
STD320GK08BT ~ STD320GK18BT	500	320	85	800 ~ 1800	9200	0.80	0.82	1000	140	0.190	Fig.56
STD500GK08BT ~ STD500GK18BT	785	500	85	800 ~ 1800	15000	0.80	0.38	1000	140	0.072	Fig.17
STD570GK08BT ~ STD570GK18BT	895	570	85	800 ~ 1800	17000	0.80	0.37	1000	140	0.070	Fig.17

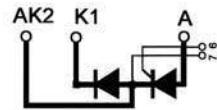
STD800GK08PT ~ STD800GK18PT	1256	800	85	800 ~ 1800	30000	0.90	0.21	1000	140	0.041	Fig.29
STD800GK08PTWC ~ STD800GK18PTWC	1256	800	85	800 ~ 1800	30000	0.90	0.21	1000	140	0.050	Fig.66
STD1000GK08PT ~ STD1000GK24PT	1570	1000	85	800 ~ 2400	37000	0.95	0.3	1000	140	0.035	Fig.29
STD1000GK08PTWC ~ STD1000GK24PTWC	1570	1000	85	800 ~ 2400	37000	0.95	0.3	1000	140	0.038	Fig.66



STD**



STD**B



SDT** / SDT**B

Without Suffix means with DCB Baseplate

Suffix " B " means with Copper Baseplate

Suffix " BT " means Pressure Contact Technology with BusBar Terminal

Suffix " PT " means Pressure Contact Technology with Screw Terminal

Suffix " P " means Plastic Flat Full package

Suffix " PTWC " means Pressure Contact Technology with Screw Terminal and Water Cooling construction

反并联晶闸管模块（固态交流开关）

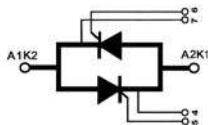
Anti-Paralled Thyristor-Thyristor Modules (Solid State AC Switches)

E310749

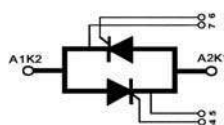
型号 TYPE	电气特性Electrical Characteristics										封装外形 Package Style
	IT			V_{DRM} V_{RRM}	I_{TSM} 45°C/10ms	V_{TO}	r_T	dv/dt	T_{VJM}	R_{thJC}	
	I_{TRMS}	I_{TVM}	@TC								
	A	A	°C	V	A	V	mΩ	V/μs	°C	K/W	
SSAC27GK08 ~ SSAC27GK18	42	27	85	800 ~ 1800	520	0.85	11	1000	125	0.440	Fig.38
SSAC27GK08B ~ SSAC27GK18B	42	27	85	800 ~ 1800	520	0.85	11	1000	125	0.540	Fig.23
SSAC49GK08 ~ SSAC49GK18	76	49	85	800 ~ 1800	1150	0.85	5.3	1000	125	0.265	Fig.38
SSAC49GK08B ~ SSAC49GK18B	76	49	85	800 ~ 1800	1150	0.85	5.3	1000	125	0.365	Fig.23
SSAC60GK08 ~ SSAC60GK18	94	60	85	800 ~ 1800	1500	0.85	3.7	1000	125	0.225	Fig.38
SSAC60GK08B ~ SSAC60GK18B	94	60	85	800 ~ 1800	1500	0.85	3.7	1000	125	0.325	Fig.23
SSAC62GK08S ~ SSAC62GK18S	62	25	85	800 ~ 1800	400	0.85	5.5	1000	125	0.455	SOT-227
SSAC70GK08 ~ SSAC70GK24	110	70	85	800 ~ 2400	1600	0.85	3.2	1000	125	0.200	Fig.38
SSAC70GK08B ~ SSAC70GK24B	110	70	85	800 ~ 2400	1600	0.85	3.2	1000	125	0.300	Fig.23
SSAC74GK08S ~ SSAC74GK18S	74	34	85	800 ~ 1800	600	0.85	3.5	1000	125	0.355	SOT-227
SSAC90GK08 ~ SSAC90GK20	140	90	85	800 ~ 2000	1700	0.85	3.2	1000	125	0.180	Fig.38
SSAC90GK08B ~ SSAC90GK20B	140	90	85	800 ~ 2000	1700	0.85	3.2	1000	125	0.280	Fig.23
SSAC90GK08S ~ SSAC90GK18S	90	41	85	800 ~ 1800	1700	0.85	3.2	1000	125	0.300	SOT-227
SSAC100GK08 ~ SSAC100GK22	157	100	85	800 ~ 2200	1700	0.85	3.2	1000	125	0.170	Fig.38

SSAC100GK08B ~ SSAC100GK22B	157	100	85	800 ~ 2200	1700	0.85	3.2	1000	125	0.270	Fig.23
SSAC116GK08 ~ SSAC116GK18	180	116	85	800 ~ 1800	2250	0.80	2.4	1000	125	0.150	Fig.38
SSAC116GK08B ~ SSAC116GK18B	180	116	85	800 ~ 1800	2250	0.80	2.4	1000	125	0.250	Fig.23
SSAC130GK08 ~ SSAC130GK18	204	130	85	800 ~ 1800	5500	0.80	1.5	1000	125	0.115	Fig.39
SSAC130GK08B ~ SSAC130GK18B	204	130	85	800 ~ 1800	5500	0.80	1.5	1000	125	0.230	Fig.4
SSAC140GK08 ~ SSAC140GK18	220	140	85	800 ~ 1800	2400	0.80	1.5	1000	140	0.100	Fig.38
SSAC165GK08 ~ SSAC165GK22	259	165	85	800 ~ 2200	6000	0.80	1.6	1000	125	0.078	Fig.39
SSAC165GK08B ~ SSAC165GK22B	259	165	85	800 ~ 2200	6000	0.80	1.6	1000	125	0.195	Fig.4
SSAC181GK08 ~ SSAC181GK18	284	181	85	800 ~ 1800	6000	0.88	1.15	1000	125	0.070	Fig.39
SSAC181GK08B ~ SSAC181GK18B	284	181	85	800 ~ 1800	6000	0.88	1.15	1000	125	0.185	Fig.4
SSAC200GK08B ~ SSAC200GK18B	314	200	85	800 ~ 1800	7900	0.95	1.05	1000	125	0.152	Fig.4
S3SSAC58G08E ~ S3SSAC58G18E	60	27	85	800 ~ 1800	550	0.85	11	1000	125	0.150	Fig.5
S3SSAC70G08B ~ S3SSAC70G18B	110	70	85	800 ~ 1800	1280	0.85	3.2	1000	125	0.070	Fig.53
S3SSAC70G08TB ~ S3SSAC70G18TB	110	70	85	800 ~ 1800	1280	0.85	3.2	1000	125	0.070	Fig.53
S4SSAC70G08B ~ S4SSAC70G18B	110	70	85	800 ~ 1800	1280	0.85	3.2	1000	125	0.070	Fig.53
S4SSAC110G08B ~ S4SSAC110G18B	170	110	85	800 ~ 1800	2250	0.85	2.4	1000	125	0.034	Fig.62

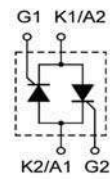
SRW1C112G08 ~ SRW1C112G18	112	51	85	800 ~ 1800	1000	0.85	5.6	1000	125	0.400	Fig.67
SRW1C142G08 ~ SRW1C142G18	130	58	85	800 ~ 1800	1150	0.85	5.2	1000	125	0.350	Fig.67
SRW1C176G08 ~ SRW1C176G18	175	80	85	800 ~ 1800	1500	0.85	3.7	1000	125	0.250	Fig.67
SRW1C206G08 ~ SRW1C206G18	206	105	85	800 ~ 1800	2250	0.8	2.4	1000	125	0.130	Fig.68



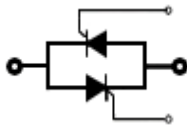
SSAC**



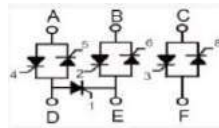
SSAC**B



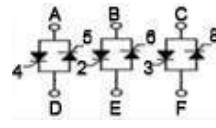
SOT-227



SRW1C

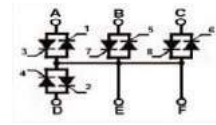


S3SSAC**TB



S3SSAC**B

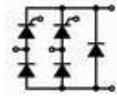
Without Suffix means with DCB Baseplate
Suffix " B " means with Copper Baseplate



S4SSAC**B

单相桥式半控模块(带续流二极管)

E310749

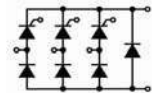


Single Phase Half Controlled Bridge Modules With Free Wheeling Diode

型号 TYPE	电气特性Electrical Characteristics									封装外形 Package Style
	IdAV		V _{DRM}	I _{TSM}	V _{TO}	r _T	dv/dt	T _{VJM}	R _{thJC}	
			/V _{RRM}	45°C/10ms						
A	°C	V	A	V	mΩ	V/μs	°C	K/W		
S1PHB15G08 ~ S1PHB15G18	15	85	800 ~ 1800	190	1.0	40	1000	125	2.40	Fig.13
S1PHB25G08E1 ~ S1PHB25G18E1	32	85	800 ~ 1800	200	0.85	27	1000	125	0.26	Fig.69
S1PHB28G08 ~ S1PHB28G18	28	85	800 ~ 1800	300	0.9	15	1000	125	1.40	Fig.13
S1PHB36G08 ~ S1PHB36G18	36	85	800 ~ 1800	320	0.85	13	1000	125	1.15	Fig.13
S1PHB40G08 ~ S1PHB40G18	40	85	800 ~ 1800	360	0.85	12	1000	125	1.00	Fig.13
S1PHB41GK08B ~ S1PHB41GK18B	41	85	800 ~ 1800	430	0.88	13	1000	125	0.98	Fig.59
S1PHB50GK08B ~ S1PHB50GK18B	50	85	800 ~ 1800	540	0.85	11	1000	125	0.90	Fig.59
S1PHB55G08B ~ S1PHB55G18B	55	85	800 ~ 1800	550	0.85	11	1000	125	0.90	Fig.41
S1PHB75GK08B ~ S1PHB75GK18B	75	85	800 ~ 1800	810	0.83	10.5	1000	125	0.85	Fig.59

三相桥式半控模块(带续流二极管)

E310749



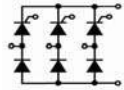
Three Phase Half Controlled Bridge Modules With Wheeling Diode

型号 TYPE	电气特性Electrical Characteristics									封装外形 Package Style
	IdAV		V _{DRM}	I _{TSM}	V _{TO}	r _T	dv/dt	T _{VJM}	R _{thJC}	
			/V _{RRM}	45°C/10ms						
A	°C	V	A	V	mΩ	V/μs	°C	K/W		
S3PHBD70G08B ~ S3PHBD70G18B	70	85	800 ~ 1800	550	0.85	11	1000	125	0.90	Fig.41
S3PHBD110G08B ~ S3PHBD110G18B	110	85	800 ~ 1800	1150	0.85	11	1000	125	0.65	Fig.43

S3PHBD180G08B ~ S3PHBD180G18B	180	85	800 ~ 1800	1500	0.85	3.5	1000	125	0.55	Fig.43
S3PHBN50G06 ~ S3PHBN50G18	50	85	600 ~ 1800	500	0.85	11	1000	125	0.04	Fig.70

三相桥式半控模块（不带续流二极管）

E310749

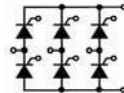


Three Phase Half Controlled Bridge Modules Without Free Wheeling Diodes

型号 TYPE	电气特性Electrical Characteristics									封装外形 Package Style
	IdAV		V _{DRM}	I _{TSM}	V _{TO}	r _T	dv/dt	T _{VJM}	R _{thJC}	
			/V _{RRM}	45°C/10ms						
A	°C	V	A	V	mΩ	V/μs	°C	K/W		
S3PHB70G08B ~ S3PHB70G18B	70	85	800 ~ 1800	550	0.85	11	1000	125	0.90	Fig.41
S3PHB110G08B ~ S3PHB110G18B	110	85	800 ~ 1800	1150	0.85	11	1000	125	0.65	Fig.43
S3PHB180G08B ~ S3PHB180G18B	180	85	800 ~ 1800	1500	0.85	11	1000	125	0.46	Fig.43

三相桥式全控模块（不带续流二极管）

E310749



Three Phase Full Controlled Bridge Modules Without Free Wheeling Diodes

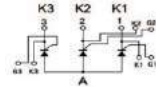
型号 TYPE	电气特性Electrical Characteristics									封装外形 Package Style
	IdAV		V _{DRM}	I _{TSM}	V _{TO}	r _T	dv/dt	T _{VJM}	R _{thJC}	
			/V _{RRM}	45°C/10ms					per chip	
A	°C	V	A	V	mΩ	V/μs	°C	K/W		
S3PFB70G08B ~ S3PFB70G18B	70	85	800 ~ 1800	550	0.85	11	1000	125	0.90	Fig.41
S3PFB110G08B ~ S3PFB110G18B	110	85	800 ~ 1800	1150	0.85	11	1000	125	0.65	Fig.43
S3PFB180G08B ~ S3PFB180G18B	180	85	800 ~ 1800	1500	0.85	11	1000	125	0.46	Fig.43

Suffix " B " means with Copper Baseplate;

Without Suffix means with DCB Baseplate;

三相半桥式晶闸管模块 (电焊机专用)

Three Phase Thyristor Half Bridge Modules (For Welding Machines)



型号 TYPE	电气特性 Electrical Characteristics										封装外形 Package Style
	I_T			V_{DRM}	I_{TSM}	V_{TM}	I_{GT}/V_{GT}	dw/dt	T_{VJM}	R_{thJC}	
	I_{TRMS}	I_{TVM}	@ T_C	V_{RRM}	50Hz					per chip	
	A	A	$^{\circ}C$	V	A	V	mA/V	V/ μs	$^{\circ}C$	$^{\circ}C/W$	
3TA60GK03NB-A 3TA60GK04NB-A 3TA60GK06NB-A	94	60	85	300 400 600	1640	1.25	75/1.2	500	150	0.35	Fig.25
3TA60GK03NB-B 3TA60GK04NB-B 3TA60GK06NB-B	94	60	85	300 400 600	1640	1.25	75/1.2	500	150	0.37	Fig.51
3TA80GK03NB-A 3TA80GK04NB-A 3TA80GK06NB-A	125	80	85	300 400 600	2280	1.20	75/1.2	500	150	0.34	Fig.25
3TA80GK03NB-B 3TA80GK04NB-B 3TA80GK06NB-B	125	80	85	300 400 600	2280	1.20	75/1.2	500	150	0.36	Fig.51
3TA100GK03NB-A 3TA100GK04NB-A 3TA100GK06NB-A	157	100	85	300 400 600	3200	1.20	75/1.2	500	150	0.30	Fig.25
3TA100GK03NB-B 3TA100GK04NB-B 3TA100GK06NB-B	157	100	85	300 400 600	3200	1.20	75/1.2	500	150	0.32	Fig.51
3TA130GK03NB-A 3TA130GK04NB-A 3TA130GK06NB-A	204	130	85	300 400 600	3800	1.20	75/1.2	500	150	0.20	Fig.25
3TA130GK03NB-B 3TA130GK04NB-B 3TA130GK06NB-B	204	130	85	300 400 600	3800	1.20	75/1.2	500	150	0.22	Fig.51
3TA150GK03NB 3TA150GK04NB 3TA150GK06NB	235	150	85	300 400 600	4000	1.20	100/1.5	500	150	0.16	Fig.47
3TA151GK03NB 3TA151GK04NB 3TA151GK06NB	235	150	85	300 400 600	4000	1.20	100/1.5	500	150	0.15	Fig.19
3TA200GK03NB 3TA200GK04NB 3TA200GK06NB	314	200	85	300 400 600	5400	1.20	100/1.5	500	150	0.13	Fig.47
3TA201GK03NB 3TA201GK04NB 3TA201GK06NB	314	200	85	300 400 600	5400	1.20	100/1.5	500	150	0.12	Fig.19
3TA250GK03NB 3TA250GK04NB 3TA250GK06NB	392	250	85	300 400 600	6750	1.20	100/1.5	500	150	0.09	Fig.47
3TA251GK03NB 3TA251GK04NB 3TA251GK06NB	392	250	85	300 400 600	6750	1.20	100/1.5	500	150	0.08	Fig.19

高结温低漏电流肖特基势垒二极管

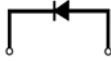
High Tjm Low IRRM Schottky Barrier Diodes Tj = - 65°C ~ +175°C, Tjm = +175°C

型号 TYPE	电气特性Electrical Characteristics							封装外形 Package Style
	V _R =V _{RRM}	I _{FAV}	I _{FSM}	I _{RRM} at V _R =V _{RRM}		V _{Fmax} at I _{FM}		
				25°C	125°C	V	A	
V	A	A	mA	mA	V	A		
MBR540	40	5.0	175	0.05	10	0.65	5	TO -220AC
MBR560	60	5.0	175	0.05	10	0.75	5	TO -220AC
MBR580	80	5.0	120	0.10	10	0.85	5	TO -220AC
MBR5100	100	5.0	120	0.10	10	0.85	5	TO -220AC
MBR5150	150	5.0	120	0.10	15	0.95	5	TO -220AC
MBR5200	200	5.0	120	0.10	15	0.95	5	TO -220AC
MBR730	30	7.5	150	0.10	15	0.60	7	TO -220AC
MBR735	35	7.5	150	0.10	15	0.60	7	TO -220AC
MBR740	40	7.5	150	0.10	15	0.65	7	TO -220AC
MBR745	45	7.5	150	0.10	15	0.65	7	TO -220AC
MBR750	50	7.5	150	0.50	15	0.75	7	TO -220AC
MBR760	60	8.0	150	0.50	15	0.75	7.5	TO -220AC
MBR830	30	8.0	150	0.10	15	0.60	8	TO -220AC
MBR835	35	8.0	150	0.10	15	0.60	8	TO -220AC
MBR840	40	8.0	150	0.10	0.65	0.65	8	TO -220AC
MBR845	45	8.0	150	0.10	15	0.65	8	TO -220AC
MBR850	50	8.0	150	0.10	15	0.65	8	TO -220AC
MBR860	60	8.0	150	0.10	15	0.75	8	TO -220AC
MBR870	70	8.0	125	0.10	15	0.75	8	TO -220AC
MBR880	80	8.0	125	0.10	15	0.85	8	TO -220AC
MBR890	90	8.0	125	0.10	15	0.85	8	TO -220AC
MBR8100	100	8.0	125	0.10	15	0.85	8	TO -220AC
MBR870L	70	8.0	230	0.10	15	0.72	8	TO -263(D ² PAK)
MBR880L	80	8.0	230	0.10	15	0.72	8	TO -263(D ² PAK)
MBR890L	90	8.0	230	0.10	15	0.80	8	TO -263(D ² PAK)
MBR8100L	100	10.0	230	0.10	15	0.80	8	TO -263(D ² PAK)
MBR1030	30	10.0	150	0.10	15	0.60	10	TO -220AC
MBR1035	35	10.0	150	0.10	15	0.60	10	TO -220AC
MBR1040	40	10.0	150	0.10	15	0.65	10	TO -220AC
MBR1045	45	10.0	150	0.10	15	0.65	10	TO -220AC
MBR1050	50	10.0	150	0.10	25	0.65	10	TO -220AC
MBR1060	60	10.0	150	0.10	25	0.75	10	TO -220AC
MBR1070	70	10.0	150	0.10	50	0.75	10	TO -220AC
MBR1080	80	10.0	150	0.10	50	0.85	10	TO -220AC
MBR1090	90	10.0	150	0.10	50	0.85	10	TO -220AC
MBR10100	100	10.0	150	0.20	50	0.85	10	TO -220AC
MBR10150	150	10.0	150	0.20	70	0.90	10	TO -220AC
MBR10200	200	10.0	150	0.50	100	0.95	10	TO -220AC
MBR1630	30	16.0	150	0.20	40	0.63	16	TO -220AC
MBR1635	35	16.0	150	0.20	40	0.63	16	TO -220AC
MBR1640	40	16.0	150	0.20	40	0.63	16	TO -220AC
MBR1645	45	16.0	150	0.20	40	0.63	16	TO -220AC
MBR1650	50	16.0	150	1.00	50	0.75	16	TO -220AC
MBR1660	60	16.0	150	1.00	50	0.75	16	TO -220AC
MBR16100	100	16.0	150	1.00	50	0.85	16	TO -220AC
MBR16150	150	16.0	145	1.00	50	0.85	16	TO -220AC
MBR16200	200	16.0	140	1.00	50	0.9	16	TO -220AC

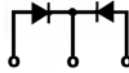
MBR1030CT	30	10.0	125	0.10	15	0.60	5	TO -220AB
MBR1035CT	35	10.0	125	0.10	15	0.60	5	TO -220AB
MBR1040CT	40	10.0	125	0.10	15	0.70	5	TO -220AB
MBR1045CT	45	10.0	125	0.10	15	0.70	5	TO -220AB
MBR1050CT	50	10.0	125	0.10	15	0.80	5	TO -220AB
MBR1060CT	60	10.0	125	0.10	15	0.80	5	TO -220AB
MBR1070CT	70	10.0	120	0.10	15	0.85	5	TO -220AB
MBR1080CT	80	10.0	120	0.10	15	0.85	5	TO -220AB
MBR1090CT	90	10.0	120	0.10	15	0.85	5	TO -220AB
MBR10100CT	100	10.0	120	0.10	15	0.85	5	TO -220AB
MBR10150CT	150	10.0	120	0.05	15	0.95	5	TO -220AB
MBR10200CT	200	10.0	120	0.05	15	0.95	5	TO -220AB
MBRB1630CT	30	16.0	150	0.20	15	0.63	8	TO -263(D ² PAK)
MBRB1635CT	35	16.0	150	0.20	15	0.63	8	TO -263(D ² PAK)
MBRB1640CT	40	16.0	150	0.20	15	0.65	8	TO -263(D ² PAK)
MBRB1645CT	45	16.0	150	0.20	15	0.65	8	TO -263(D ² PAK)
MBRB2515L	15	25.0	150	15.00	200@100°C	0.45	25	TO -263(D ² PAK)
MBR1630CT	30	16.0	150	0.20	15	0.63	8	TO -220AB
MBR1635CT	35	16.0	150	0.20	15	0.63	8	TO -220AB
MBR1640CT	40	16.0	150	0.20	15	0.65	8	TO -220AB
MBR1645CT	45	16.0	150	0.20	15	0.65	8	TO -220AB
MBR1650CT	50	16.0	150	1.00	50	0.75	8	TO -220AB
MBR1660CT	60	16.0	150	1.00	50	0.75	8	TO -220AB
MBR1670CT	70	16.0	125	1.00	50	0.75	8	TO -220AB
MBR1680CT	80	16.0	125	0.10	50	0.85	8	TO -220AB
MBR1690CT	90	16.0	125	0.10	50	0.85	8	TO -220AB
MBR16100CT	100	16.0	125	0.10	50	0.85	8	TO -220AB
MBR2030CT	30	20.0	150	0.10	15	0.75	20	TO -220AB
MBR2035CT	35	20.0	150	0.10	15	0.75	20	TO -220AB
MBR2040CT	40	20.0	150	0.10	15	0.80	20	TO -220AB
MBR2045CT	45	20.0	150	0.10	15	0.80	20	TO -220AB
MBR2050CT	50	20.0	150	0.10	15	0.85	20	TO -220AB
MBR2060CT	60	20.0	150	0.10	15	0.85	20	TO -220AB
MBR2070CT	70	20.0	150	0.50	100	0.95	20	TO -220AB
MBR2080CT	80	20.0	150	0.50	100	0.95	20	TO -220AB
MBR2090CT	90	20.0	150	0.50	100	0.95	20	TO -220AB
MBR20100CT	100	20.0	150	0.50	100	0.95	20	TO -220AB
MBR20150CT	150	20.0	150	1.00	100	0.9	10	TO -220AB
MBR20200CT	200	20.0	150	1.00	200	0.95	10	TO -220AB
MBR20250CT	250	20.0	135	1.00	200	0.98	10	TO -220AB
MBR2530CT	30	25.0	150	0.20	40	0.75	30	TO -220AB
MBR2535CT	35	25.0	150	0.20	40	0.75	30	TO -220AB
MBR2540CT	40	25.0	150	0.20	40	0.82	30	TO -220AB
MBR2545CT	45	25.0	150	1.00	50	0.7	15	TO -220AB
MBR2550CT	50	25.0	150	1.00	50	0.75	15	TO -220AB
MBR2560CT	60	25.0	150	1.00	50	0.75	15	TO -220AB
MBR3030CT	30	30.0	200	0.20	40	0.75	30	TO -220AB
MBR3035CT	35	30.0	200	0.20	40	0.75	30	TO -220AB
MBR3040CT	40	30.0	200	0.20	40	0.75	30	TO -220AB
MBR3045CT	45	30.0	200	0.20	40	0.75	30	TO -220AB
MBR3050CT	50	30.0	200	0.20	40	0.85	30	TO -220AB
MBR3060CT	60	30.0	200	1.00	40	0.76	30	TO -220AB
MBR3030PT	30	30.0	200	1.00	60	0.76	30	TO -247AD
MBR3035PT	35	30.0	200	1.00	60	0.76	30	TO -247AD

MBR3040PT	40	30.0	200	1.00	60	0.76	30	TO -247AD
MBR3045PT	45	30.0	200	1.00	60	0.76	30	TO -247AD
MBR3050PT	50	30.0	200	1.00	100	0.8	30	TO -247AD
MBR3060PT	60	30.0	200	1.00	100	0.8	30	TO -247AD
MBR30100PT	100	30.0	250	1.00	100	0.85	15	TO -247AD
MBR30150PT	150	30.0	245	1.00	100	0.9	15	TO -247AD
MBR30200PT	200	30.0	240	1.00	100	0.95	15	TO -247AD
MBR30250PT	250	30.0	230	1.00	100	0.98	15	TO -247AD
MBR4030PT	30	40.0	400	1.00	50	0.60	20	TO -247AD
MBR4035PT	35	40.0	400	1.00	50	0.60	20	TO -247AD
MBR4040PT	40	40.0	400	1.00	50	0.65	20	TO -247AD
MBR4045PT	45	40.0	400	1.00	50	0.65	20	TO -247AD
MBR4050PT	50	40.0	400	1.00	100	0.65	20	TO -247AD
MBR4060PT	60	40.0	400	1.00	100	0.65	20	TO -247AD
MBR40100PT	100	40.0	300	1.00	100	0.65	20	TO -247AD
MBR6030PT	30	60.0	500	1.00	50	0.65	30	TO -247AD
MBR6035PT	35	60.0	500	1.00	50	0.65	30	TO -247AD
MBR6040PT	40	60.0	500	1.00	50	0.65	30	TO -247AD
MBR6045PT	45	60.0	500	1.00	50	0.65	30	TO -247AD
MBR2×40-100	100	2×40	450	1.00	50	0.85	80	SOT-227
MBR2×60-30	30	2×60	800	4.00	50	0.65	60	SOT-227
MBR2×60-40	40	2×60	800	4.00	50	0.65	60	SOT-227
MBR2×60-45	45	2×60	800	4.00	50	0.65	60	SOT-227
MBR2×60-100	100	2×60	700	4.00	100	0.93	120	SOT-227
MBR2×80-30	30	2×80	900	4.00	200	0.66	80	SOT-227
MBR2×80-40	40	2×80	900	4.00	200	0.66	80	SOT-227
MBR2×80-45	45	2×80	900	4.00	200	0.66	80	SOT-227
MBR2×100-150	150	2×100	1200	4.00	200	0.99	200	SOT-227
MBR2×120-30	30	2×120	1800	4.00	200	0.62	120	SOT-227
MBR2×120-40	40	2×120	1800	4.00	200	0.65	120	SOT-227
MBR2×120-45	45	2×120	1800	4.00	200	0.65	120	SOT-227
MBR2×160-45NB	45	2×160	1600	4.00	200	0.95	320	SOT-227
MBR2×160-100NB	100	2×160	1400	4.00	200	1.05	320	SOT-227
MBR2×160-150NB	150	2×160	1350	4.00	200	1.15	300	SOT-227
MBR2×160-200NB	200	2×150	1300	4.00	200	1.2	300	SOT-227
MBR150-45NB	45	150	1400	2	20	0.65	150	Fig.42
MBR150-60NB	60	150	1400	2	20	0.75	150	Fig.42
MBR150-100NB	100	150	1400	2	20	0.85	150	Fig.42
MBR250-45NB	45	250	2100	4	40	0.65	250	Fig.42
MBR250-60NB	60	250	2100	4	40	0.75	250	Fig.42
MBR250-100NB	100	250	2100	4	40	0.85	250	Fig.42
MBR300-45NB	45	300	3000	8	80	0.65	300	Fig.42
MBR300-60NB	60	300	3000	8	80	0.75	300	Fig.42
MBR300-100NB	100	300	3000	8	80	0.85	300	Fig.42
MBR400-45NB	45	400	4500	10	120	0.65	400	Fig.42
MBR400-60NB	60	400	4500	10	120	0.75	400	Fig.42
MBR400-100NB	100	400	4500	10	120	0.85	400	Fig.42
MBR400-200NB	200	400	4500	10	120	0.95	400	Fig.42
SRBD20045CT	45	200	1200	2	20	0.65	100	Fig.45
SRBD20060CT	60	200	1200	2	20	0.75	100	Fig.45
SRBD200100CT	100	200	1200	2	20	0.85	100	Fig.45
SRBD200150CT	150	200	1200	2	20	0.90	100	Fig.45
SRBD200200CT	200	200	1200	2	20	0.95	100	Fig.45
SRBD30045CT	45	300	1800	4	40	0.65	150	Fig.45

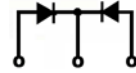
SRBD30060CT	60	300	1800	4	40	0.75	150	Fig.45
SRBD300100CT	100	300	1800	4	40	0.85	150	Fig.45
SRBD300150CT	150	300	1800	4	40	0.90	150	Fig.45
SRBD300200CT	200	300	1800	4	40	0.95	150	Fig.45
SRBD40045CT	45	400	2500	8	80	0.65	200	Fig.45
SRBD40060CT	60	400	2500	8	80	0.75	200	Fig.45
SRBD400100CT	100	400	2500	8	80	0.85	200	Fig.45
SRBD400150CT	150	400	2500	8	80	0.90	200	Fig.45
SRBD400200CT	200	400	2500	8	80	0.95	200	Fig.45



MBRxxxx
TO-220AC
TO-247AC



MBRxxxxCT
TO-220AB
TO-263



MBRxxxxPT
TO-247AD



Fig.42

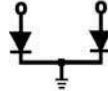
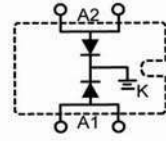


Fig.44, Fig.45



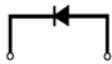
SOT-227

Suffix " NB " means Non-Isolated Package with Copper Baseplate

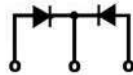
超快恢复二极管

Ultra Fast Recovery Diodes $T_j = -40^{\circ}\text{C} \sim +125^{\circ}\text{C}$, $T_{jm} = +125^{\circ}\text{C}$

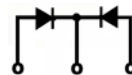
型号 TYPE	电气特性Electrical Characteristics								封装外形 Package Style
	$V_R=V_{RRM}$	I_{FAV}	I_{FSM}	I_R at $V_R=V_{RRM}$		V_{Fmax} at I_F		$T_{rr(max)}$	
				25°C	125°C	V	A	@RG1 CKT	
	V	A	A	μA	mA	V	A	ns	
MUR820	200	8	100	20	0.50	0.950	8	35	TO-220AC
MUR860	600	8	100	20	1.50	1.500	8	50	TO-220AC
MURB860	600	8	100	20	1.50	1.500	8	50	TO-263
MUR1520	200	15	100	50	3.00	0.950	15	35	TO-220AC
MUR1560	600	15	100	50	3.00	1.500	15	50	TO-220AC
MURB1560	600	15	100	50	3.00	1.500	15	50	TO-263
MURB2960	600	29	300	100	7.00	1.500	29	50	TO-263
MUR3020	200	30	300	250	1.00	1.250	30	35	TO-247AC
MUR3030	300	30	300	100	1.00	1.300	30	35	TO-247AC
MUR3040	400	37	300	100	7.00	1.500	37	50	TO-247AC
MUR3060	600	37	300	100	7.00	1.500	37	50	TO-247AC
MUR6020	200	69	600	50	11.00	1.200	60	35	TO-247AC
MUR6030	300	60	550	200	14.00	1.200	60	35	TO-247AC
MUR6040	400	60	550	500	14.00	1.500	60	50	TO-247AC
MUR6060	600	60	550	200	14.00	1.500	60	50	TO-247AC
MUR12060	600	126	600	3mA	20.00	1.700	120	75	TO-247AC
MURB1620CT	200	16	90	5	0.10	0.950	8	35	TO-263
MUR1660CT	600	16	125	5	0.50	1.500	8	50	TO-220AB
MUR2060CT	600	20	110	50	1.00	1.500	10	50	TO-220AB
MUR3020PT	200	30	100	50	3.00	0.950	15	35	TO-247AD
MUR3030PT	300	30	100	50	3.00	0.950	15	35	TO-247AD
MUR3040PT	400	30	100	50	3.00	1.500	15	50	TO-247AD
MUR3060PT	600	30	100	50	3.00	1.500	15	50	TO-247AD
MUR6020PT	200	60	325	200	5.00	1.250	30	50	TO-247AD
MUR6030PT	300	60	325	200	5.00	1.250	30	50	TO-247AD
MUR6040PT	400	60	300	100	7.00	1.500	30	50	TO-247AD
MUR6060PT	600	60	300	100	7.00	1.500	30	50	TO-247AD



MURxxx
TO -220AC
TO -247AC
TO -263



MURxxxCT
TO -220AB



MURxxxPT
TO -247AD

软恢复特性超快恢复外延二极管


Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diodes

Tj = - 40°C ~ +125°C, Tjm = +125°C

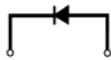
型号 TYPE	电气特性 Electrical Characteristics								封装外形 Package Style
	V _R =V _{RRM}	I _{FAV}	I _{FSM}	I _{RRM} at V _R =V _{RRM}		V _{Fmax} at I _{FM}		Trr(max)	
				25°C	125°C	V	A	@RG1 CKT	
V	A	A	μA	mA	V	A	ns		
SUR820	200	8	100	20	1.50	1.500	8	50	TO-220AC
SUR860	600	8	100	20	1.50	1.500	8	50	TO-220AC
SURB860	600	8	100	20	1.50	1.500	8	50	TO-263
SUR8100	1000	8	100	20	1.50	1.500	8	50	TO-220AC
SUR1520	200	15	100	50	3.00	1.700	16	50	TO-220AC
SUR1560	600	15	100	50	3.00	1.700	16	50	TO-220AC
SURB1560	600	15	100	50	3.00	1.700	16	50	TO-220AC
SUR15100	1000	15	75	250	4.00	2.600	15	70	TO-220AC
SUR15120	1200	15	75	250	4.00	2.600	15	70	TO-220AC
SUR20100	1000	17	130	750	7.00	2.150	12	60	TO-220AC
SUR20120	1200	17	130	750	7.00	2.150	12	60	TO-220AC
SURB2960	600	29	300	100	7.00	1.600	29	50	TO-263
SUR3020	200	30	300	100	7.00	1.600	37	50	TO-247AC
SUR3030	300	30	300	100	7.00	1.600	37	50	TO-247AC
SUR3040	400	30	300	100	7.00	1.600	37	50	TO-247AC
SUR3060	600	30	300	100	7.00	1.600	37	50	TO-247AC
SUR3080	800	30	200	750	7.00	2.550	30	60	TO-247AC
SUR30100	1000	30	200	750	7.00	2.550	30	60	TO-247AC
SUR30120	1200	30	200	750	7.00	2.550	30	60	TO-247AC
SUR6020	200	60	600	50	11.00	1.080	60	50	TO-247AC
SUR6030	300	60	550	200	14.00	1.800	70	50	TO-247AC
SUR6040	400	60	550	200	14.00	1.800	70	50	TO-247AC
SUR6060	600	60	550	200	14.00	1.800	70	50	TO-247AC
SUR6080	800	60	500	3000	14.00	2.300	60	50	TO-247AC
SUR60100	1000	60	500	3000	14.00	2.300	60	50	TO-247AC
SUR60120	1200	60	500	3000	14.00	2.300	60	50	TO-247AC
SUR12060	600	120	600	3000	20.00	1.300	70	50	TO-247AC
SUR120120	1200	120	600	3000	20.00	1.800	70	60	TO-247AC
SURB1610CT	100	16	100	20	1.50	1.500	8	50	TO-263
SURB1620CT	200	16	100	20	1.50	1.500	8	50	TO-263
SUR1660CT	600	16	100	20	1.50	1.500	8	50	TO-220AB
SUR2060CT	600	20	100	50	3.00	1.700	16	50	TO-220AB
SUR20100CT	1000	20	75	250	4.00	2.700	12	60	TO-220AB
SUR3020PT	200	30	100	50	3.00	1.700	16	50	TO-247AD
SUR3030PT	300	30	100	50	3.00	1.700	16	50	TO-247AD
SUR3040PT	400	30	100	50	3.00	1.700	16	50	TO-247AD
SUR3060PT	600	30	100	50	3.00	1.700	16	50	TO-247AD
SUR30100PT	1000	30	75	250	4.00	2.600	15	70	TO-247AD
SUR30120PT	1200	30	75	250	4.00	2.600	15	70	TO-247AD
SUR6020PT	200	60	300	100	7.00	1.400	37	50	TO-247AD
SUR6030PT	300	60	300	100	7.00	1.400	37	50	TO-247AD
SUR6040PT	400	60	300	100	7.00	1.400	37	50	TO-247AD
SUR6060PT	600	60	300	100	7.00	1.400	37	50	TO-247AD
SUR60100PT	1000	60	200	750	7.00	2.550	30	60	TO-247AD
SUR60120PT	1200	60	200	750	7.00	2.550	30	60	TO-247AD

软恢复特性超快恢复外延二极管

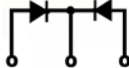
Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diodes

 $T_j = -40^{\circ}\text{C} \sim +125^{\circ}\text{C}$, $T_{jm} = +125^{\circ}\text{C}$
 E310749

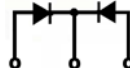
型号 TYPE	电气特性 Electrical Characteristics								封装外形 Package Style
	$V_R = V_{RRM}$	I_{FAV}	I_{FSM}	I_{RRM} at $V_R = V_{RRM}$		V_{Fmax} at I_{FM}		$T_{rr(max)}$	
				25°C	125°C	V	A	@RG1 CKT	
V	A	A	μA	mA	V	A	ns		
SUR2×30-04	400	2×30	300	100	7.00	1.600	30	50	SOT-227
SUR2×30-06	600	2×30	300	100	7.00	1.600	30	50	SOT-227
SUR2×30-08	800	2×30	200	750	7.00	2.400	30	50	SOT-227
SUR2×30-10	1000	2×30	200	750	7.00	2.400	30	50	SOT-227
SUR2×30-12	1200	2×28	200	750	7.00	2.550	30	60	SOT-227
SUR2×60-02	200	2×71	950	50	11.00	1.080	60	50	SOT-227
SUR2×60-04	400	2×60	550	200	14.00	1.800	60	50	SOT-227
SUR2×60-06	600	2×60	550	200	14.00	1.800	60	50	SOT-227
SUR2×60-08	800	2×60	500	3000	14.00	2.300	60	50	SOT-227
SUR2×60-10	1000	2×60	500	3000	14.00	2.300	60	50	SOT-227
SUR2×60-12	1200	2×52	450	2200	14.00	2.500	60	60	SOT-227
SUR2×100-06	600	2×96	1200	3000	20.00	1.250	100	50	SOT-227
SUR2×100-12	1200	2×91	900	3000	15.00	1.870	100	60	SOT-227
SUR2×120-02	200	2×123	1200	1000	20.00	1.100	120	50	SOT-227
SUR2×125-12	1200	2×125	1400	3000	15.00	2.200	125	50	SOT-227



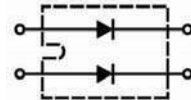
SURxxxx
TO -220AC
TO -247AC



SURxxxxCT
TO -220AB
TO -263



SURxxxxPT
TO -247AD



SUR2×
SOT -227

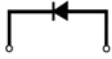
软恢复特性高性能高结温超快恢复外延二极管

Soft Recovery Behaviour High - Performance Wide Temperature Range Ultra Fast

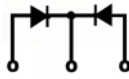
Recovery Epitaxial Diodes $T_j = -55^{\circ}\text{C} \sim +175^{\circ}\text{C}$, $T_{jm} = +175^{\circ}\text{C}$

型号 TYPE	电气特性Electrical Characteristics								封装外形 Package Style
	$V_R=V_{RRM}$	I_{FAV}	I_{FSM}	I_{RRM} at $V_R=V_{RRM}$		V_{Fmax} at I_{FM}		$T_{rr}(max)$	
				25°C	125°C			@RG1 CKT	
	V	A	A	μA	mA	V	A	ns	
HURB820	200	8	80	50	200	1.30	8	25	TO-263
HUR820	200	8	80	50	200	1.30	8	25	TO-220AC
HURB830	300	10	60	60	250	1.75	10	30	TO-263
HUR830	300	10	60	60	250	1.75	10	30	TO-220AC
HUR1060	600	10	50	60	250	2.10	10	35	TO-220AC
HUR10100	1000	10	40	60	250	2.94	10	40	TO-220AC
HUR10120	1200	10	40	60	250	2.94	10	40	TO-220AC
HURB1520	200	15	140	100	500	1.68	15	30	TO-263
HUR1520	200	15	140	100	500	1.68	15	30	TO-220AC
HURB1530	300	15	140	100	500	1.68	15	30	TO-263
HUR1530	300	15	140	100	500	1.68	15	30	TO-220AC
HUR1540	400	15	140	100	500	1.68	15	30	TO-220AC
HUR1560	600	15	110	100	500	2.04	15	35	TO-220AC
HUR15100	1000	15	90	100	500	2.75	15	40	TO-220AC
HUR15120	1200	15	90	100	500	2.75	15	40	TO-220AC
HUR2960	600	30	250	250	1000	1.61	30	35	TO-220AC
HUR29100	1000	30	200	250	1000	2.75	30	40	TO-220AC
HUR29120	1200	30	200	250	1000	2.75	30	40	TO-220AC
HUR3030	300	30	300	250	1000	1.25	30	30	TO-247AC
HUR3040	400	30	300	250	1000	1.46	30	30	TO-247AC
HUR3060	600	30	250	250	1000	1.6	30	35	TO-247AC
HUR30100	1000	30	200	250	1000	2.74	30	40	TO-247AC
HUR30120	1200	30	200	250	1000	2.74	30	40	TO-247AC
HUR6030	300	60	700	650	2500	1.71	60	30	TO-247AC
HUR6040	400	60	700	650	2500	1.71	60	30	TO-247AC
HUR6060	600	60	600	650	2500	2.04	60	35	TO-247AC
HUR60100	1000	60	500	650	2500	2.66	60	40	TO-247AC
HUR60120	1200	60	500	650	2500	2.66	60	40	TO-247AC
HUR1620CT	200	2×8	80	50	200	1.3	8	25	TO-220AB
HUR1630CT	300	2×8	60	60	250	1.75	10	30	TO-220AB
HUR2060CT	600	2×10	50	60	250	2.1	10	35	TO-220AB
HUR20100CT	1000	2×10	40	60	250	2.94	10	40	TO-220AB
HUR20120CT	1200	2×10	40	60	250	2.94	10	40	TO-220AB
HURB3020CT	200	2×15	140	100	500	1.68	15	30	TO-263
HUR3020CT	200	2×15	140	100	500	1.68	15	30	TO-220AB
HUR3020PT	200	2×15	140	100	500	1.68	15	30	TO-247AD
HUR3030CT	300	2×15	140	100	500	1.68	15	30	TO-220AB
HUR3030PT	300	2×15	140	100	500	1.68	15	30	TO-247AD
HUR3040PT	400	2×15	140	100	500	1.68	15	30	TO-247AD
HUR3060PT	600	2×15	110	100	500	2.04	15	35	TO-247AD
HUR30100PT	1000	2×15	90	100	500	2.75	15	40	TO-247AD
HUR30120PT	1200	2×15	90	100	500	2.75	15	40	TO-247AD
HUR6030PT	300	2×30	300	250	1000	1.25	30	30	TO-247AD
HUR6040PT	400	2×30	300	250	1000	1.46	30	30	TO-247AD

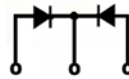
HUR6060PT	600	2×30	250	250	1000	1.6	30	35	TO-247AD
HUR60100PT	1000	2×30	200	250	1000	2.74	30	40	TO-247AD
HUR60120PT	1200	2×30	200	250	1000	2.74	30	40	TO-247AD
HUR2×30-30	300	2×30	300	250	1000	1.23	30	30	SOT-227
HUR2×30-40	400	2×30	300	250	1000	1.45	30	30	SOT-227
HUR2×30-60	600	2×30	250	250	1000	1.58	30	35	SOT-227
HUR2×30-100	1000	2×30	200	250	1000	2.72	30	40	SOT-227
HUR2×30-120	1200	2×30	200	250	1000	2.72	30	40	SOT-227
HUR2×60-30	300	2×60	600	650	2500	1.68	60	30	SOT-227
HUR2×60-40	400	2×60	600	650	2500	1.68	60	30	SOT-227
HUR2×60-60	600	2×60	600	650	2500	2.01	60	35	SOT-227
HUR2×60-100	1000	2×60	500	1000	4000	2.42	60	40	SOT-227
HUR2×60-120	1200	2×60	500	1000	4000	2.42	60	40	SOT-227
HUR2×100-40	400	2×100	1000	1000	4000	1.54	100	30	SOT-227



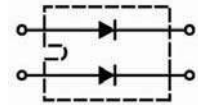
HURxxxx
TO-220AC
TO-247AC
TO-263



HURxxxxCT
TO-220AB
TO-263



HURxxxxPT
TO-247AD

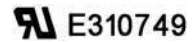


SOT-227

软恢复特性超快恢复外延二极管模块

Soft Recovery Behaviour Ultra Fast Recovery Epitaxial Diode Modules

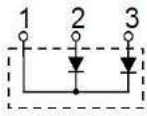
Tj = -40°C ~ +125°C, Tjm = +125°C



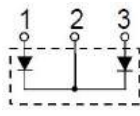
型号 TYPE	电气特性 Electrical Characteristics								封装外形 Package Style
	V _R =V _{RRM}	I _{FAV}	I _{FSM}	I _{RRM} at V _R =V _{RRM}		V _{Fmax} at I _{FM}		T _{rr(max)}	
				25°C	125°C	V	A	@RG1 CKT	
V	A	A	μA	mA	V	A	ns		
SDKF2×75-12B1	1200	2×75	1200	500	10	2.17	75	60	Fig.2
SDKF2×75-12B2	1200	2×75	1200	500	10	2.17	75	60	Fig.2
SDAF2×75-12B1	1200	2×75	1200	500	10	2.17	75	60	Fig.2
SDAF2×75-12B2	1200	2×75	1200	500	10	2.17	75	60	Fig.2
SDEF2×75-12B1	1200	2×75	1200	500	10	2.17	75	60	Fig.2
SDEF2×75-12B2	1200	2×75	1200	500	10	2.17	75	60	Fig.2
SDKF2×100-04B1	400	2×100	2000	500	10	1.30	100	50	Fig.2
SDKF2×100-04B2	400	2×100	2000	500	10	1.30	100	50	Fig.2
SDAF2×100-04B1	400	2×100	2000	500	10	1.30	100	50	Fig.2
SDAF2×100-04B2	400	2×100	2000	500	10	1.30	100	50	Fig.2
SDEF2×100-04B1	400	2×100	2000	500	10	1.30	100	50	Fig.2
SDEF2×100-04B2	400	2×100	2000	500	10	1.30	100	50	Fig.2
SDKF2×100-06B1	600	2×100	2000	500	10	1.35	100	50	Fig.2
SDKF2×100-06B2	600	2×100	2000	500	10	1.35	100	50	Fig.2
SDAF2×100-06B1	600	2×100	2000	500	10	1.35	100	50	Fig.2
SDAF2×100-06B2	600	2×100	2000	500	10	1.35	100	50	Fig.2
SDEF2×100-06B1	600	2×100	2000	500	10	1.35	100	50	Fig.2
SDEF2×100-06B2	600	2×100	2000	500	10	1.35	100	50	Fig.2
SDKF2×100-12B1	1200	2×100	2500	500	15	2.00	100	60	Fig.2
SDKF2×100-12B2	1200	2×100	2500	500	15	2.00	100	60	Fig.2
SDAF2×100-12B1	1200	2×100	2500	500	15	2.00	100	60	Fig.2

SDAF2×100-12B2	1200	2×100	2500	500	15	2.00	100	60	Fig.2
SDEF2×100-12B1	1200	2×100	2500	500	15	2.00	100	60	Fig.2
SDEF2×100-12B2	1200	2×100	2500	500	15	2.00	100	60	Fig.2
SDKF2×150-04B1	400	2×150	3040	600	18	1.55	150	50	Fig.3
SDKF2×150-04B2	400	2×150	3040	600	18	1.55	150	50	Fig.3
SDAF2×150-04B1	400	2×150	3040	600	18	1.55	150	50	Fig.3
SDAF2×150-04B2	400	2×150	3040	600	18	1.55	150	50	Fig.3
SDEF2×150-04B1	400	2×150	3040	600	18	1.55	150	50	Fig.3
SDEF2×150-04B2	400	2×150	3040	600	18	1.55	150	50	Fig.3
SDKF2×150-06B1	600	2×150	3040	600	18	1.55	150	50	Fig.3
SDKF2×150-06B2	600	2×150	3040	600	18	1.55	150	50	Fig.3
SDAF2×150-06B1	600	2×150	3040	600	18	1.55	150	50	Fig.3
SDAF2×150-06B2	600	2×150	3040	600	18	1.55	150	50	Fig.3
SDEF2×150-06B1	600	2×150	3040	600	18	1.55	150	50	Fig.3
SDEF2×150-06B2	600	2×150	3040	600	18	1.55	150	50	Fig.3
SDKF2×200-04B1	400	2×200	3300	600	18	1.55	200	50	Fig.3
SDKF2×200-04B2	400	2×200	3300	600	18	1.55	200	50	Fig.3
SDAF2×200-04B1	400	2×200	3300	600	18	1.55	200	50	Fig.3
SDAF2×200-04B2	400	2×200	3300	600	18	1.55	200	50	Fig.3
SDEF2×200-04B1	400	2×200	3300	600	18	1.55	200	50	Fig.3
SDEF2×200-04B2	400	2×200	3300	600	18	1.55	200	50	Fig.3
SDKF2×200-06B1	600	2×200	3300	600	18	1.55	200	50	Fig.3
SDKF2×200-06B2	600	2×200	3300	600	18	1.55	200	50	Fig.3
SDAF2×200-06B1	600	2×200	3300	600	18	1.55	200	50	Fig.3
SDAF2×200-06B2	600	2×200	3300	600	18	1.55	200	50	Fig.3
SDEF2×200-06B1	600	2×200	3300	600	18	1.55	200	50	Fig.3
SDEF2×200-06B2	600	2×200	3300	600	18	1.55	200	50	Fig.3
SDKF2×300-06B1	600	2×300	4400	800	20	1.55	300	50	Fig.3
SDKF2×300-06B2	600	2×300	4400	800	20	1.55	300	50	Fig.3
SDAF2×300-06B2	600	2×300	4400	800	20	1.55	300	50	Fig.3
SDAF2×300-06B2	600	2×300	4400	800	20	1.55	300	50	Fig.3
SDEF2×300-06B2	600	2×300	4400	800	20	1.55	300	50	Fig.3
SDEF2×300-06B2	600	2×300	4400	800	20	1.55	300	50	Fig.3
SDKF2×350-02B1	200	2×350	5400	1000	30	1.20	350	35	Fig.3
SDKF2×350-02B2	200	2×350	5400	1000	30	1.20	350	35	Fig.3
SDF450-12	1200	453	4800	2000	50	2.00	450	60	Fig.4
SDF500-06	600	514	5280	1500	50	1.60	500	50	Fig.4
SDF550-02	200	550	5580	1500	50	1.25	550	35	Fig.4
SUR150-02NB	200	150	1800	100	20	1.10	150	35	Fig.42
SUR150-04NB	400	150	1700	100	20	1.30	150	50	Fig.42
SUR150-06NB	600	150	1600	100	20	1.50	150	50	Fig.42
SUR250-02NB	200	250	2600	150	20	1.10	250	35	Fig.42
SUR250-04NB	400	250	2500	150	20	1.30	250	50	Fig.42
SUR250-06NB	600	250	2400	150	20	1.50	250	50	Fig.42
SUR300-02NB	200	300	3200	200	20	1.10	300	35	Fig.42
SUR300-04NB	400	300	3100	200	20	1.30	300	50	Fig.42
SUR300-06NB	600	300	3000	200	20	1.50	300	50	Fig.42
SUR400-02NB	200	400	4900	300	20	1.10	400	35	Fig.42
SUR400-04NB	400	400	4800	300	20	1.30	400	50	Fig.42
SUR400-06NB	600	400	4700	300	20	1.50	400	50	Fig.42
SRUD20020CT	200	2x100	1000	50	5	1.10	100	35	Fig.45
SRUD20040CT	400	2x100	900	50	5	1.30	100	50	Fig.45
SRUD20060CT	600	2x100	800	50	5	1.50	100	50	Fig.45
SRUD30020CT	200	2x150	1400	100	6	1.10	150	35	Fig.45

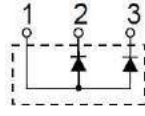
SRUD30040CT	400	2x150	1300	100	6	1.30	150	50	Fig.45
SRUD30060CT	600	2x150	1200	100	6	1.50	150	50	Fig.45
SRUD40020CT	200	2x200	1800	200	8	1.10	200	35	Fig.45
SRUD40040CT	400	2x200	1700	200	8	1.30	200	50	Fig.45
SRUD40060CT	600	2x200	1600	200	8	1.50	200	50	Fig.45
SDKF3X100-04NB	400	3x100	900	50	5	1.30	100	50	Fig.52
SDKF3X100-06NB	600	3x100	800	50	5	1.50	100	50	Fig.52
SDKF3X150-04NB	400	3x150	1200	100	6	1.50	150	50	Fig.52
SDKF3X150-06NB	600	3x150	1200	100	6	1.50	150	50	Fig.52



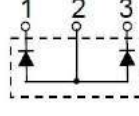
SDKF2X-B1



SDKF2X-B2



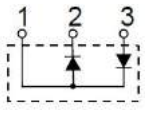
SDAF2X-B1



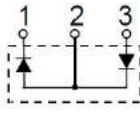
SDAF2X-B2



SDF



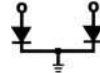
SDEF2X-B1



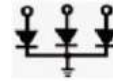
SDEF2X-B2



SUR-NB



SRUD**CT



SDKF3X-NB

整流二极管分立器件 Diode Discretets

Tj = - 40°C ~ +150°C, Tjm = +150°C

型号 TYPE	电气特性 Electrical Characteristics							内部电路 Circuit	封装外形 Package Style
	IFAVM	VR=VRRM	IFRMS	IFSM	VFmax at IFM		RthJC		
	@Tc=100°C			@45°C; 10ms	V	A			
A	V	A	A	V	A	K/W			
SD1001 ~ SD1016	10	100 ~ 1600	16	150	1.25	10	1.29	1	TO -220AC
SD2001 ~ SD2016	20	100 ~ 1600	32	250	1.25	20	1.25	1	TO -220AC
SD2001F ~ SD2016F	20	100 ~ 1600	32	250	1.25	20	1.35	1	ITO -220AC
SD3001 ~ SD3016	30	100 ~ 1600	47	300	1.25	30	1.00	1	TO -220AC
SD4502 ~ SD4516	45	200 ~ 1600	70	475	1.25	45	0.55	1	TO -247AC
SD7004 ~ SD7018	70	400 ~ 1800	110	1500	1.17	70	0.2	1	TO -247AC
70TD40 ~ 70TD180	70	400 ~ 1800	110	1500	1.17	70	0.2	1	TO -247AC
SDD10N01 ~ SDD10N16	2×10	100 ~ 1600	2×16	100	1.25	10	1.25	2	TO - 220AB
SDD25N02 ~ SDD25N16	2×25	200 ~ 1600	2×40	300	1.25	25	0.45	2	TO -247AD
SDD45N02 ~ SDD45N18	2×45	100 ~ 1800	2×70	485	1.25	45	0.2	2	TO -247AD
SDD46N02 ~ SDD46N18	2×45	200 ~ 1800	2×70	490	1.25	46	0.2	2	TO -247P
SDD80N02 ~ SDD80N18	2×80	200 ~ 1800	2×125	900	1.25	80	0.15	2	TO -247P
SD150-01NB ~ SD150-16NB	150	100 ~ 1600	235	1500	1.25	150	1.00	3	Fig.42
SD250-01NB ~ SD250-16NB	250	100 ~ 1600	390	2500	1.25	250	0.80	3	Fig.42
SD300-01NB		100							

~ SD300-16NB	300	~ 1600	470	3000	1.25	300	0.75	3	Fig.42
~ SD400-01NB	400	~ 1600	620	4000	1.25	400	0.70	3	Fig.42



Circuit1



Circuit 2


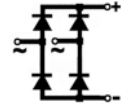


Circuit3

Suffix "NB" means Non-Isolated with Copper Base

单相桥式整流模块

Single Phase Bridge Rectifiers


 E310749


型号 TYPE	电气特性Electrical Characteristics							封装外形 Package Style
	I _{FAV}	V _R =V _{RRM}	I _{FSM}	I _R at V _R =V _{RRM}		V _{Fmax} at I _{FM}		
				25°C	125°C			
				A	V	A	μA	
GBJ602 ~ GBJ616	6	200 ~ 1600	80	5	500	1.00	3.0	GBJ
GBJ802 ~ GBJ816	8	200 ~ 1600	100	5	500	1.00	4.0	GBJ
GBJ1002 ~ GBJ1016	10	200 ~ 1600	120	10	500	1.05	5.0	GBJ
GBJ1502 ~ GBJ1516	15	200 ~ 1600	180	10	500	1.05	7.5	GBJ
GBJ2002 ~ GBJ2016	20	200 ~ 1600	240	10	600	1.05	10	GBJ
GBJ2502 ~ GBJ2516	25	200 ~ 1600	300	10	800	1.05	12.5	GBJ
GBJ2502AV ~ GBJ2516AV	25	200 ~ 1600	300	10	800	1.05	12.5	GBJ
GBJ3502 ~ GBJ3516	35	200 ~ 1600	420	15	1000	1.10	17.5	GBJ
GBJ3502AV ~ GBJ3516AV	35	200 ~ 1600	420	15	1000	1.10	17.5	GBJ
S1PDB1502 ~ S1PDB1518	15	200 ~ 1800	300	5	500	1.10	7.5	Fig.57
S1PDB2502 ~ S1PDB2518	25	200 ~ 1600	350	10	800	1.10	12.5	Fig.57
S1PDB2502AV ~ S1PDB2518AV	25	200 ~ 1600	350	10	800	1.10	12.5	Fig.57
S1PDB3502 ~ S1PDB3518	35	200 ~ 1800	400	20	1000	1.10	17.5	Fig.57
S1PDB3502AV ~ S1PDB3518AV	35	200 ~ 1800	400	20	1000	1.10	17.5	Fig.57

S1PDB4002 ~ S1PDB4018	40	200 ~ 1800	500	30	1000	1.10	20	Fig.57
S1PDB5002 ~ S1PDB5018	50	200 ~ 1800	600	40	1000	1.10	25	Fig.57
S1PDB40N02 ~ S1PDB40N18	40	200 ~ 1800	500	30	1000	1.10	20	Fig.27
S1PDB50N02 ~ S1PDB50N18	50	200 ~ 1800	600	40	1000	1.10	25	Fig.27
S1PDB40N08S ~ S1PDB40N18S	40	800 ~ 1800	450	200	4	1.25	60	SOT-227
S1PDB52N08 ~ S1PDB52N18	52	800 ~ 1800	520	300	5	1.25	78	Fig.7
S1PDB60N08 ~ S1PDB60N18	60	800 ~ 1800	600	500	8	1.25	90	Fig.7
S1PDB61N08AV ~ S1PDB61N18AV	60	800 ~ 1800	1000	300	5	1.25	90	Fig.59
S1PDB72N08 ~ S1PDB72N18	72	800 ~ 1800	720	800	10	1.25	110	Fig.7
S1PDB100N08 ~ S1PDB100N18	100	800 ~ 1800	1000	800	11	1.25	150	Fig.8
S1PDB102N08 ~ S1PDB102N18	100	800 ~ 1800	1500	300	5	1.25	150	Fig.60
S1PDB122N08 ~ S1PDB122N18	122	800 ~ 1800	1200	800	12	1.25	180	Fig.8
S1PDB174N08 ~ S1PDB174N18	174	800 ~ 1800	1700	1000	15	1.25	260	Fig.8

三相桥式整流模块

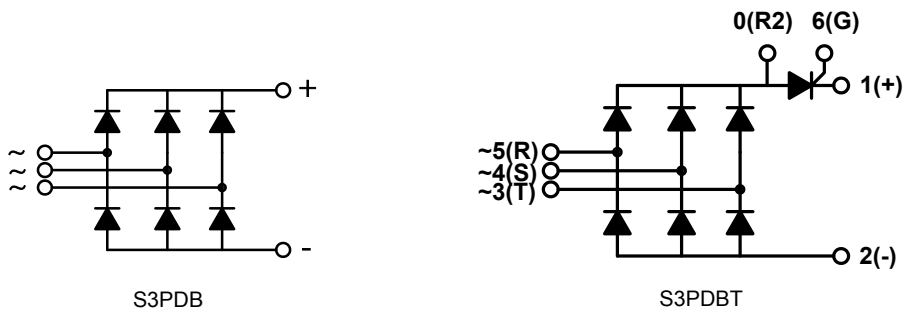
Three Phase Rectifier Module

 E310749

型号 TYPE	电气特性 Electrical Characteristics								封装外形 Package Style
	I_{DAV}	V_{RRM}	I_{FSM}	V_{TO}	r_T	V_{Fmax} at I_{FM}		R_{thJC}	
	@ $T_c=100^\circ C$		@ $45^\circ C; 10ms$			per chip		per chip	
	A	V	A	A	m Ω	V	A	K/W	
S3PDB12N08P ~ S3PDB12N16P	12	800 ~ 1600	100	0.8	10	1.20	12.0	7.00	Fig.46
S3PDB18N08P ~ S3PDB18N16P	18	800 ~ 1600	150	0.8	8.5	1.20	18.0	6.90	Fig.46
S3PDB24N08P ~ S3PDB24N16P	24	800 ~ 1600	200	0.8	6.1	1.20	24.0	5.80	Fig.46
S3PDB24N08PAV ~ S3PDB24N16PAV	24	800 ~ 1600	200	0.8	6.1	1.20	24.0	5.80	Fig.46
S3PDB25N08 ~ S3PDB25N18	25	800 ~ 1800	100	0.8	40	1.20	25.0	2.30	Fig.10
S3PDB30N08 ~ S3PDB30N18	30	800 ~ 1800	270	0.8	40	1.20	30.0	0.90	Fig.24
S3PDB3508 ~ S3PDB3518	35 @ $55^\circ C$	800 ~ 1800	250	0.8	40	1.20	35.0	3.80	Fig.55
S3PDB35N08 ~ S3PDB35N18	35	800 ~ 1800	350	0.8	7.5	1.20	35.0	3.40	Fig.28
S3PDB36N08P ~ S3PDB36N16P	36	800 ~ 1600	300	0.8	5.2	1.20	36.0	4.50	Fig.46
S3PDB36N08PAV ~ S3PDB36N16PAV	36	800 ~ 1600	300	0.8	5.2	1.20	36.0	4.50	Fig.46
S3PDB4008 ~ S3PDB4018	40 @ $55^\circ C$	800 ~ 1800	400	0.8	8	1.20	40.0	8.50	Fig.55
S3PDB40N08 ~ S3PDB40N18	40	800 ~ 1800	400	0.8	8	1.20	40.0	3.35	Fig.28
S3PDB42N08P ~ S3PDB42N16P	42	800 ~ 1600	400	0.8	4.8	1.20	42.0	4.30	Fig.46
S3PDB42N08PAV ~ S3PDB42N16PAV	42	800 ~ 1600	400	0.8	4.8	1.20	42.0	4.30	Fig.46
S3PDB5008 ~ S3PDB5018	50 @ $55^\circ C$	800 ~ 1800	500	0.8	40	1.20	50.0	8.00	Fig.55


S3PDB50N12 ~ S3PDB50N18	50	1200 ~ 1800	460	0.8	8	1.20	50.0	2.85	Fig.28
S3PDB51N08 ~ S3PDB51N18	50	800 ~ 1800	460	0.8	8	1.20	50.0	0.24	Fig.9
S3PDB60N08 ~ S3PDB60N18	60	800 ~ 1800	550	0.8	8	1.20	60.0	0.24	Fig.9
S3PDB61N08 ~ S3PDB61N18	61	800 ~ 1800	850	0.8	5	1.25	60.0	0.27	Fig.49
S3PDB62N08 ~ S3PDB62N18	60	800 ~ 1800	550	0.8	5	1.25	60.0	0.31	Fig.71
B6U61A08 ~ B6U61A18	60	800 ~ 1800	550	0.8	5	1.25	60.0	0.31	Fig.71
S3PDB70N08 ~ S3PDB70N18	70	800 ~ 1800	590	0.8	6	1.20	70.0	1.30	Fig.24
S3PDB80N08 ~ S3PDB80N18	80	800 ~ 1800	750	0.8	5	1.20	80.0	1.10	Fig.9
S3PDB81N08 ~ S3PDB81N18	81	800 ~ 1800	750	0.8	8	1.20	80.0	1.10	Fig.49
S3PDB85N08 ~ S3PDB85N18	85	800 ~ 1800	750	0.8	6	1.20	85.0	1.30	Fig.24
S3PDB86N08 ~ S3PDB86N18	86	800 ~ 1800	530	0.8	7.5	1.20	86.0	1.20	Fig.10
S3PDB91N08 ~ S3PDB91N18	91	800 ~ 1800	650	0.8	5	1.20	90.0	0.92	Fig.30
S3PDB99N08 ~ S3PDB99N18	100	800 ~ 1800	920	0.8	4	1.20	100.0	0.90	Fig.9
S3PDB100N08 ~ S3PDB100N18	100	800 ~ 1800	920	0.8	4	1.20	100.0	0.90	Fig.11
S3PDB101N08 ~ S3PDB101N18	100	800 ~ 1800	920	0.8	4	1.20	100.0	1.00	Fig.49
S3PDB104N08 ~ S3PDB104N18	100	800 ~ 1800	920	0.3	5	1.25	100.0	0.14	Fig.50
B6U104A08 ~ B6U104A18	100	800 ~ 1800	1250	0.3	5	1.25	100.0	0.14	Fig.50
S3PDB108N08E2 ~ S3PDB108N18E2	117	800 ~ 1800	900	0.5	3	1.35	117.0	0.14	Fig.72
S3PDB130N08 ~ S3PDB130N18	130	800 ~ 1800	1200	0.8	4	1.20	130.0	0.80	Fig.11

S3PDB150N08 ~ S3PDB150N18	150	800 ~ 1800	1500	0.3	8	1.60	150.0	0.14	Fig.73
S3PDB160N08 ~ S3PDB160N18	160	800 ~ 1800	1500	0.8	4	1.20	160.0	0.70	Fig.11
S3PDB161N08 ~ S3PDB161N18	161	800 ~ 1800	1500	0.8	4	1.20	160.0	0.71	Fig.30
S3PDB180N08 ~ S3PDB180N18	180	800 ~ 1800	1800	0.8	3	1.20	180.0	0.65	Fig.11
S3PDB200N08 ~ S3PDB200N18	200	800 ~ 1800	2240	0.8	2.6	1.20	200.0	0.45	Fig.11
S3PDB250N08 ~ S3PDB250N18	250	800 ~ 1800	2800	0.8	2.2	1.20	250.0	0.38	Fig.11
S3PDBT75N08 ~ S3PDBT75N18	75	800 ~ 1800	910	0.8	10	1.20	75.0	0.4	Fig.74
S3PDBT100N08 ~ S3PDBT100N18	100	800 ~ 1800	1186	0.8	10	1.20	100.0	0.36	Fig.74
S3PDBT150N08 ~ S3PDBT150N18	150	800 ~ 1800	1460	0.8	10	1.20	150.0	0.18	Fig.75
S3PDBT200N08 ~ S3PDBT200N18	200	800 ~ 1800	1850	0.8	15	1.15	200.0	0.18	Fig.75



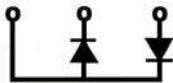
二极管-二极管整流模块

Diode-Diode Modules

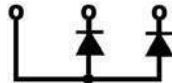
 E310749

型号 TYPE	电气特性Electrical Characteristics							封装外形 Package Style
	I_{FAVM}	$V_R=V_{RRM}$	I_{FRMS}	I_{FSM}	V_{Fmax} at I_{FM}		R_{thJC}	
	@ $T_C=100^{\circ}C$			@ $45^{\circ}C; 10ms$	V	A		
SDD36N08 ~ SDD36N18	36	800 ~ 1800	56	650	1.38	80	0.50	Fig.33
SDD36N08B ~ SDD36N18B	36	800 ~ 1800	56	650	1.38	80	0.60	Fig.2
SDD60N08 ~ SDD60N18	60	800 ~ 1800	94	1150	1.60	200	0.295	Fig.33
SDD60N08B ~ SDD60N18B	60	800 ~ 1800	94	1150	1.60	200	0.395	Fig.2
SDD70N08 ~ SDD70N18	70	800 ~ 1800	110	1400	1.48	200	0.255	Fig.33
SDD70N08B ~ SDD70N18B	70	800 ~ 1800	110	1400	1.48	200	0.355	Fig.2
SDD100N08 ~ SDD100N18	100	800 ~ 1800	157	1700	1.60	300	0.175	Fig.33
SDD100N08B ~ SDD100N18B	100	800 ~ 1800	157	1700	1.60	300	0.275	Fig.2
SDD120N08 ~ SDD120N18	120	800 ~ 1800	188	2800	1.43	300	0.13	Fig.33
SDD120N08B ~ SDD120N18B	120	800 ~ 1800	188	2800	1.43	300	0.23	Fig.2
SDD165N08 ~ SDD165N18	165	800 ~ 1800	260	4700	1.30	300	0.105	Fig.34
SDD165N08B ~ SDD165N18B	165	800 ~ 1800	260	4700	1.30	300	0.205	Fig.3
SDD190N08 ~ SDD190N18	190	800 ~ 1800	300	6600	1.15	300	0.095	Fig.34
SDD190N08B ~ SDD190N18B	190	800 ~ 1800	300	6600	1.15	300	0.195	Fig.3

SDD250N08 ~ SDD250N18	250	800 ~ 1800	400	11000	1.25	750	0.07	Fig.6
SDD253N08BT ~ SDD253N18BT	253	800 ~ 1800	400	11000	1.25	750	0.27	Fig.40
SDD320N08 ~ SDD320N18	320	800 ~ 1800	500	11500	1.20	990	0.065	Fig.6
SDD320N08BT ~ SDD320N18BT	320	800 ~ 1800	500	11500	1.20	990	0.065	Fig.40
SDD600N08BT ~ SDD600N18BT	600	800 ~ 1800	942	19000	1.45	1800	0.045	Fig.17
SDD800N08PT ~ SDD800N18PT	800	800 ~ 1800	1256	25000	1.45	2400	0.015	Fig.29



SDD



SDA



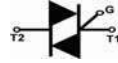
SDK

Suffix"B" means with Copper Baseplate

Suffix"BT" means Pressure Contact Technology with BusBar Terminal

Suffix"PT" means Pressure Contact Technology with Screw Terminal

绝缘式双向可控硅 Isolated Triacs



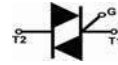
型号 TYPE	电气特性 Electrical Characteristics											封装外形 Package Style
	ITRMS	VDRM /VRRM	IGT	VGT	IDRM /IRRM	VTM	IH	i ² T	ITSM	dv/dt	RthJC	
	A	V	mA	V	mA	V	mA	A ² S	A	V/μs	°C/W	
BTA04-200 ~ BTA04-1000	4	200 ~ 1000	5~10	1.3	0.01	1.55	15	3	25	50	3.7	TO-220AB
BTA06-200 ~ BTA06-1000	6	200 ~ 1000	6~25	1.3	0.05	1.55	15	7.8	60	50	2.2	TO-220AB
BTA08-200 ~ BTA08-1000	8	200 ~ 800	6~25	1.3	0.10	1.55	15	12	80	50	1.8	TO-220AB
BTA12-200 ~ BTA12-1000	12	200 ~ 1000	6~35	1.3	0.10	1.55	35	55	100	500	1.5	TO-220AB
BTA16-200 ~ BTA16-1000	16	200 ~ 1000	10~35	1.3	0.10	1.55	35	144	160	500	1.2	TO-220AB
BTA24-200 ~ BTA24-1000	24	200 ~ 1000	10~35	1.3	0.10	1.55	50	340	250	500	0.8	TO-220AB
BTA26-200 ~ BTA26-1000	26	200 ~ 1000	10~50	1.3	0.10	1.55	50	340	250	500	0.8	TO-218/TO-3P
BTA35-200 ~ BTA35-1600	35	200 ~ 1600	50	1.3	0.10	1.55	120	664	335	500	0.77	TO-218/TO-3P
BTA41-200 ~ BTA41-1600	41	200 ~ 1600	50	1.3	0.20	1.55	180	880	400	500	0.6	TO-218/TO-3P
SBTA25G04B ~ SBTA25G12B	25	400 ~ 1200	50	1.3	0.10	1.55	50	340	250	500	1.6	Fig.48
SBTA25G04 ~ SBTA25G12	25	400 ~ 1200	50	1.3	0.10	1.55	50	340	250	500	1.2	Fig.44
SBTA35G04B ~ SBTA35G12B	35	400 ~ 1200	50	1.3	0.10	1.55	120	664	335	500	1.5	Fig.48
SBTA35G04 ~ SBTA35G12	35	400 ~ 1200	50	1.3	0.10	1.55	120	664	335	500	1	Fig.44
SBTA41G04B ~ SBTA41G12B	41	400 ~ 1200	50	1.3	0.20	1.55	180	880	400	500	1.3	Fig.48
SBTA70G04B ~ SBTA70G12B	70	400 ~ 1200	50	1.3	0.2	1.551	100	6000	750	500	1.2	Fig.22
SBTA71G04S ~ SBTA71G12S	70	400 ~ 1200	50	1.3	0.2	1.55	100	6000	750	5000	1.2	SOT-227
SBTA72G04 ~ SBTA72G12	70	400 ~ 1200	50	1.3	0.2	1.55	100	6000	750	5000	0.9	Fig.33

Suffix " B " means with Copper Baseplate

Electrical Isolation from Leads to Mounting Tab \geq 2500VAC (RMS) 1min

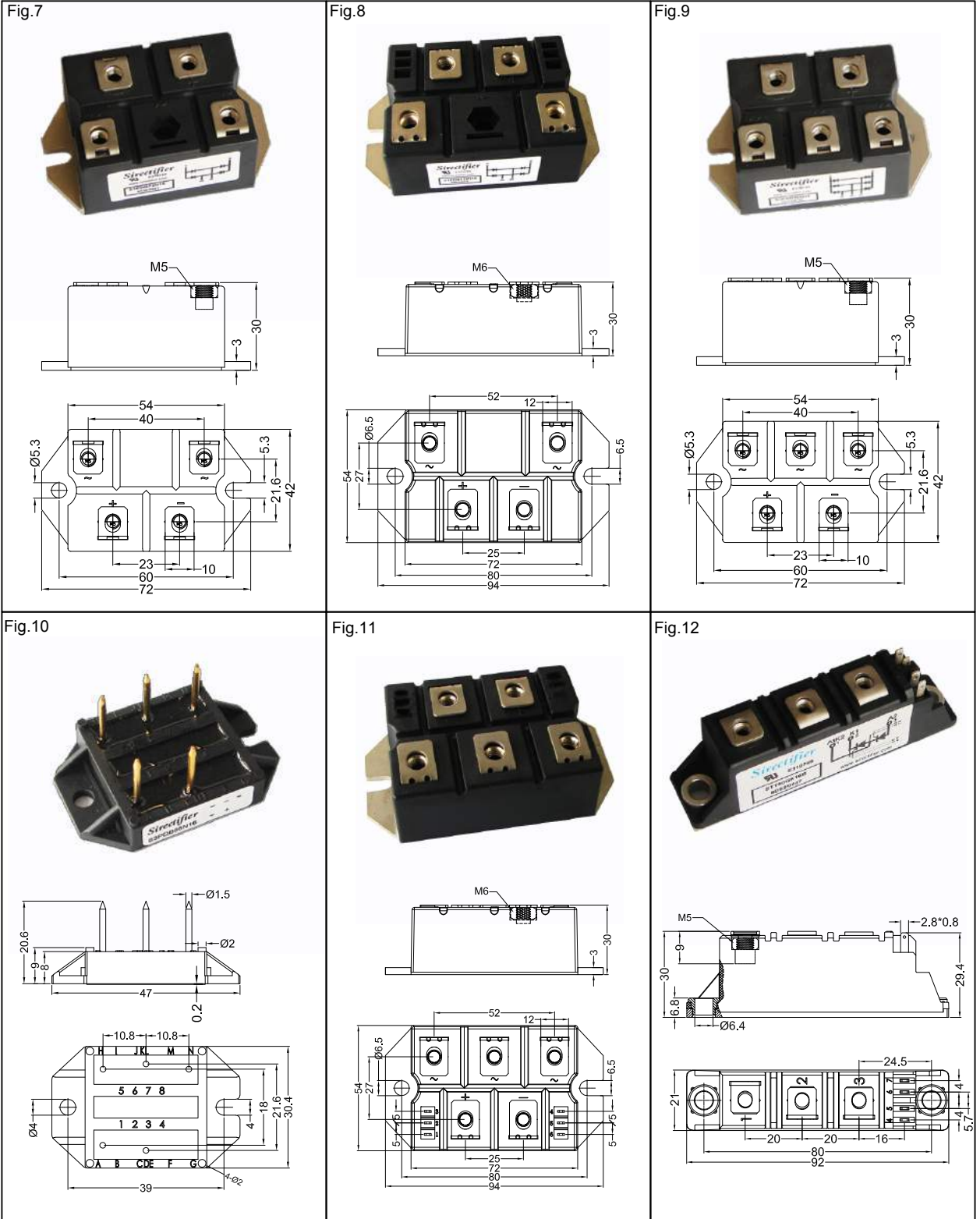
非绝缘式双向可控硅

Non-Isolated Triacs

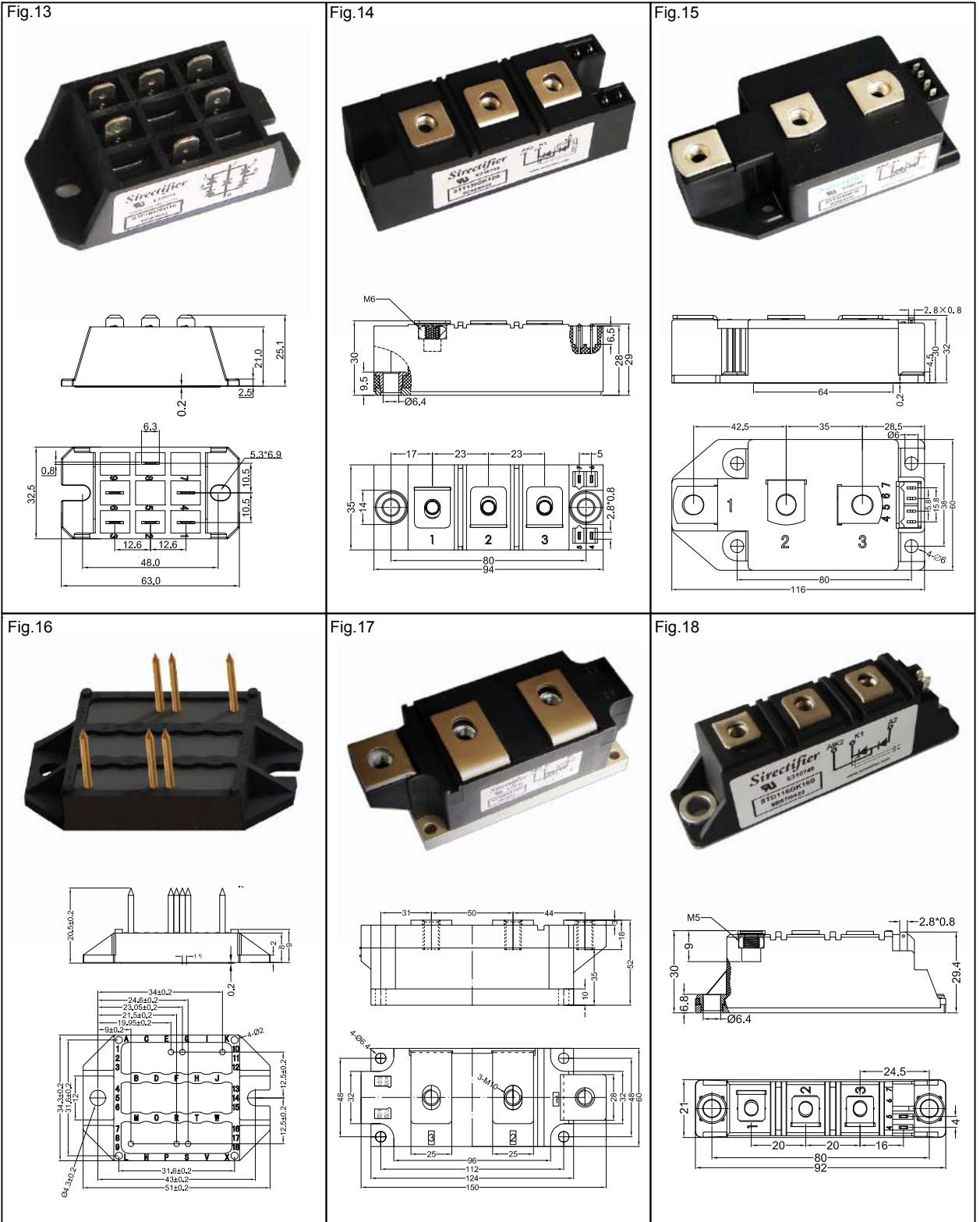


型号 TYPE	电气特性Electrical Characteristics											封装外形 Package Style
	ITRMS	VDRM /VRRM	IGT	VGT	IDRM /IRRM	VTM	IH	I ² T	ITSM	dv/dt	RthJC	
	A	V	mA	V	mA	V	mA	A ² S	A	V/μs	°C/W	
BTB06-200 ~ BTB06-1000	6	200 ~ 1000	50	1.3	0.05	1.55	50	21	60	400	1.80	TO-220AB
BTB08-200 ~ BTB08-1000	8	200 ~ 1000	50	1.3	0.05	1.55	50	36	80	400	1.60	TO-220AB
BTB12-200 ~ BTB12-1000	10	200 ~ 1000	50	1.3	0.10	1.55	50	55	100	500	1.50	TO-220AB
BTB16-200 ~ BTB16-1200	15	200 ~ 1200	50	1.3	0.10	1.55	50	144	160	500	1.20	TO-220AB
BTB24-200 ~ BTB24-1200	24	200 ~ 1200	50	1.3	0.10	1.55	75	340	250	500	0.80	TO-220AB
BTB26-200 ~ BTB26-1200	26	200 ~ 1200	50	1.3	0.10	1.55	75	340	250	500	0.80	TO-247AD
BTB35-200 ~ BTB35-1600	35	200 ~ 1600	100	1.3	0.10	1.55	120	664	335	500	0.70	TO-247AD
BTB40-200 ~ BTB40-1600	40	200 ~ 1600	100	1.3	0.20	1.55	180	880	400	500	0.77	TO-220AB
BTB41-200 ~ BTB41-1600	41	200 ~ 1600	100	1.3	0.20	1.55	180	880	400	500	0.60	TO-247AD
BTB50-200 ~ BTB50-1600	50	200 ~ 1600	100	1.3	0.20	1.55	180	1100	500	500	0.55	TO-247AD

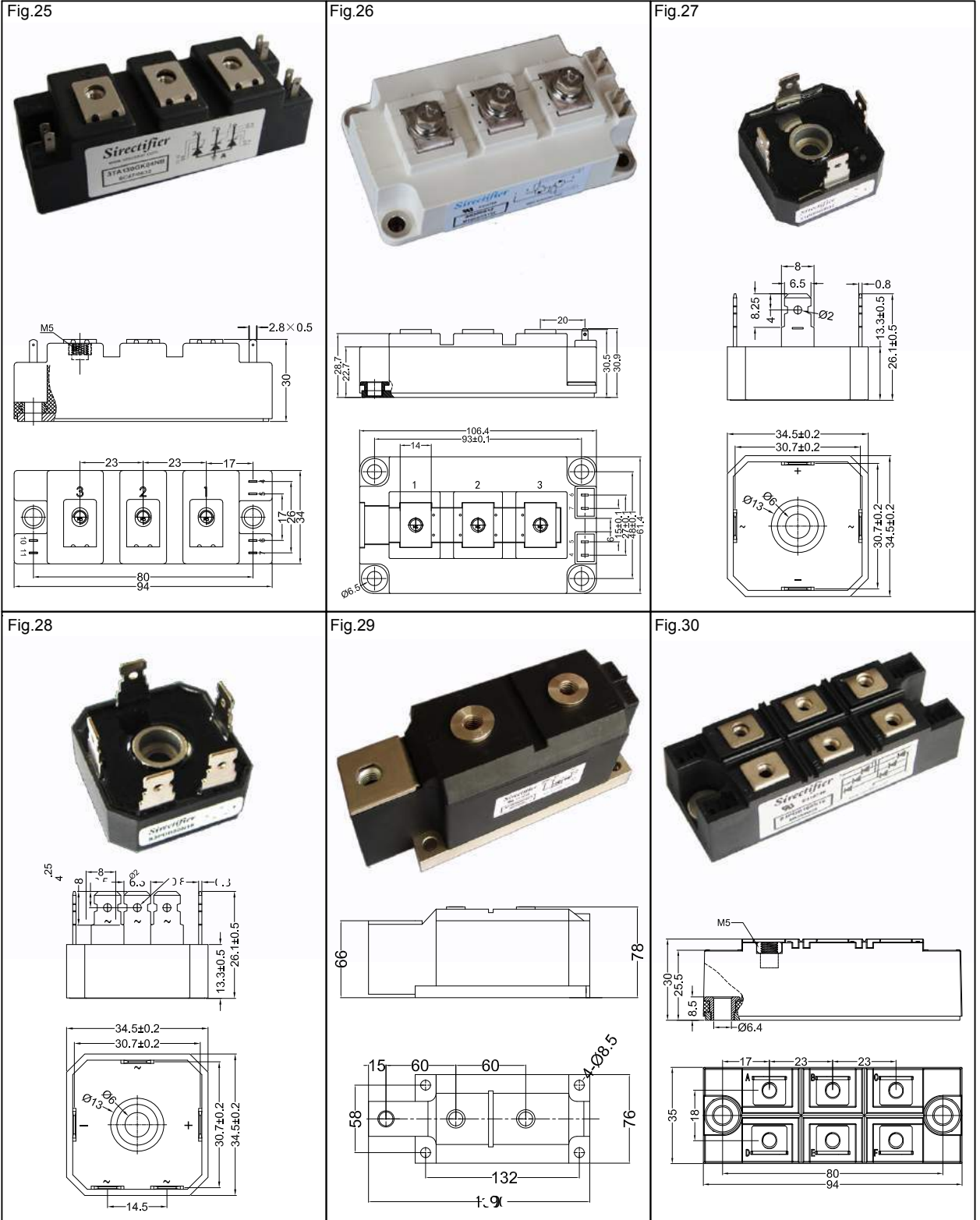
Outline Drawings



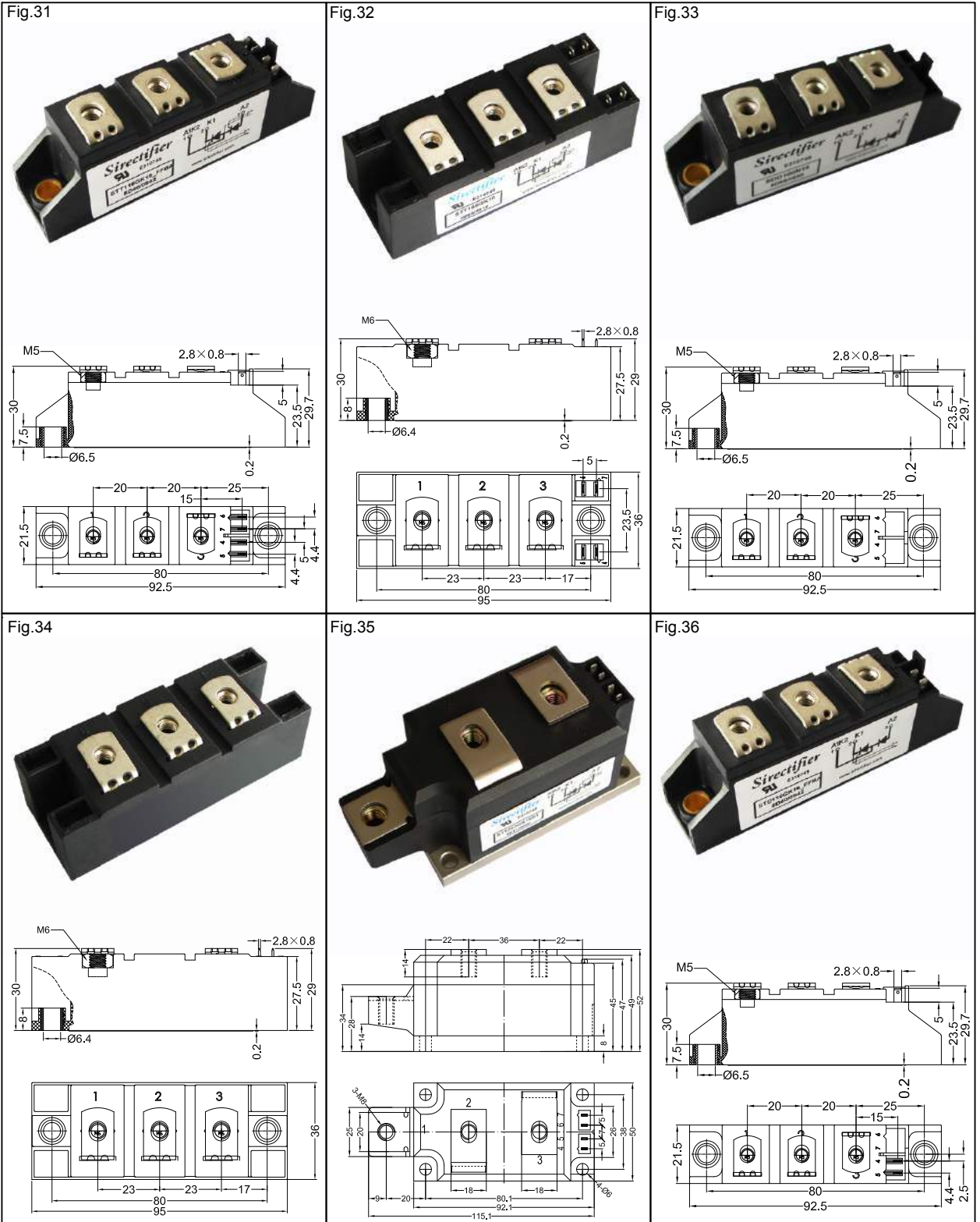
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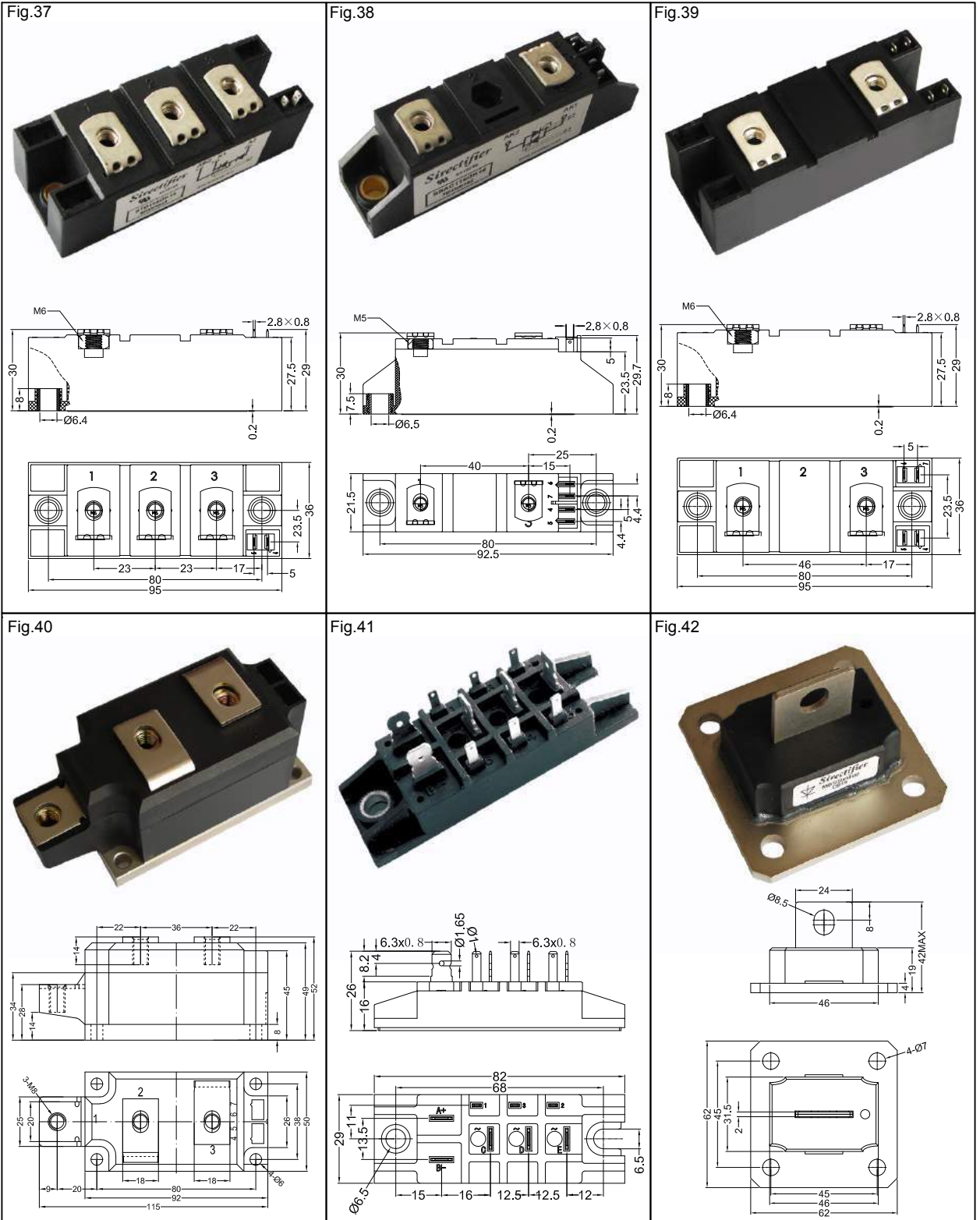
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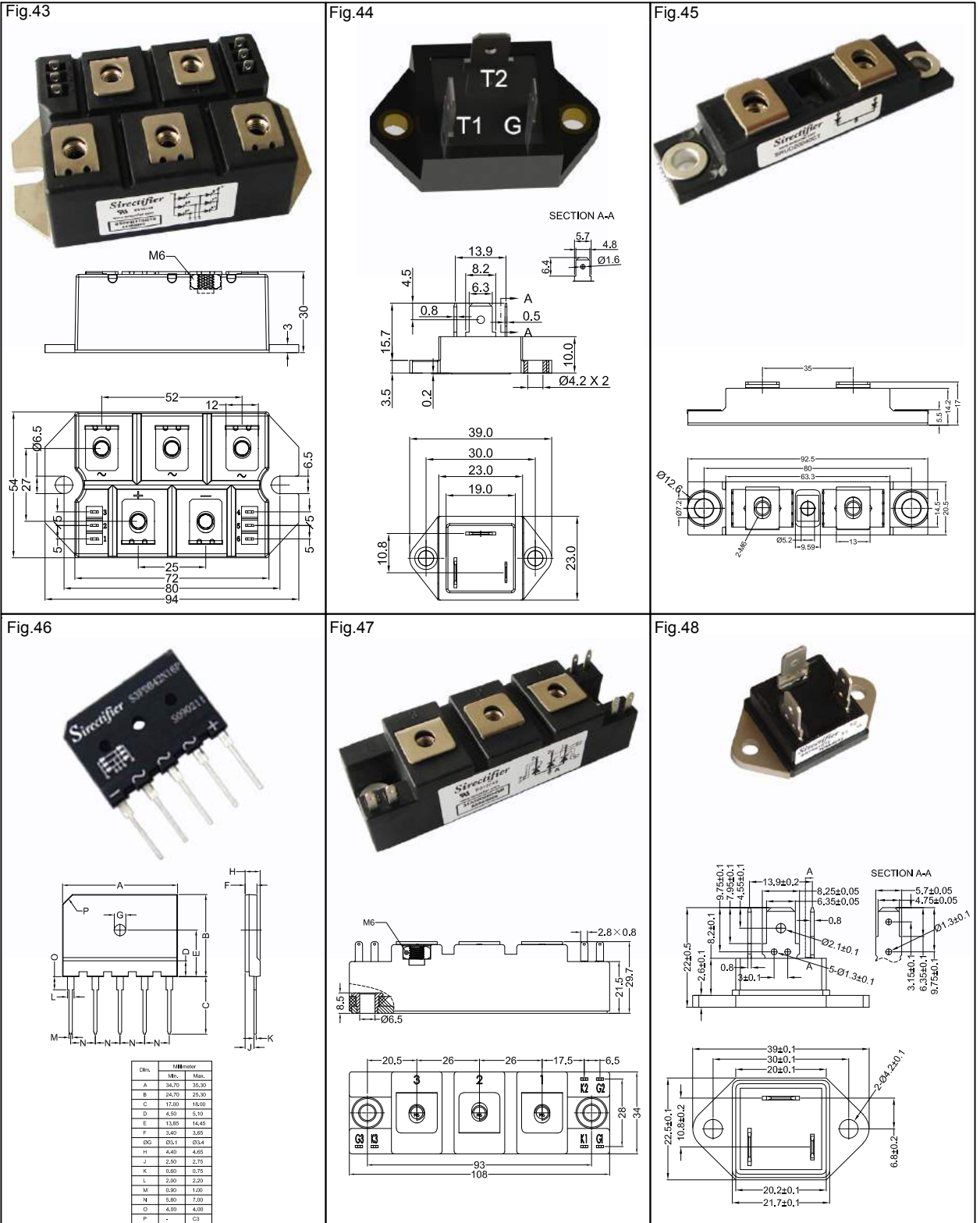
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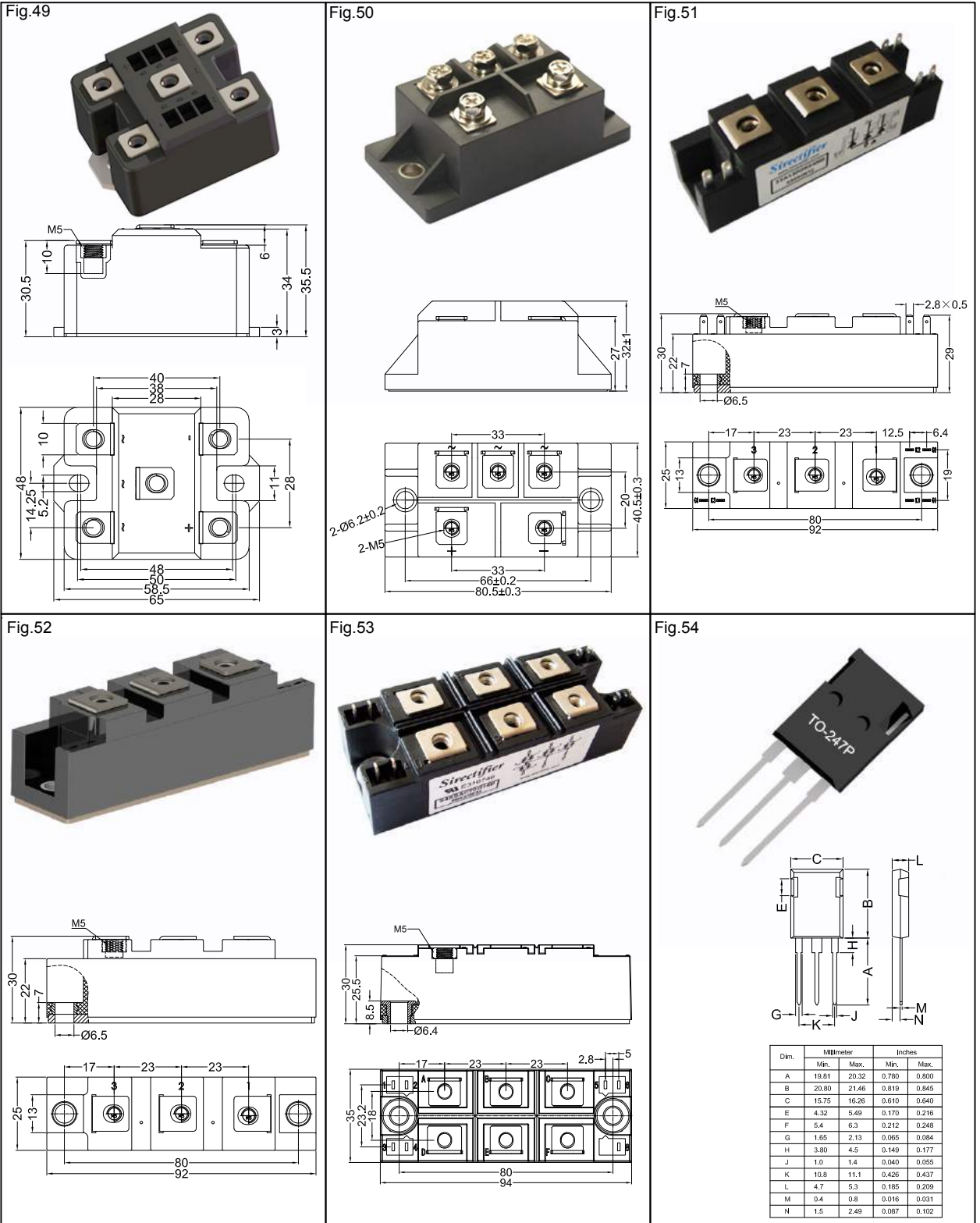
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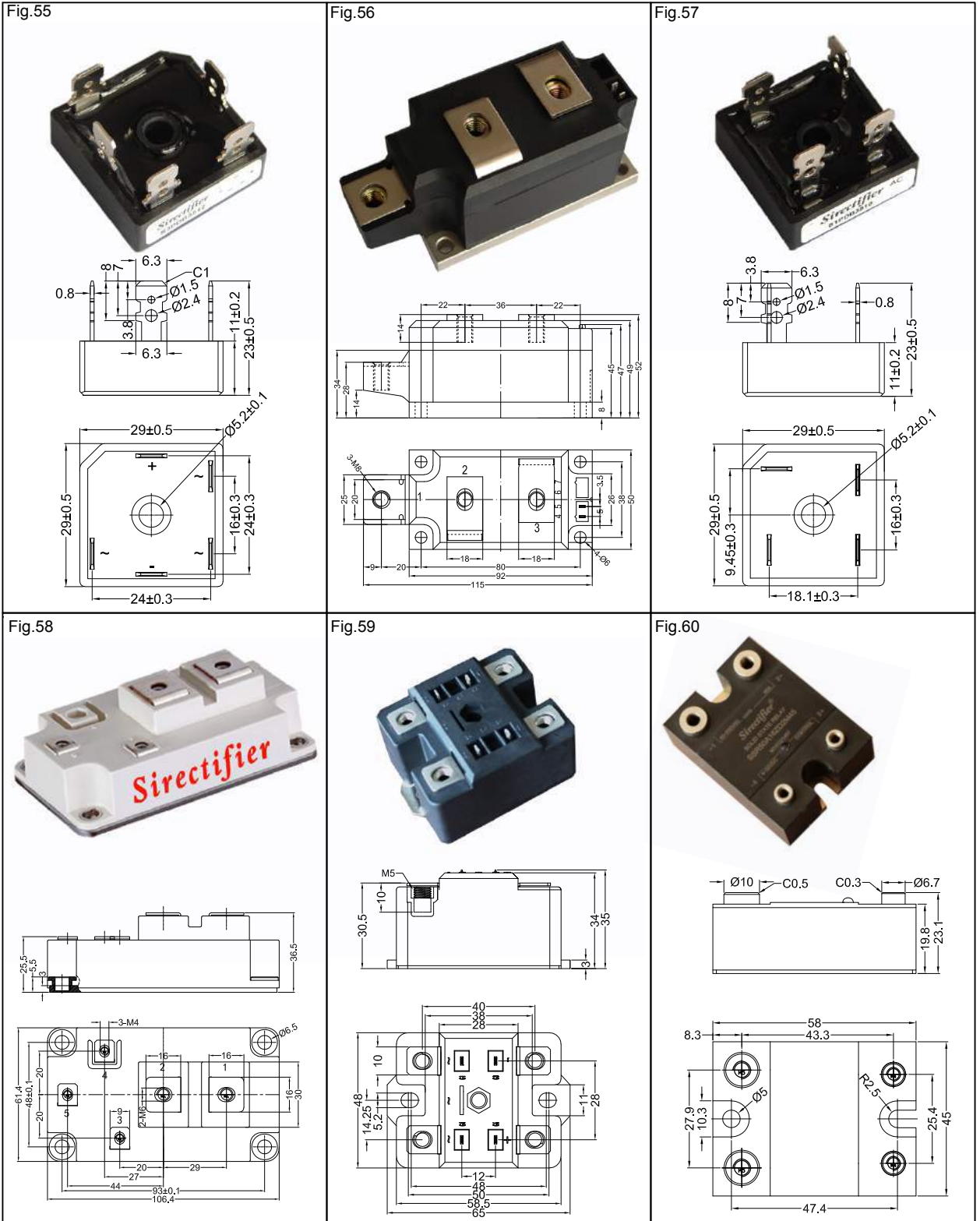
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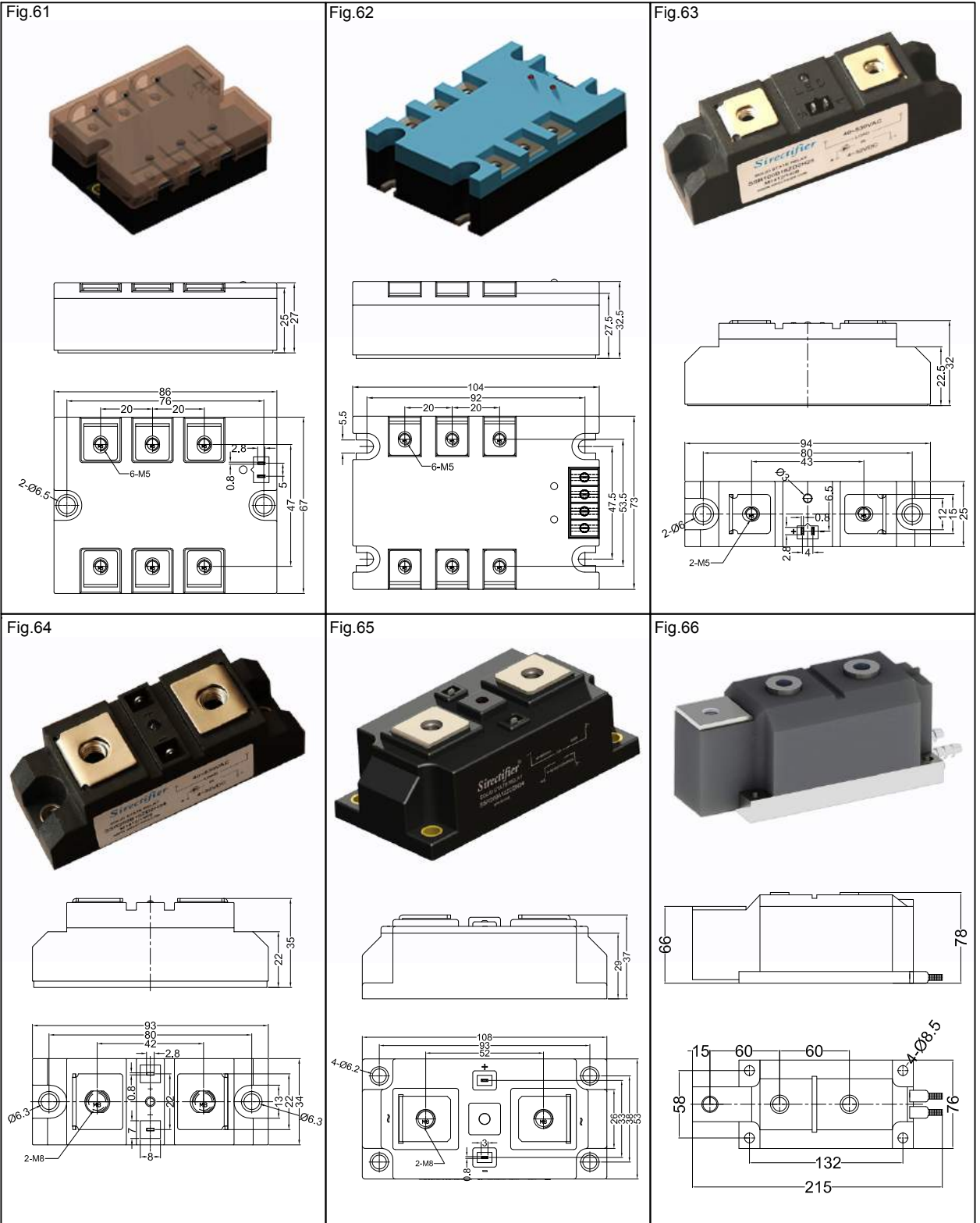
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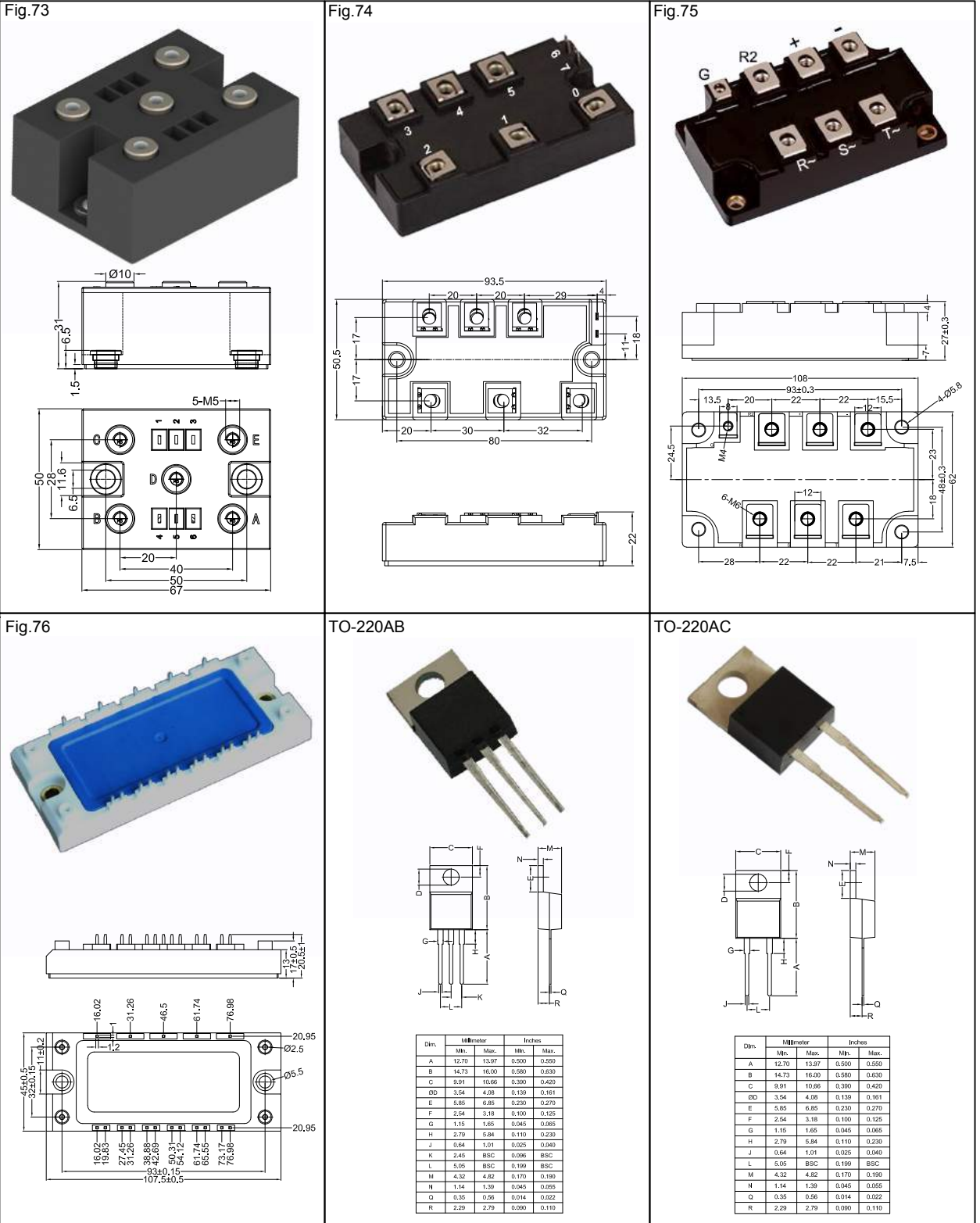
Outline Drawings



Outline Drawings

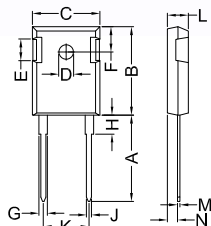
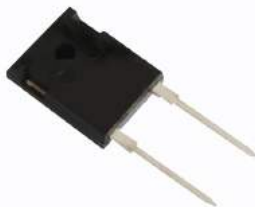


Outline Drawings



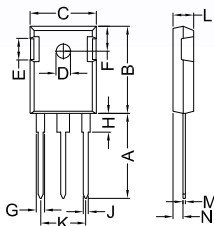
Outline Drawings

TO-247AC



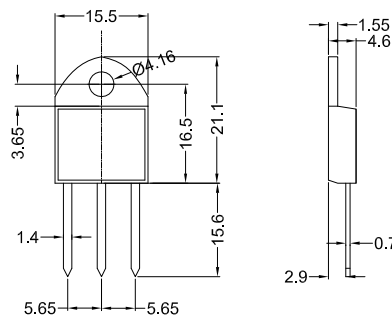
Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.610	0.640
ØD	3.15	3.65	0.124	0.144
E	4.32	5.49	0.170	0.216
F	5.4	6.3	0.212	0.248
G	1.65	2.13	0.065	0.084
H	3.80	4.5	0.149	0.177
J	1.0	1.4	0.040	0.055
K	10.8	11.1	0.426	0.437
L	4.7	5.3	0.185	0.209
M	0.4	0.8	0.016	0.031
N	1.5	2.49	0.087	0.102

TO-247AD

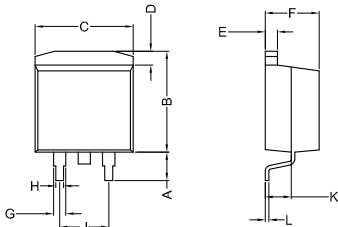


Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.610	0.640
ØD	3.15	3.65	0.124	0.144
E	4.32	5.49	0.170	0.216
F	5.4	6.3	0.212	0.248
G	1.65	2.18	0.065	0.086
H	3.80	4.5	0.149	0.177
J	1.0	1.4	0.040	0.055
K	10.8	11.1	0.426	0.437
L	4.7	5.3	0.185	0.209
M	0.4	0.8	0.016	0.031
N	1.5	2.49	0.087	0.102

TO-218

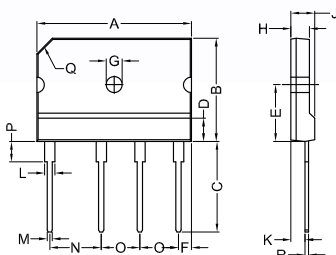


TO-263



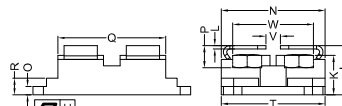
Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	5.00	5.60	0.197	0.220
B	9.32	10.52	0.337	0.414
C	9.60	10.4	0.378	0.409
D	1.20	1.40	0.047	0.055
E	1.30	1.50	0.051	0.059
F	4.32	4.82	0.170	0.190
G	1.15	1.65	0.045	0.065
H	0.64	1.01	0.025	0.040
J	4.50	5.10	0.177	0.200
K	2.30	3.00	0.090	0.118
L	0.30	0.35	0.012	0.014

GBJ



Dim.	Millimeter	
	Min.	Max.
A	20.30	20.30
B	17.0	19.0
D	4.0	4.0
E	5.00	3.00
F	4.00	4.00
G	0.00	0.00
H	0.00	0.00
I	0.00	0.00
J	0.00	0.00
K	0.00	0.00
L	0.00	0.00
M	0.00	0.00
N	0.00	0.00
O	0.00	0.00
P	0.00	0.00
Q	0.00	0.00
R	0.00	0.00

SOT-227



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	11.20	11.60	0.441	0.457
B	7.60	8.20	0.299	0.323
C	4.00	4.20	0.157	0.165
D	4.00	4.20	0.157	0.165
E	4.00	4.20	0.157	0.165
F	14.0	15.1	0.551	0.594
G	16.1	16.5	0.634	0.650
H	16.20	16.50	0.638	0.649
J	12.20	12.40	0.480	0.492
K	6.00	6.00	0.236	0.236
L	0.78	0.84	0.030	0.033
M	12.20	14.20	0.480	0.561
N	25.0	25.0	0.984	0.984
O	1.88	2.13	0.074	0.084
P	4.31	4.62	0.169	0.181
Q	25.0	25.0	0.984	0.984
R	25.0	25.0	0.984	0.984
S	25.0	25.0	0.984	0.984
T	25.0	25.0	0.984	0.984
U	0.55	0.10	0.020	0.004
V	3.20	4.40	0.126	0.173
W	16.0	21.0	0.630	0.826

Диодный мост | Минск | www.tiristor.by | email: minsk17@tut.by | viber и тел.+375447584780 | каталог, описание, технические, характеристики, datasheet, параметры, маркировка, фото, модуль

Bridge Rectifier Module

Features

- Base & chip insulation AC voltage 2500V
- International standard packing
- Excellent temperature feature
- Easy to install
- Popular size
- Low V_{FM}

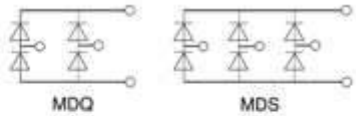
Applications

- Instrument's DC powers supply
- PWM frequency transformet
- Input rectificate power supply
- DC motor field power supply
- Switch power supply input rectificate

Ordering Information Table

Device Code	M	D	S	100	-12	B
	①	②	③	④	⑤	⑥
1	-Power Module					
2	-D=diode modules T=thyristor modules F=diode-thyristor modules H=with free wheel diode modules					
3	-S=three phase Q=single phase					
4	-Current Code= $I_{F(AV)}/I_{T(AV)}$					
5	-Voltage code=Code $\times 100=V_{RRM}$					
6	-None=Fuji type B=Sanrex type C=IR type D=IXYS type					

Part number type & circuit



THREE-PHASE BRIDGE RECTIFIER MODULES (MDS)

Type	$I_d@T_c$		V_{RRM} V	$V_{FM}@I_{FM}$		I_{RRM} mA	$I_{F(AV)}$ A	$I_{F(RMS)}$ A	I_{TSM} $A \times 10^3$	R_{jc} $^{\circ}C/W$	T_{jm} $^{\circ}C$	V_{iso} V(AC)	Outline
	A	$^{\circ}C$		V	A								
MDS60	60	100	600-2000	1.55	60	8	20	39	0.75	0.55	150	2500	M16/
MDS80	80	100	600-2000	1.47	80	8	25	47	1.00	0.32	150	2500	M17/
MDS100	100	100	600-2000	1.53	100	10	33	51	1.50	0.24	150	2500	M18
MDS150	150	100	600-2000	1.50	150	10	50	71	2.50	0.15	150	2500	M19/ M20
MDS200	200	100	600-2000	1.47	200	10	75	105	2.50	0.15	150	2500	
MDS250	250	100	600-2000	1.47	250	10	100	157	2.75	0.14	150	2500	M21
MDS300	300	100	600-2000	1.48	300	9	125	200	2.90	0.14	150	2500	
MDS400	400	100	600-2000	1.45	400	10	150	240	2.95	0.13	150	2500	M22
MDS500	500	100	600-2000	1.49	500	10	200	320	3.15	0.12	150	2500	
MDS600	600	100	600-2000	1.49	600	10	250	400	3.50	0.10	150	2500	

SINGLE-PHASE BRIDGE RECTIFIER MODULES (MDQ)

Type	$I_d@T_c$		V_{RRM} V	$V_{FM}@I_{FM}$		I_{RRM} mA	$I_{F(AV)}$ A	$I_{F(RMS)}$ A	I_{TSM} $A \times 10^3$	R_{jc} $^{\circ}C/W$	T_{jm} $^{\circ}C$	V_{iso} V(AC)	Outline
	A	$^{\circ}C$		V	A								
MDQ60	60	100	600-2000	1.55	60	8	30	60	0.75	0.55	150	2500	M16/
MDQ80	80	100	600-2000	1.47	80	8	40	70	1.00	0.32	150	2500	M17/
MDQ100	100	100	600-2000	1.53	150	10	50	86	1.50	0.24	150	2500	M18
MDQ150	150	100	600-2000	1.47	230	10	75	106	2.00	0.15	150	2500	M19/ M20
MDQ200	200	100	600-2000	1.50	315	10	100	157	2.50	0.15	150	2500	
MDQ250	250	100	600-2000	1.48	380	8	125	200	2.75	0.14	150	2500	M21
MDQ300	300	100	600-2000	1.50	450	10	150	240	2.90	0.13	150	2500	
MDQ400	400	100	600-2000	1.50	500	9	200	320	3.20	0.12	150	2500	M22
MDQ500	500	100	600-2000	1.53	600	10	250	400	3.50	0.10	150	2500	



POWER MODULES



FEATURED PRODUCTS

- Standard Recovery Diode Modules
- Fast Recovery Diode Modules
- Schottky Modules
- Ultrafast Modules
- Thyristor Modules
- Bridge Modules
- MOSFET Modules
- IGBT Modules

RESOURCES

- For technical support, contact Modules@vishay.com
- For further information, visit <http://www.vishay.com> and click on Modules
- Material categorization: For definitions of compliance, please see <http://www.vishay.com/doc?99912>



RoHS
COMPLIANT





POWER MODULES

Standard Diode and Thyristor Modules

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POWER MODULES

Standard Diode and Thyristor Modules

Versatile and high-efficiency power diode and SCR modules from Vishay Intertechnology feature industry-standard outlines with a choice of diode and thyristor rectifiers. Offering single-rectifying/switch component, half-bridge, and center-tapped configurations, these modules are the ideal choice for input rectification applications at either low or high voltages.

Vishay modules fulfill a single or composite function within a single package that offers a thermally conductive, but electrically isolated, path to the outside circuit. This electrical isolation between the baseplate and the active semiconductors provides a key advantage over discrete components. The modules are RoHS-compliant and meet industry standards for safety, including UL approval.

State-of-the-art compression bonding (for current ratings higher than 250 A) and ultrasonic aluminum wire bonding technologies allow the modules to achieve outstanding performance. Vishay's high-power modules are recognized throughout the world for their ruggedness, high reliability, and consistency of mechanical specifications and electrical characteristics.

Features

- Wide range of industry-standard package styles
- Direct mounting on heatsink
- Choice of rectifier and thyristor technologies
- Optimized high-voltage diode and SCR
- Fast recovery diode modules available
- High isolation voltage (2500 V)
- RoHS-compliant
- Low thermal resistance
- Low- / high-temperature performance (-40 °C to +175 °C)
- UL approved

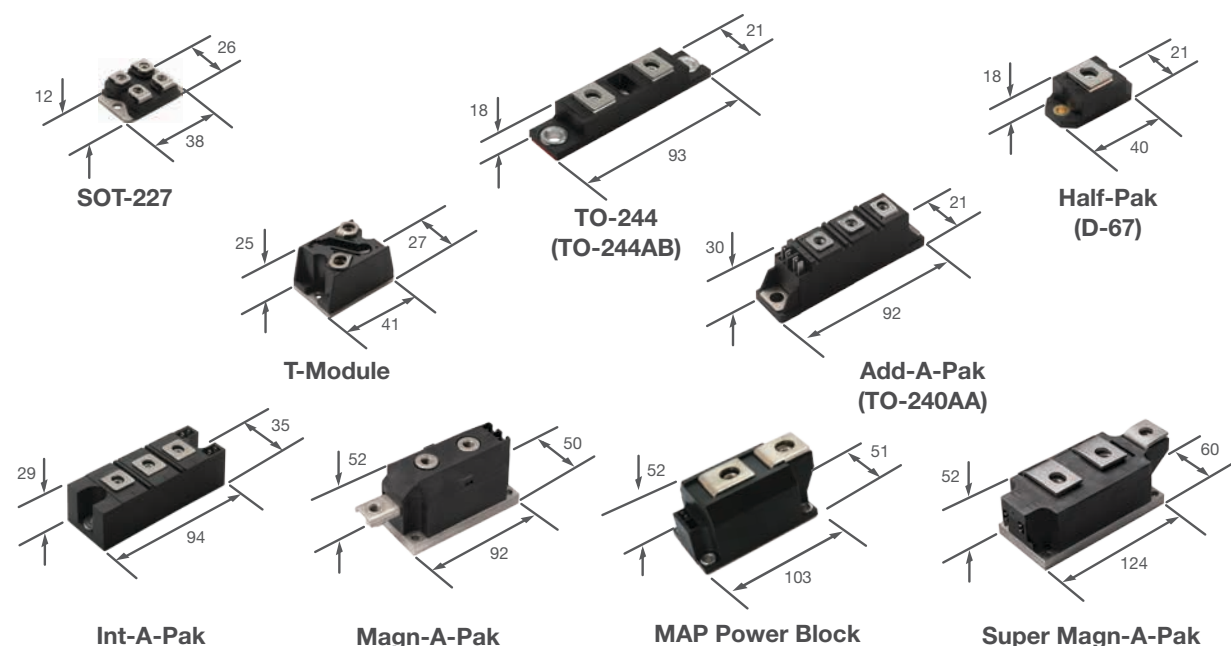
Options

- Customizable for specific application needs
- Gate and auxiliary cathode accessories available upon request

Applications

- Single- and three-phase input rectification
- Industrial welding
- Switch mode power supplies
- Motor drives
- UPS
- Anti-parallel thyristors (AC switches)

Dimensions in Millimeters

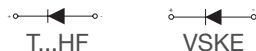




POWER MODULES

Standard Diode and Thyristor Modules

Standard Recovery Diode Modules - Single



	Device ⁽⁶⁾	Package	Pin Out	V_{RRM} Range (V)	$I_{F(AV)}$ at T_C		Max V_F at I_F		I_{FSM} ⁽⁴⁾ (A)
					(A)	(°C)	(V)	(A)	
	VS-T20HF220	T-Module ⁽¹⁾	Screwable	2200	20	72	1.3	60	380
	VS-T40HF10 to VS-T40HF120	T-Module ⁽¹⁾	Screwable	100 to 1200	40	85	1.3	126	570
	VS-T70HF10 to VS-T70HF120	T-Module ⁽¹⁾	Screwable	100 to 1200	70	85	1.35	220	1200
	VS-T85HF10 to VS-T85HF120	T-Module ⁽¹⁾	Screwable	100 to 1200	85	85	1.27	267	1700
	VS-T110HF10 to VS-T110HF120	T-Module ⁽¹⁾	Screwable	100 to 1200	110	85	1.35	345	2000
	VS-VSKE56/04 to VS-VSKE56/16	Add-A-Pak ⁽¹⁾ (TO-240AA)	Screwable	400 to 1600	60	114	1.6	188	1300
	VS-VSKE71/04 to VS-VSKE71/16	Add-A-Pak ⁽¹⁾ (TO-240AA)	Screwable	400 to 1600	80	110	1.6	251	1500
	VS-VSKE91/04 to VS-VSKE91/16	Add-A-Pak ⁽¹⁾ (TO-240AA)	Screwable	400 to 1600	100	112	1.55	314	2000
	VS-VSKE166/04PBF to VS-VSKE166/16PBF	Int-A-Pak ⁽¹⁾	Screwable	400 to 1600	165	100	1.43	518	4000
	VS-VSKE196/04PBF to VS-VSKE196/16PBF	Int-A-Pak ⁽¹⁾	Screwable	400 to 1600	195	100	1.38	612	4750
	VS-VSKE236/04PBF to VS-VSKE236/16PBF	Int-A-Pak ⁽¹⁾	Screwable	400 to 1600	230	100	1.46	722	5500
	VS-VSKE250-04PBF to VS-VSKE250-20PBF	Magn-A-Pak ⁽¹⁾	Screwable	400 to 2000	250	100	1.29	785	7015
	VS-VSKE270-04PBF to VS-VSKE270-20PBF	Magn-A-Pak ⁽¹⁾	Screwable	400 to 2000	270	100	1.48	848	8920
	VS-VSKE320-04PBF to VS-VSKE320-20PBF	Magn-A-Pak ⁽¹⁾	Screwable	400 to 2000	320	100	1.28	1005	10110

Note:

- B. Bold indicates new product
 1. Isolated package
 2. Not isolated package
 3. x = Circuit configuration. Replace "x" with any of the following letters to determine part number for each circuit configuration

D = Two diodes double circuit
 C = Two diodes common cathode
 J = Two diodes common anode
 Some configurations might not be available for some packages. Contact Vishay for more information and feasibilities

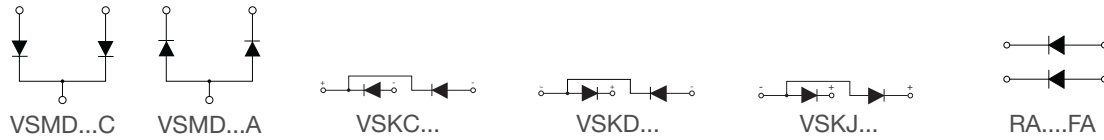
4. $t = 10$ ms, no voltage reapplied, sinusoidal half-wave, initial $T_j = T_j$ max



POWER MODULES

Standard Diode and Thyristor Modules

Standard Recovery Diode Modules - Dual



	Device ⁽³⁾	Package	Pin Out	V_{RRM} Range (V)	$I_{F(AV)}$ at T_C		Max V_F at I_F		$I_{FSM}^{(4)}$ (A)
					(A)	(°C)	(V)	(A)	
	VS-RA160FA120	SOT-227	Screwable	1200	160	101	1.27	100	940
	VS-RA220FA120	SOT-227	Screwable	1200	220	90	1.31	110	1170
	VS-VSKx56/04 to VS-VSKx56/16	Add-A-Pak (TO-240AA) ⁽¹⁾	Screwable	400 to 1600	60	114	1.6	188	1300
	VS-VSKx71/04 to VS-VSKx71/16	Add-A-Pak (TO-240AA) ⁽¹⁾	Screwable	400 to 1600	80	110	1.6	251	1500
	VS-VSKx91/04 to VS-VSKx91/16	Add-A-Pak (TO-240AA) ⁽¹⁾	Screwable	400 to 1600	100	112	1.55	314	2000
	VSMD400AW60	TO-244 (TO-244AB) ⁽²⁾	Screwable	600	200	133	1.31	200	2500
	VSMD400CW60	TO-244 (TO-244AB) ⁽²⁾	Screwable	600	200	133	1.31	200	2500
	VS-VSKx166/04PBF to VS-VSKx166/16PBF	Int-A-Pak ⁽¹⁾	Screwable	400 to 1600	165	100	1.43	518	4000
	VS-VSKx196/04PBF to VS-VSKx196/16PBF	Int-A-Pak ⁽¹⁾	Screwable	400 to 1600	195	100	1.38	612	4750
	VS-VSKx236/04PBF to VS-VSKx236/16PBF	Int-A-Pak ⁽¹⁾	Screwable	400 to 1600	230	100	1.46	722	5500
	VS-VSKx250-04PBF to VS-VSKx250-20PBF	Magn-A-Pak ⁽¹⁾	Screwable	400 to 2000	250	100	1.29	785	7015
	VS-VSKx270-04PBF to VS-VSKx270-30PBF	Magn-A-Pak ⁽¹⁾	Screwable	400 to 3000	270	100	1.48	848	8920
	VS-VSKx320-04PBF to VS-VSKx320-20PBF	Magn-A-Pak ⁽¹⁾	Screwable	400 to 2000	320	100	1.28	1005	10 110
	VS-VSKD600-04PBF to VS-VSKD600-20PBF	Super Magn-A-Pak ⁽¹⁾	Screwable	400 to 2000	600	100	1.45	1800	19 000

Note:

- B. Bold indicates new product
 1. Isolated package
 2. Not isolated package
 3. x = Circuit configuration. Replace "x" with any of the following letters to determine part number for each circuit configuration

D = Two diodes double circuit
 C = Two diodes common cathode
 J = Two diodes common anode
 Some configurations might not be available for some packages. Contact Vishay for more information and feasibilities

4. $t = 10$ ms, no voltage reapplied, sinusoidal half-wave, initial $T_j = T_j \text{ max}$



POWER MODULES

Standard Diode and Thyristor Modules

Fast Recovery Diode Modules



	Device ^(B)	Package	Type	Pin Out	V _{RRM} Range (V)	I _{F(AV)} at T _C		Max V _F at I _F		Typ. t _{rr} at 25 °C		Typ. Q _{rr} at 125 °C
						(A)	(°C)	(V)	(A)	(ns)	setup (I _F , di _F / dt, V _R)	(nC)
	VS-T40HFL20S02 to VS-T40HFL60S02	T-Module ⁽¹⁾	Fast Soft Recovery	Screwable	200 to 600	40	70	1.60	126	200	126 A, 25 A/μs, 30 V	550
	VS-T40HFL20S05 to VS-T40HFL100S05	T-Module ⁽¹⁾	Fast Soft Recovery	Screwable	200 to 1000	40	70	1.60	126	500	126 A, 25 A/μs, 30 V	2000
	VS-T70HFL20S02 to VS-T70HFL60S02	T-Module ⁽¹⁾	Fast Soft Recovery	Screwable	200 to 600	70	70	1.73	220	200	220 A, 25 A/μs, 30 V	600
	VS-T70HFL10S05 to VS-T70HFL100S05	T-Module ⁽¹⁾	Fast Soft Recovery	Screwable	100 to 1000	70	70	1.73	220	500	220 A, 25 A/μs, 30 V	2100
	VS-T85HFL10S02 to VS-T85HFL60S02	T-Module ⁽¹⁾	Fast Soft Recovery	Screwable	200 to 600	85	70	1.55	267	200	267 A, 25 A/μs, 30 V	800
	VS-T85HFL20S05 to VS-T85HFL100S05	T-Module ⁽¹⁾	Fast Soft Recovery	Screwable	200 to 1000	85	70	1.55	267	500	267 A, 25 A/μs, 30 V	3500



POWER MODULES

Schottky Diode Modules



QA...FA

Schottky TMBS® Diode Modules - Dual (Isolated)

	Device ^(B)	Package	Type	Pin Out	V _{RRM} (V)	I _{F(AV)} at T _C ⁽³⁾		Max. V _F at I _F ⁽⁴⁾		I _{FSM} ⁽⁵⁾ (A)
						(A)	(°C)	(V)	(A)	
	VS-QA250FA20	SOT-227	Two Separated Diodes, Parallel Pin Out	Screwable	200	250	106	1.2	200	900
	VS-QA300FA17	SOT-227	Two Separated Diodes, Parallel Pin Out	Screwable	170	300	132	0.98	200	1575

Schottky Diode Modules - Single (Not Isolated)



...NQ

	Device ^(B)	Package	Type	Pin Out	V _{RRM} (V)	I _{F(AV)} at T _C ⁽³⁾		Max. V _F at I _F ⁽⁴⁾		I _{FSM} ⁽⁵⁾ (A)
						(A)	(°C)	(V)	(A)	
	VS-125NQ015PBF	Half-Pak (D-67) ⁽²⁾	Single Diode (Cathode to Base)	Screwable	15	120	74	0.43	120	1700
	VS-122NQ030PBF	Half-Pak (D-67) ⁽²⁾	Single Diode (Cathode to Base)	Screwable	30	120	115	0.57	120	2000
	VS-120NQ045PBF	Half-Pak (D-67) ⁽²⁾	Single Diode (Cathode to Base)	Screwable	45	120	105	0.63	120	1550
	VS-121NQ045PBF	Half-Pak (D-67) ⁽²⁾	Single Diode (Cathode to Base)	Screwable	45	120	137	0.65	120	2000
	VS-123NQ100PBF	Half-Pak (D-67) ⁽²⁾	Single Diode (Cathode to Base)	Screwable	100	120	133	0.91	120	1800
	VS-182NQ030PBF	Half-Pak (D-67) ⁽²⁾	Single Diode (Cathode to Base)	Screwable	30	180	108	0.59	180	2500
	VS-180NQ045PBF	Half-Pak (D-67) ⁽²⁾	Single Diode (Cathode to Base)	Screwable	45	180	105	0.60	180	2400
	VS-183NQ100PBF	Half-Pak (D-67) ⁽²⁾	Single Diode (Cathode to Base)	Screwable	100	240	128	0.91	180	2500
	VS-245NQ015PBF	Half-Pak (D-67) ⁽²⁾	Single Diode (Cathode to Base)	Screwable	15	240	73	0.52	240	3000
	VS-242NQ030PBF	Half-Pak (D-67) ⁽²⁾	Single Diode (Cathode to Base)	Screwable	30	240	118	0.54	240	3000
	VS-240NQ045PBF	Half-Pak (D-67) ⁽²⁾	Single Diode (Cathode to Base)	Screwable	45	240	104	0.72	240	3400
	VS-241NQ045PBF	Half-Pak (D-67) ⁽²⁾	Single Diode (Cathode to Base)	Screwable	45	240	144	0.8	240	3450
	VS-243NQ100PBF	Half-Pak (D-67) ⁽²⁾	Single Diode (Cathode to Base)	Screwable	100	240	132	0.95	240	3300
	VS-249NQ150PBF	Half-Pak (D-67) ⁽²⁾	Single Diode (Cathode to Base)	Screwable	150	240	121	1.21	240	2300

Note:

B. Bold indicates new product

1. Isolated package

2. Not isolated package

3. Per module

4. T_J = 25 °C

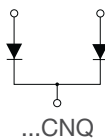
5. 10 ms sine pulse, no voltage reapplied



POWER MODULES

Schottky Diode Modules

Schottky Diode Modules - Dual (Not Isolated)



Device ^(B)	Package	Type	Pin Out	V _{RRM} (V)	I _{F(AV)} at T _c ⁽³⁾		Max. V _F at I _F ⁽⁴⁾		I _{FSM} ⁽⁵⁾ (A)
					(A)	(°C)	(V)	(A)	
VS-220CNQ030PBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	30	220	122	0.59	220	1950
VS-200CNQ045PBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	45	200	116	0.73	200	1550
VS-201CNQ045PBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	45	200	146	0.81	200	2000
VS-203CNQ100PBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	100	200	142	1.03	200	1700
VS-209CNQ135PBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	135	200	131	1.33	200	1200
VS-209CNQ150PBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	150	200	131	1.33	200	1200
VS-300CNQ045PBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	45	300	111	0.77	300	2400
VS-301CNQ040PBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	40	300	132	0.9	300	3200
VS-301CNQ045PBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	45	300	132	0.9	300	3200
VS-303CNQ100PBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	100	300	138	1.09	300	2500
VS-401CNQ040PBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	40	400	114	0.73	400	3400
VS-400CNQ045PBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	45	400	114	0.73	400	3400
VS-401CNQ045PBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	45	400	147	0.78	400	3450
VS-403CNQ100PBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	100	400	141	1.07	400	3300
VS-409CNQ135PBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	135	400	129	1.46	400	2300

Note:

B. Bold indicates new product

1. Isolated package

2. Not isolated package

3. Per module

4. T_j = 25 °C


5. 10 ms sine pulse, no voltage reapplied



POWER MODULES

Schottky Diode Modules

Schottky Diode Modules - Dual (Not Isolated), continued

	Device ^(B)	Package	Type	Pin Out	V _{RRM} (V)	I _{F(AV)} at T _c ⁽³⁾		Max. V _F at I _F ⁽⁴⁾		I _{FSM} ⁽⁵⁾ (A)
						(A)	(°C)	(V)	(A)	
	VS-409CNQ150PBF	T0-244 (T0-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	150	400	129	1.46	400	2300
	VS-440CNQ030PBF	T0-244 (T0-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	30	440	125	0.63	440	3000

Note:

B. Bold indicates new product
 1. Isolated package
 2. Not isolated package

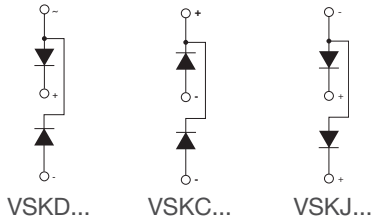
3. Per module
 4. T_j = 25 °C
 5. 10 ms sine pulse, no voltage reapplied



POWER MODULES

Schottky Diode Modules

Schottky Diode Modules - Dual (Isolated)



Device ^(B)	Package	Type	Pin Out	V_{RRM} (V)	$I_{F(AV)}$ at $T_c^{(3)}$		Max. V_F at $I_F^{(4)}$		$I_{FSM}^{(5)}$ (A)
					(A)	(°C)	(V)	(A)	
VS-VSKDS201/045	Add-A-Pak (TO-240AA) ⁽¹⁾	Two Diodes Doubler Circuit	Screwable	45	200	123	1.04	200	1850
VS-VSKCS201/045	Add-A-Pak (TO-240AA) ⁽¹⁾	Dual Diode (Common Cathode)	Screwable	45	200	123	1.04	200	1850
VS-VSKDS203/100	Add-A-Pak (TO-240AA) ⁽¹⁾	Two Diodes Doubler Circuit	Screwable	100	200	121	1.34	200	1700
VS-VSKCS203/100	Add-A-Pak (TO-240AA) ⁽¹⁾	Dual Diode (Common Cathode)	Screwable	100	200	121	1.34	200	1700
VS-VSKJS203/100	Add-A-Pak (TO-240AA) ⁽¹⁾	Dual Diode (Common Anode)	Screwable	100	200	121	1.34	200	1700
VS-VSKDS209/150	Add-A-Pak (TO-240AA) ⁽¹⁾	Two Diodes Doubler Circuit	Screwable	150	200	113	1.35	200	1600
VS-VSKCS209/150	Add-A-Pak (TO-240AA) ⁽¹⁾	Dual Diode (Common Cathode)	Screwable	150	200	113	1.35	200	1600
VS-VSKJS209/150	Add-A-Pak (TO-240AA) ⁽¹⁾	Dual Diode (Common Anode)	Screwable	150	200	113	1.35	200	1600
VS-VSKDS220/030	Add-A-Pak (TO-240AA) ⁽¹⁾	Two Diodes Doubler Circuit	Screwable	30	220	110	0.78	220	2000
VS-VSKCS220/030	Add-A-Pak (TO-240AA) ⁽¹⁾	Dual Diode (Common Cathode)	Screwable	30	220	110	0.78	220	2000
VS-VSKDS400/045	Add-A-Pak (TO-240AA) ⁽¹⁾	Two Diodes Doubler Circuit	Screwable	45	400	91	0.92	400	3400
VS-VSKCS400/045	Add-A-Pak (TO-240AA) ⁽¹⁾	Dual Diode (Common Cathode)	Screwable	45	400	91	0.92	400	3400
VS-VSKDS401/045	Add-A-Pak (TO-240AA) ⁽¹⁾	Two Diodes Doubler Circuit	Screwable	45	400	120	0.98	400	3450
VS-VSKCS401/045	Add-A-Pak (TO-240AA) ⁽¹⁾	Dual Diode (Common Cathode)	Screwable	45	400	120	0.98	400	3450

Note:
 B. Bold indicates new product
 1. Isolated package
 2. Not isolated package


3. Per module
 4. $T_j = 25\text{ }^\circ\text{C}$
 5. 10 ms sine pulse, no voltage reapplied



POWER MODULES

Schottky Diode Modules

Schottky Diode Modules - Dual (Isolated), continued

	Device ^(B)	Package	Type	Pin Out	V _{RRM} (V)	I _{F(AV)} at T _C ⁽³⁾		Max. V _F at I _F ⁽⁴⁾		I _{FSM} ⁽⁵⁾
						(A)	(°C)	(V)	(A)	(A)
	VS-VSKDS408/060	Add-A-Pak (TO-240AA) ⁽¹⁾	Two Diodes Doubler Circuit	Screwable	60	400	102	1.09	400	3300
	VS-VSKCS408/060	Add-A-Pak (TO-240AA) ⁽¹⁾	Dual Diode (Common Cathode)	Screwable	60	400	102	1.09	400	3300
	VS-VSKDS403/100	Add-A-Pak (TO-240AA) ⁽¹⁾	Two Diodes Doubler Circuit	Screwable	100	400	111	1.3	400	3300
	VS-VSKCS403/100	Add-A-Pak (TO-240AA) ⁽¹⁾	Dual Diode (Common Cathode)	Screwable	100	400	111	1.30	400	3300
	VS-VSKDS409/150	Add-A-Pak (TO-240AA) ⁽¹⁾	Two Diodes Doubler Circuit	Screwable	150	400	105	1.33	400	2300
	VS-VSKCS440/030	Add-A-Pak (TO-240AA) ⁽¹⁾	Dual Diode (Common Cathode)	Screwable	30	440	97	1.00	440	3000
	VS-VSKJS440/030	Add-A-Pak (TO-240AA) ⁽¹⁾	Dual Diode (Common Anode)	Screwable	30	440	97	1.00	440	3000

Note:

B. Bold indicates new product

1. Isolated package

2. Not isolated package

3. Per module

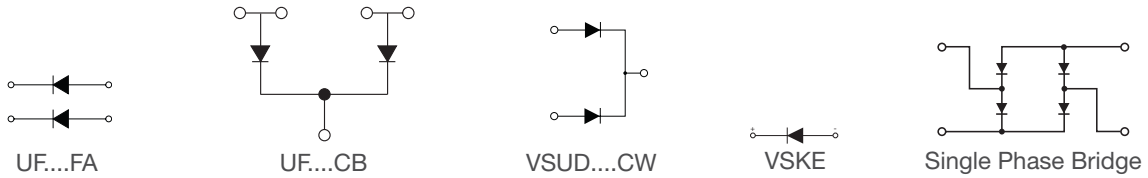
4. T_J = 25 °C

5. 10 ms sine pulse, no voltage reapplied



POWER MODULES

Ultrafast Recovery Diode Modules



Ultrafast Diode Modules - FRED Pt®

Device ^(B)	Package	Type	Pin Out	V _{RRM} (V)	I _{F(AV)} at T _c ⁽³⁾		Max. V _F at I _F ⁽⁴⁾		Typ. t _{rr} at 25 °C (ns)	Typ. Q _{rr} at 125 °C	
					(A)	(°C)	(V)	(A)		setup (I _F , di _F / dt, V _R)	(nC)
VS-UFH60BA65	SOT-227 ⁽¹⁾	Single-phase Bridge	Screwable	650	60 (Bridge I _o)	123	2.35	60	63	50A, 200A/us, 200V	765
VS-UFH280FA30	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	300	280	81	1.27	100	58	50A, 200A/us, 200V	429
VS-UFB80FA20	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	200	80	129	1.08	30	34	30 A, 200 A/μs, 100 V	184
VS-UFB80FA40	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	400	80	121	1.39	30	68	30 A, 200 A/μs, 200 V	900
VS-UFB80FA60	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	600	80	104	1.69	30	79	30 A, 200 A/μs, 200 V	1085
VS-UFL80FA60	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	600	80	115	1.43	30	115	30 A, 200 A/μs, 200 V	1900
VS-UFB130FA20	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	200	130	126	1.13	60	42	50 A, 200 A/μs, 100 V	295
VS-UFB130FA40	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	400	130	114	1.37	60	86	50 A, 200 A/μs, 200 V	1400
VS-UFB130FA60	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	600	130	92	1.80	60	79	50 A, 200 A/μs, 200 V	1220
VS-UFL130FA60	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	600	130	98	1.60	60	105	50 A, 200 A/μs, 200 V	1850
VS-UFB170FA60	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	600	170	76	1.43	100	220	50 A, 500 A/us, 200 V	9100
VS-UFB201FA40	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	400	200	86	1.28	100	80	50 A, 200 A/μs, 200 V	1300

Note:

B. Bold indicates new product
1. Isolated package2. Not isolated package
3. Per module4. T_j = 25 °C
5. Very low thermal resistance



POWER MODULES

Ultrafast Recovery Diode Modules

Ultrafast Diode Modules - FRED Pt[®], continued

Device ^(B)	Package	Type	Pin Out	V _{RRM} (V)	I _{F(AV)} at T _C ⁽³⁾		Max. V _F at I _F ⁽⁴⁾		Typ. t _{rr} at 25 °C (ns)	Typ. Q _{rr} at 125 °C (nC)	
					(A)	(°C)	(V)	(A)			
VS-UFB280FA20	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	200	280	100	1.10	120	34	150 A, 200 A/μs, 160 V	300
VS-UFB280FA40	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	400	280	90	1.24	100	93	150 A, 200 A/μs, 200 V	1740
VS-UFB211FA40	SOT-227	Two Separat ^e d Diodes, Parallel Pin Out	Screwable	400	210	133	1.24	100	93	150 A, 200 A/μs, 200 V	1740
VS-UFB230FA60	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	600	230	88	1.78	100	83	50 A, 200 A/μs, 200 V	1595
VS-UFL230FA60	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	600	230	102	1.44	100	104	50 A, 200 A/μs, 200 V	2200
VS-UFB250FA60	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	600	250	113	1.19	100	166	50 A, 500 A/μs, 200 V	10 000 (150 °C)
VS-UFB310CB40	SOT-227 ⁽²⁾	Not isolated: two separated diodes , common cathode	Screwable	400	310	119	1.34	100	89	50 A, 200 A/us, 200 V	1840
VS-UFL250CB60	SOT-227 ⁽²⁾	Not isolated: two separated diodes, common cathode	Screwable	600	250	119	1.44	100	104	50 A, 200 A/us, 200 V	2200
VS-VSUD360CW40	T0-244 (T0-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	400	360	116	1.50	360	74	180 A, 200 A/μs, 200 V	1295 (150 °C)
VS-VSUD400CW60	T0-244 (T0-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	600	400	97	2.30	400	90	200 A, 200 A/μs, 200 V	4730
VS-VSUD405CW60	T0-244 (T0-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	600	400	132	1.72	400	124	50 A, 500 A/μs, 200 V	5000
VS-VSUD410CW60	T0-244 (T0-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	600	400	85	1.37	400	215	50 A, 500 A/μs, 200 V	15100
VS-VSKEF500/06PBF	Int-A-Pak ⁽¹⁾	Single Diode	Screwable	600	519	90	1.66	500	104	50 A, 500 A/μs, 200 V	13800

Note:

B. Bold indicates new product

1. Isolated package

2. Not isolated package

3. Per module

4. T_J = 25 °C

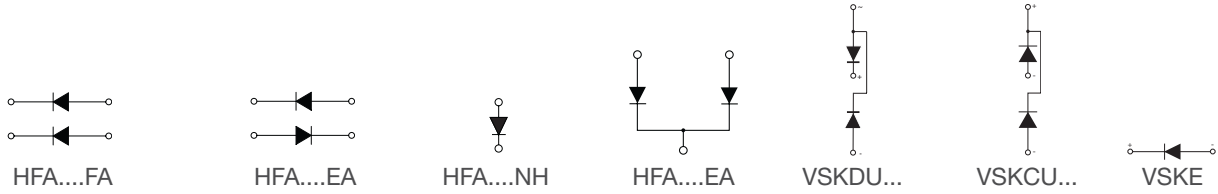
5. Very low thermal resistance



POWER MODULES

Ultrafast Recovery Diode Modules

Ultrafast Diode Modules - HEXFRED®



Device ^(B)	Package	Type	Pin Out	V _{RRM} (V)	I _{F(AV)} at T _C ⁽³⁾		Max. V _F at I _F ⁽⁴⁾		Typ. t _{rr} at 25 °C (ns)	Typ. Q _{rr} at 125 °C	
					(A)	(°C)	(V)	(A)		setup (I _F , di _F / dt, V _R)	(nC)
VS-HFA70FA120	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	1200	70	94	3.80	60	134	50 A, 200 A/μs, 200 V	1770
VS-HFA70EA120	SOT-227 ⁽¹⁾	Two Separated Diodes, Anti-Parallel Pin Out	Screwable	1200	70	121	4.00	60	145	50 A, 200 A/μs, 200 V	1920
VS-HFA90FA120	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	1200	90	63	3.30	40	80	50 A, 200 A/μs, 200 V	740
VS-HFA140FA60	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	600	140	110	2.04	120	90	50 A, 200 A/μs, 200 V	1180
VS-HFA140FA120	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	1200	140	74	5.03	120	145	50 A, 200 A/μs, 200 V	1920
VS-HFA220FA120	SOT-227 ⁽¹⁾	Two Separated Diodes, Parallel Pin Out	Screwable	1200	220	68	4.70	200	157	50 A, 200 A/μs, 200 V	2850
VS-HFA90NH40PBF	Half-Pak (D-67) ⁽²⁾	Single Diode (Cathode to Base)	Screwable	400	106	100	1.45	90	90	90 A, 200 A/μs, 200 V	1200
VS-HFA135NH40PBF	Half-Pak (D-67) ⁽²⁾	Single Diode (Cathode to Base)	Screwable	400	138	100	1.65	135	77	135 A, 200 A/μs, 200 V	2800
VS-HFA180NH40PBF	Half-Pak (D-67) ⁽²⁾	Single Diode (Cathode to Base)	Screwable	400	200	100	1.46	180	90	135 A, 200 A/μs, 200 V	2650
VS-HFA140NJ60CPBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	600	168	100	2.10	140	80	70 A, 200 A/μs, 200 V	980
VS-HFA210NJ60CPBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	600	240	100	2.25	210	90	105 A, 200 A/μs, 200 V	1200
VS-HFA240NJ40CPBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	400	394	100	1.50	240	77	140 A, 200 A/μs, 200 V	2300
VS-HFA280NJ60CPBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	600	298	100	2.10	210	92	105 A, 200 A/μs, 200 V	1400

Note:

B. Bold indicates new product
 1. Isolated package
 2. Not isolated package



3. Per module
 4. T_i = 25 °C
 5. Very low thermal resistance



POWER MODULES

Ultrafast Recovery Diode Modules

Ultrafast Diode Modules - HEXFRED[®], continued

	Device ^(B)	Package	Type	Pin Out	V _{RRM} (V)	I _{F(AV)} at T _c ⁽³⁾		Max. V _F at I _F ⁽⁴⁾		Typ. t _{rr} at 25 °C		Typ. Q _{rr} at 125 °C
						(A)	(°C)	(V)	(A)	(ns)	setup (I _F , di _F / dt, V _R)	(nC)
	VS-HFA320NJ40CPBF	TO-244 (TO-244AB) ⁽²⁾	Dual Diode (Common Cathode)	Screwable	400	320	115	1.54	320	90	160 A, 200 A/μs, 200 V	2600
	VS-VSKDU162/12PBF	Int-A-Pak ⁽¹⁾	Two Diodes Doubler Circuit	Screwable	1200	110	100	3.90	160	150	160 A, 200A/μs, 200 V	2000 (25°C)
	VS-VSKCU300/06PBF	Int-A-Pak ⁽¹⁾	Two Diodes Common Cathode	Screwable	600	230	100	1.96	300	130	50 A, 200 A/μs, 400 V	1800
	VS-VSKDU300/06PBF	Int-A-Pak ⁽¹⁾	Two Diodes Doubler Circuit	Screwable	600	230	100	1.96	300	130	50 A, 200 A/μs, 400 V	1800
	VS-VSKEU300/12PBF	Int-A-Pak ⁽¹⁾	Single Diode	Screwable	1200	300	60	2.23	300	233	50 A, 500 A/μs, 200 V	10400

Note:

- B. Bold indicates new product
 1. Isolated package
 2. Not isolated package

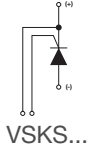
3. Per module
 4. T_J = 25 °C
 5. Very low thermal resistance



POWER MODULES

Thyristor Modules

Thyristor Modules - Single



	Device ^(B)	Package	Type	Pin Out	V _{RRM} (V)	I _{F(AV)} at T _C		Max. V _F at I _F ⁽³⁾		I _{FSM} ⁽⁴⁾ (A)
						(A)	(°C)	(V)	(A)	
	VS-VSKS500/08PbF	MAP Power Block ⁽¹⁾	Single Thyristor	Screwable	800	500	76	1.1	500	16 646

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маркировка, габариты, фото, модуль

Note:

B. Bold indicates new product

1. Isolated package

2. Not isolated package

3. T_j = 25 °C

4. t = 10 mS, no voltage reapplied, sinusoidal half-wave, initial T_j = T_j max

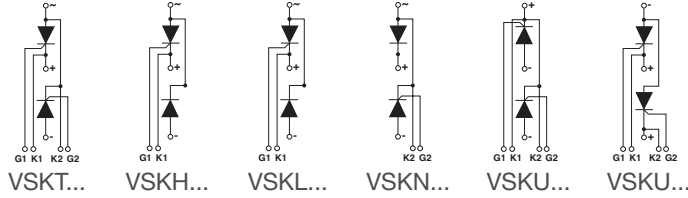
5. Under development



POWER MODULES

Thyristor Modules

Thyristor Modules - Dual



Device ^{(B)(3)}	Package	Type	Pin Out	V _{RRM} (V)	I _{F(AV)} at T _C		Max. V _F at I _F ⁽⁴⁾		I _{FSM} ⁽⁵⁾ (A)
					(A)	(°C)	(V)	(A)	
VS-VSKx26/04 to VS-VSKx26/16	Add-A-Pak (TO-240AA) ⁽¹⁾	Thyristor/Diode and Thyristor/Thyristor Half-Bridge	Screwable	400 to 1600	27	85	1.65	85	400
VS-VSKx41/04 to VS-VSKx41/16	Add-A-Pak (TO-240AA) ⁽¹⁾	Thyristor/Diode and Thyristor/Thyristor Half-Bridge	Screwable	400 to 1600	45	85	1.81	141	850
VS-VSKx41/04 to VS-VSKx41/16	Add-A-Pak (TO-240AA) ⁽¹⁾	Common Anode (Cathode)	Screwable	400 to 1600	45	85	1.81	141	850
VS-VSKx56/04 to VS-VSKx56/16	Add-A-Pak (TO-240AA) ⁽¹⁾	Thyristor/Diode and Thyristor/Thyristor Half-Bridge	Screwable	400 to 1600	60	85	1.70	188	1200
VS-VSKx56/04 to VS-VSKx56/16	Add-A-Pak (TO-240AA) ⁽¹⁾	Common Anode (Cathode)	Screwable	400 to 1600	60	85	1.70	188	1200
VS-VSKx71/04 to VS-VSKx71/16	Add-A-Pak (TO-240AA) ⁽¹⁾	Thyristor/Diode and Thyristor/Thyristor Half-Bridge	Screwable	400 to 1600	75	85	1.72	236	1300
VS-VSKx71/04 to VS-VSKx71/16	Add-A-Pak (TO-240AA) ⁽¹⁾	Common Anode (Cathode)	Screwable	400 to 1600	75	85	1.72	236	1300
VS-VSKx91/04 to VS-VSKx91/16	Add-A-Pak (TO-240AA) ⁽¹⁾	Thyristor/Diode and Thyristor/Thyristor Half-Bridge	Screwable	400 to 1600	95	85	1.73	298	2000
VS-VSKx91/04 to VS-VSKx91/16	Add-A-Pak (TO-240AA) ⁽¹⁾	Common Anode (Cathode)	Screwable	400 to 1600	95	85	1.73	298	2000

Note:

B. Bold indicates new product

1. Isolated package

2. Not isolated package

3. x = circuit configuration. Replace "x" with any of the following letters to determine part number for each circuit configuration.

- Thyristor/diode and thyristor/thyristor half-bridge configurations: T = half-bridge fully controlled; h = half-bridge positive controlled; L = half-bridge negative controlled; n = half-bridge, half-controlled common anode

- common anode or common cathode configuration: U = Dual ScR common cathode; V = Dual ScR common anode

Some configurations might not be available for some packages. Contact Vishay for more information and feasibilities.

4. T_j = 25 °C

5. t = 10 mS, no voltage reapplied, sinusoidal half-wave, initial T_j = T_j max



POWER MODULES

Thyristor Modules

Thyristor Modules - Dual, continued

	Device ^{(B)(3)}	Package	Type	Pin Out	V _{RRM} (V)	I _{F(AV)} at T _c		Max. V _F at I _F ⁽⁴⁾		I _{FSM} ⁽⁵⁾ (A)
						(A)	(°C)	(V)	(A)	
	VS-VSKx105/04 to VS-VSKx105/16	Add-A-Pak (TO-240AA) ⁽¹⁾	Thyristor/Diode and Thyristor/Thyristor Half-Bridge	Screwable	400 to 1600	105	85	1.80	330	2000
	VS-VSKx105/04 to VS-VSKx105/16	Add-A-Pak (TO-240AA) ⁽¹⁾	Common Anode (Cathode)	Screwable	400 to 1600	105	85	1.80	330	2000
	VS-VSKx136/04PBF to VS-VSKx136/16PBF	Int-A-Pak ⁽¹⁾	Thyristor/Diode and Thyristor/Thyristor Half-Bridge	Screwable	400 to 1600	135	85	1.57	424	3200
	VS-VSKx142/04PBF to VS-VSKx142/16PBF	Int-A-Pak ⁽¹⁾	Thyristor/Diode and Thyristor/Thyristor Half-Bridge	Screwable	400 to 1600	140	85	1.55	440	4500
	VS-VSKx162/04PBF to VS-VSKx162/16PBF	Int-A-Pak ⁽¹⁾	Thyristor/Diode and Thyristor/Thyristor Half-Bridge	Screwable	400 to 1600	160	85	1.54	502	4870
	VS-VSKx170-04PBF to VS-VSKx170-16PBF	Magn-A-Pak ⁽¹⁾	Thyristor/Diode and Thyristor/Thyristor Half-Bridge	Screwable	400 to 1600	170	85	1.60	534	5100
	VS-VSKx230-04PBF to VS-VSKx230-20PBF	Magn-A-Pak ⁽¹⁾	Thyristor/Diode and Thyristor/Thyristor Half-Bridge	Screwable	400 to 2000	230	85	1.59	722	7500
	VS-VSKV230-08PBF	Magn-A-Pak ⁽¹⁾	Common Anode	Screwable	800	230	85	1.59	722	7500
	VS-VSKx250-04PBF to VS-VSKx250-20PBF	Magn-A-Pak ⁽¹⁾	Thyristor/Diode and Thyristor/Thyristor Half-Bridge	Screwable	400 to 2000	250	85	1.44	785	8500
	VS-VSKT320-08PBF to VS-VSKT320-16PBF	Magn-A-Pak ⁽¹⁾	Thyristor/Thyristor Half-Bridge	Screwable	800 to 1600	320	70	1.37	1005	9000

Note:

B. Bold indicates new product

1. Isolated package

2. Not isolated package

3. x = circuit configuration. Replace "x" with any of the following letters to determine part number for each circuit configuration.

– Thyristor/diode and thyristor/thyristor half-bridge configurations: T = half-bridge fully controlled; h = half-bridge positive controlled; L = half-bridge negative controlled; n = half-bridge, half-controlled common anode

– common anode or common cathode configuration: U = Dual ScR common cathode; V = Dual ScR common anode

Some configurations might not be available for some packages. Contact Vishay for more information and feasibilities.

4. T_j = 25 °C


5. t = 10 mS, no voltage reapplied, sinusoidal half-wave, initial T_j = T_j max



POWER MODULES

Thyristor Modules

Thyristor Modules - Dual, continued

	Device ^{(B)(3)}	Package	Type	Pin Out	V _{RRM} (V)	I _{F(AV)} at T _c		Max. V _F at I _F ⁽⁴⁾		I _{FSM} ⁽⁵⁾
						(A)	(°C)	(V)	(A)	(A)
							VS-VSKx430-16PBF to VS-VSKx430-20PBF	Super Magn-A-Pak ⁽¹⁾	Thyristor/Diode and Thyristor/ Thyristor Half- Bridge	Screwable
	VS-VSKx500-08PBF to VS-VSKx500-16PBF	Super Magn-A-Pak ⁽¹⁾	Thyristor/Diode and Thyristor/ Thyristor Half- Bridge	Screwable	800 to 1600	500	82	1.50	1570	17 800
	VS-VSKT570-16PBF	Super Magn-A-Pak ⁽¹⁾	Thyristor/Thyristor Half-Bridge	Screwable	1600	570	85	1.36	1500	18 800
	VS-VSKT570-18PBF	Super Magn-A-Pak ⁽¹⁾	Thyristor/Thyristor Half-Bridge	Screwable	1800	570	74	1.50	1790	17 800

Note:

B. Bold indicates new product

1. Isolated package

2. Not isolated package

3. x = circuit configuration. Replace "x" with any of the following letters to determine part number for each circuit configuration.

– Thyristor/diode and thyristor/thyristor half-bridge configurations: T = half-bridge fully controlled; h = half-bridge positive controlled; L = half-bridge negative controlled; n = half-bridge, half-controlled common anode

– common anode or common cathode configuration: U = Dual ScR common cathode; V = Dual ScR common anode

Some configurations might not be available for some packages. Contact Vishay for more information and feasibilities.

4. T_j = 25 °C

5. t = 10 mS, no voltage reapplied, sinusoidal half-wave, initial T_j = T_j max



POWER MODULES

Bridge Rectifier Modules

Versatile and high-efficiency bridge modules from Vishay Intertechnology feature industry-standard outlines with a choice of single-phase and three-phase rectifying bridges. The modules are the ideal choice for input rectification applications at either low or high voltages, with the electrical isolation between the baseplate and the active semiconductors providing a key advantage over discrete components. External electrical connections are provided with a choice of different terminal option, including fast-on, solderable pins, and bolt-down.

Vishay high-power bridge modules are RoHS-compliant and meet industry standards for safety, including UL approval. The devices are recognized throughout the world for their ruggedness, high reliability, and consistency of mechanical specifications and electrical characteristics.

Features

- Wide range of package styles and configurations with diode and / or thyristor technologies
- Direct mounting on heatsink
- Compact case styles for screw, solderable pin, and fast-on plug terminations
- PressFit pins NOW available on MTP package
- High isolation voltage: up to 4000 V
- RoHS-compliant
- Low thermal resistance
- UL approval
- High surge current: up to 1880 A
- Fast and ultrafast bridges available

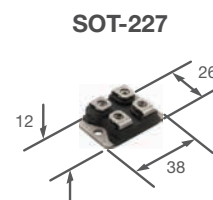
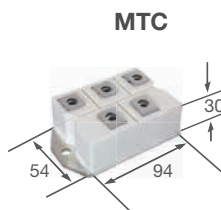
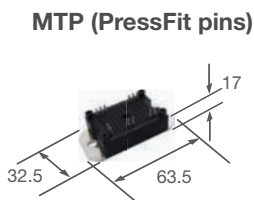
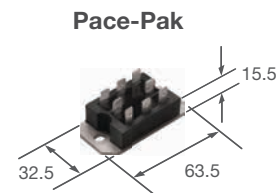
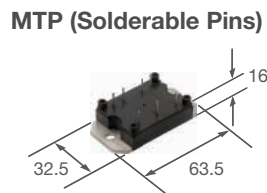
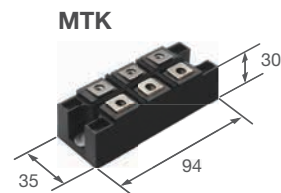
Options

- Customizable for specific application needs
- Temperature sensor available in some package styles

Applications

- Single- and three-phase input rectification
- EV charging stations (high frequency output rectification)

Dimensions in Millimeters





POWER MODULES

Bridge Rectifier Modules

Bridge Rectifier Modules (Standard Recovery)

Device ⁽¹⁾	Package	Type	I _o	V _(BR) Range (V)	Max. V _F at I _F ⁽²⁾	
					(V)	(A)
VS-40MT160KPBF	MTK (Screwable)	Three-Phase Bridge	40	1600	2.0	100
VS-53MT80KPBF to VS-53MT160KPBF	MTK (Screwable)	Full-Controlled Three-Phase Bridge	55	800 to 1600	2.68	150
VS-51MT80KPBF to VS-51MT160KPBF	MTK (Screwable)	Negative Half-Controlled Three-Phase Bridge	55	800 to 1600	2.68	150
VS-52MT80KPBF to VS-52MT160KPBF	MTK (Screwable)	Positive Half-Controlled Three-Phase Bridge	55	800 to 1600	2.68	150
VS-60MT80KPBF to VS-60MT160KPBF	MTK (Screwable)	Three-Phase Bridge	60	800 to 1600	1.75	100
VS-70MT80KPBF to VS-70MT160KPBF	MTK (Screwable)	Three-Phase Bridge	70	800 to 1600	1.6	100
VS-93MT80KPBF to VS-93MT160KPBF	MTK (Screwable)	Full-Controlled Three-Phase Bridge	90	800 to 1600	1.65	150
VS-113MT80KPBF to VS-113MT160KPBF	MTK (Screwable)	Full-Controlled Three-Phase Bridge	90	800 to 1600	1.57	150
VS-91MT80KPBF to VS-91MT160KPBF	MTK (Screwable)	Negative Half-Controlled Three-Phase Bridge	90	800 to 1600	1.65	150
VS-111MT80KPBF to VS-111MT160KPBF	MTK (Screwable)	Negative Half-Controlled Three-Phase Bridge	90	800 to 1600	1.57	150
VS-92MT80KPBF to VS-92MT160KPBF	MTK (Screwable)	Positive Half-Controlled Three-Phase Bridge	90	800 to 1600	1.65	150
VS-112MT80KPBF to VS-112MT160KPBF	MTK (Screwable)	Positive Half-Controlled Three-Phase Bridge	90	800 to 1600	1.57	150
VS-90MT80KPBF to VS-90MT160KPBF	MTK (Screwable)	Three-Phase Bridge	90	800 to 1600	1.6	150
VS-104MT80KPBF to VS-104MT160KPBF	MTK (Screwable)	Three-Phase AC Switch	100	800 to 1600	1.53	150
VS-110MT80KPBF to VS-110MT160KPBF	MTK (Screwable)	Three-Phase Bridge	110	800 to 1600	1.4	150
VS-130MT80KPBF to VS-130MT160KPBF	MTK (Screwable)	Three-Phase Bridge	130	800 to 1600	1.63	200
VS-160MT80KPBF to VS-160MT160KPBF	MTK (Screwable)	Three-Phase Bridge	160	800 to 1600	1.49	200



Note:

1. Bold indicates new product
2. V_F limits are per diode
3. Voltage suppressor available (identified by suffix "K")

4. With both voltage suppression and freewheeling diode available (identified by suffix "KW")



POWER MODULES

Bridge Rectifier Modules

Bridge Rectifier Modules (Standard Recovery), continued

	Device ⁽¹⁾	Package	Type	I _o	V _(BR) Range (V)	Max. V _F at I _F ⁽²⁾	
						(V)	(A)
	VS-200MT40KPBF	MTK (Screwable)	Three-Phase Bridge	200	400	1.4	200
	VS-130MT160C and VS-130MT180C	MTC	Three-Phase Bridge	130	1600 to 1800	2.05	300
	VS-160MT160C and VS-160MT180C	MTC	Three-Phase Bridge	160	1600 to 1800	1.85	300
	VS-300MT160C and VS-300MT180C	MTC	Three-Phase Bridge	300	1600 to 1800	1.70	300
	VS-40MT160PBPBF and VS-40MT160PAPBF	MTP Solderable Pins	Three-Phase Bridge	45	1600	1.45	40
	VS-70MT160PBPBF and VS-70MT160PAPBF	MTP Solderable Pins	Three-Phase Bridge	75	1600	1.45	70
	VS-100MT160PBPBF and VS-100MT160PAPBF	MTP Solderable Pins	Three-Phase Bridge	75	1600	1.51	100
	VS-40MT160P-P	MTP (PressFit Pins)	Three-Phase Bridge	45	1600	1.45	40
	VS-70MT160P-P	MTP (PressFit Pins)	Three-Phase Bridge	75	1600	1.45	70
	VS-100MT160P-P	MTP (PressFit Pins)	Three-Phase Bridge	100	1600	1.51	100
	VS-P101 to P105⁽³⁾⁽⁴⁾	PACE-PAK (D-19)	Single-Phase Semi-Controlled Bridge Common Cathode	25	400 to 1200	1.35	79
	VS-P131 to P135	PACE-PAK (D-19)	Single-Phase Fully-Controlled Bridge	25	400 to 1200	1.35	79
	VS-P121 to P125	PACE-PAK (D-19)	Single-Phase Semi-Controlled Bridge Doubler	25	400 to 1200	1.35	79
	VS-P431 to P435	PACE-PAK (D-19)	Single-Phase Fully-Controlled Bridge	40	400 to 1200	1.4	126
	VS-P421 to P425	PACE-PAK (D-19)	Single-Phase Semi-Controlled Bridge Doubler	40	400 to 1200	1.4	126
	VS-P401 to P405⁽³⁾⁽⁴⁾	PACE-PAK (D-19)	Single-Phase Semi-Controlled Bridge Common Cathode	40	400 to 1200	1.4	126

Note:

1. Bold indicates new product

2. V_F limits are per diode

3. Voltage suppressor available (identified by suffix "K")

4. With both voltage suppression and freewheeling diode available (identified by suffix "KW")



POWER MODULES

Bridge Rectifier Modules

Bridge Rectifier Modules (Fast and Ultrafast Recovery)

	Device ⁽¹⁾	Package	Type	Pin Out	V _{RRM} (V)	I _{F(AV)} at T _c ⁽³⁾		Max. V _F at I _F ⁽⁴⁾		Typ t _{rr} at 25°C		Typ Q _{rr} at 125°C
						(A)	(°C)	(V)	(A)	(ns)	setup (I _F , di _F /dt, V _R)	(nC)
	VS-UFH60BA65	SOT-227 ⁽¹⁾	Single-phase Bridge	Screwable	650	60 (Bridge I ₀)	123	2.35	60	63	50A, 200A/us, 200V	765
	VS-SA61BA60	SOT-227 ⁽¹⁾	Single-phase Bridge	Screwable	600	61 (Bridge I ₀)	57	1.33	30	170	20A, 100A/us, 30V	1970

Note:

1. Bold indicates new product
2. V_F limits are per diode
3. Voltage suppressor available (identified by suffix "K")

4. With both voltage suppression and freewheeling diode available (identified by suffix "KW")



POWER MODULES

MOSFET Modules

Configured as single switches and choppers, Vishay's new power MOSFET modules are ideal for efficiently managing very high currents in low voltage power converters.

Offered in the SOT-227 package, the modules feature n-channel MOSFETs with voltage ratings of 100 V to 500 V and current ratings of 40 A to 435 A.

Features

- Electrically isolated baseplate
- Wide current range: 40 A to 435 A
- Voltage up to 500 V
- New generation provides lower thermal resistance
- Low Q_g / $R_{DS(on)}$ FOM helps reduce switching losses
- Fully characterized capacitance and avalanche SOA
- Low capacitance
- UL and RoHS compliant (completely lead (Pb)-free)

Benefits

- Easy to use and run in parallel
- Low profile package
- Low thermal resistance allows operation at higher case temperatures while maintaining the operating junction temperature within safe limits
- Enhanced body diode for high dV/dt and high di/dt
- Avalanche rugged
- Easy to drive

Applications

- Industrial power supplies
- Choppers
- Forklifts
- Battery chargers
- SMPS (switch mode power supplies)
- Synchronous rectification
- Temperature controls
- Welding
- UPS
- Motor drives
- Solid-state laser power supplies

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каталог, описание, технические, характеристики, datasheet, параметры,
маркировка, габариты, фото , модуль



POWER MODULES

MOSFET Modules

MOSFET Modules

	Device ⁽¹⁾	Package	Type	V _{DSS} (V)	I _D at T _c		R _{DS(ON)} (V _{GS} = 10V) (mΩ)	Q _G (nC)
					(A)	(°C)		
	VS-FC420SA10	SOT-227	Single Switch	100	435	25	1.3	375
	VS-FC420SA15	SOT-227	Single Switch	150	500	25	1.93	250
	VS-FC270SA20	SOT-227	Single Switch	200	287	25	3.3	250
	VS-FC80NA20	SOT-227	High Side Chopper	200	108	25	9.6	161
	VS-FA40SA50LC	SOT-227	Single Switch	500	40	25	106	280
	VS-FA72SA50LC	SOT-227	Single Switch	500	72	25	61.5	225



POWER MODULES

IGBT Modules

High-efficiency IGBT modules from Vishay Intertechnology feature industry-standard outlines with a choice of PT, NPT, and Trench IGBT technologies. Configured as single switches, inverters, choppers, half-bridges, or in custom configurations, these modules are the ideal choice for high-frequency power applications that demand high-efficiency performance. They are designed for use as a main switching device in switch mode power supplies, uninterruptible power supplies, industrial welding, motor drives, and power factor correction systems. Typical applications include boost and buck converters, forward and double forward converters, half bridges, full bridges (H-bridge), and three-phase bridges. Low thermal resistance allows Vishay IGBT modules to operate at higher case temperatures while maintaining the operating junction temperature within safe limits. Electrically isolated from the circuit, the base plate is exposed, allowing for direct mounting to the heat sink. With improved current sharing and lower operating junction temperatures, designers can now achieve higher system reliability. Vishay IGBT modules are RoHS-compliant and meet industry standards for safety including UL approval.

Features

- Wide range of industry-standard package styles
- Direct mount on heat sink
- Choice of PT, NPT, and Trench IGBT technologies
- Low- $V_{CE(on)}$ IGBT
- Switching frequency from 1 kHz to 150 kHz
- Optimized anti-parallel ultrafast diode with soft recovery characteristics
- Rugged transient performance
- High isolation voltage up to 3500 V
- 100 % lead (Pb)-free and RoHS-compliant
- Low thermal resistance
- Wide operating temperature range (-40 °C to +175 °C)
- UL-approved
- PressFit pins technology now available on selected packages
- Gradually introducing modules using proprietary Vishay 600 V and 650 V IGBT silicon (Trench PT and Trench Field-Stop technologies)

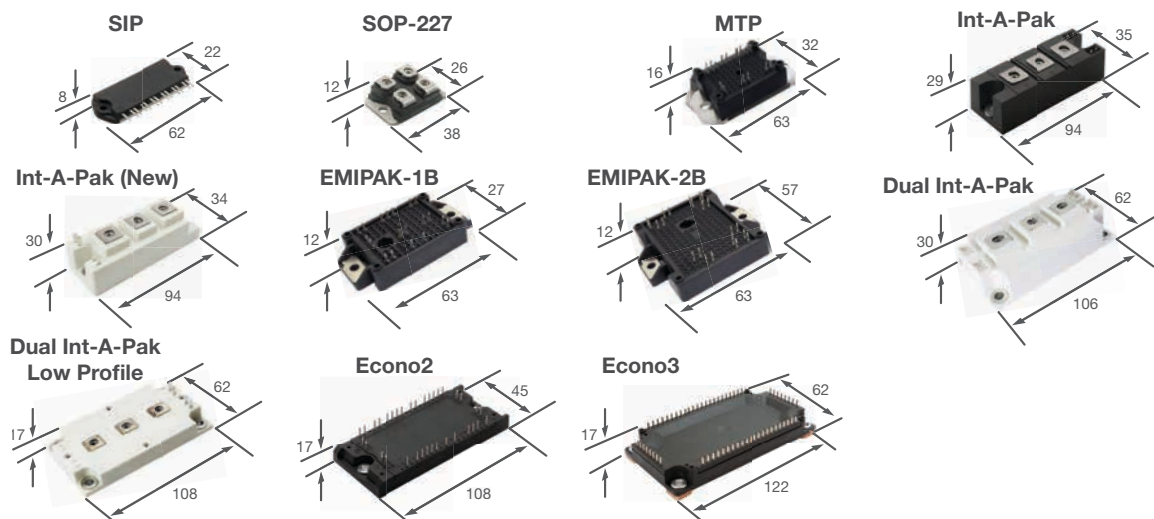
Options

- Short-circuit capability available on many configurations
- Optional SMD integrated thermistor
- Customizable for specific application needs
- Automotive products upon request

Applications

- Industrial high-frequency welding
- Switch mode power supplies
- Uninterruptible power supplies
- Motor drives
- Power factor correction
- Solar inverters

Dimensions in Millimeters





POWER MODULES

IGBT Modules

IGBT Modules



Product	Package Model	Max Dimensions L x W x H (mm)	Pin-Out	Circuit configuration Available	Voltage Range (V)	Current Ratings at 25 °C (A)	Frequency Speed Grade (kHz)
	SIP	62 x 22 x 8	Solderable Pins	6PAK Inverter Customized Configuration	600	8 to 30	1 to 60
	SOT-227	38 x 26 x 12	Screwable	Single Switch Chopper Customized Configuration	600 to 1200	50 to 200	DC to 150
	MTP	63 x 32 x 16	Screwable (PressFit Coming Soon)	Half Bridge Full Bridge Dual Forward Primary Rectifier and PFC Customized Configuration	600 to 1200	up to 100	up to 60
	EMIPAK-1B	63 x 34 x 12	PressFit	Neutral Point Clamp Topology Customized Configurations	600-1200	up to 55	up to 80
	EMIPAK-2B	63 x 57 x 12	PressFit	Double Interleaved Boost Converter 3-Levels Half-Bridge Inverter Customized Configurations	600-1200	up to 160	up to 80
	IAP (Int-A-Pak)	94 x 35 x 29	Screwable	Half Bridge Single Switch Customized Configuration	600 to 1200	100 to 20	DC to 60
	IAP (Int-A-Pak) New	94x34x30	Screwable	Single Switch Half Bridge Chopper Customized Configuration	600 to 1200	up to 100	up to 60
	ECON02	108 x 45 x 17	Solderable (PressFit Coming Soon)	4PAK Customized Configuration	600 to 1200	up to 100	up to 60
	ECON03	122 x 62 x 17	Solderable	4PAK	1200	up to 182	8 to 60



POWER MODULES

IGBT Modules

IGBT Modules, continued

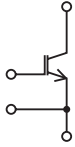
Product	Package Model	Max Dimensions L x W x H (mm)	Pin-Out	Circuit configuration Available	Voltage Range (V)	Current Ratings at 25 °C (A)	Frequency Speed Grade (kHz)
	DIAP (Dual Int-A-Pak)	106 x 62 x 30	Screwable	Single Switch	600 to 1200	up to 100	up to 60
				Half-Bridge			
				Chopper			
				Customized Configuration			
	DIAP LP (Dual Int-A-Pak Low Profile)	108 x 62 x 17	Screwable	Half-Bridge	600	up to 750	up to 30
				3-Levels Inverter			
				Customized Configuration			



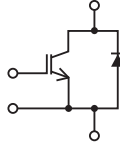
POWER MODULES

IGBT Modules

Single-Switch IGBT Modules



Single-Switch No Diode



Single-Switch with Diode

Device ^(B)	Package	Circuit	Pin Out	V _{CES} (V)	I _c at 25 °C (A)	I _c at T _c		V _{CE(on)} at T _j = 25 °C typ. (V)	E _{tot} at T _j = 125 °C (mJ)	Speed (kHz)
						(A)	(°C)			
VS-GB90DA120U	SOT-227	Single-Switch with Diode	Screwable	1200	149	90	90	3.30	5.8	8 to 60
VS-GB90SA120U	SOT-227	Single-Switch No Diode	Screwable	1200	149	90	90	3.30	5.8	8 to 60
VS-GB90DA60U	SOT-227	Single-Switch with Diode	Screwable	600	147	90	90	2.40	1.76	up to 150
VS-GT120DA65U	SOT-227	Single-Switch with Diode	Screwable	650	167	120	90	1.71	2.4	up to 20
VS-GT140DA60U	SOT-227	Single-Switch with Diode	Screwable	600	200	140	90	1.70	2.55	4 to 30
VS-GT175DA120U	SOT-227	Single-Switch with Diode	Screwable	1200	288	175	90	1.73	15.7	4 to 30
VS-GA200SA60UP	SOT-227	Single-Switch No Diode	Screwable	600	200	100	100	1.60	6.5	up to 40
VS-GP250SA60S	SOT-227	Single-Switch No Diode	Screwable	600	370	245	90	1.01	17.7	up to 5
VS-GA250SA60S	SOT-227	Single-Switch No Diode	Screwable	600	400	250	90	1.33	43.7	up to 5
VS-GB300AH120N	Dual Int-A-Pak	Single-Switch with Diode	Screwable	1200	620	300	80	1.90	58.0	8 to 60
VS-GB400AH120N	Dual Int-A-Pak	Single-Switch with Diode	Screwable	1200	650	400	80	1.90	81.0	8 to 60
VS-GB600AH120N	Dual Int-A-Pak	Single Switch with Diode	Screwable	1200	910	600	80	1.90	105.0	8 to 60

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каталог, описание, технические, характеристики, datasheet, параметры,
маркировка, габариты, фото , модуль

Note:

B. Bold indicates new product

1. Under development

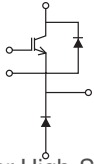
Contact Vishay for customization of circuit topology, IGBT speed, etc. for any listed package



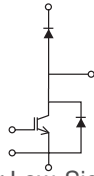
POWER MODULES

IGBT Modules

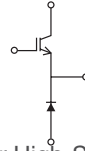
Chopper IGBT Modules



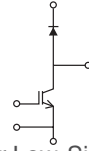
Chopper High-Side Switch
(with A/P Diode)



Chopper Low-Side Switch
(with A/P Diode)



Chopper High-Side Switch
(No A/P Diode – SOT-227)



Chopper Low-Side Switch
(No A/P Diode – SOT-227)

	Device ^(B)	Package	Circuit	Pin Out	V _{CES} (V)	I _c at 25 °C (A)	I _c at T _c		V _{CE(on)} at T _j = 25 °C typ. (V)	E _{tot} at T _j = 125 °C (mJ)	Speed (kHz)
							(A)	(°C)			
	VS-GB55LA120UX	SOT-227	Chopper Low Side Switch	Screwable	1200	84	57	80	3.30	4.7	8 to 60
	VS-GB55NA120UX	SOT-227	Chopper High Side Switch	Screwable	1200	84	57	80	3.30	4.7	8 to 60
	VS-GB75LA60UF	SOT-227	Chopper Low Side Switch	Screwable	600	109	75	80	2.31	1.1	up to 150
	VS-GB75NA60UF	SOT-227	Chopper High Side Switch	Screwable	600	109	75	80	2.31	1.1	up to 150
	VS-GB50LP120N	Int-A-Pak (New)	Chopper Low Side Switch	Screwable	1200	100	50	80	1.70	8.8	8 to 60
	VS-GB100LP120N	Int-A-Pak (New)	Chopper Low Side Switch	Screwable	1200	200	100	80	1.80	18.5	8 to 60
	VS-GB100LH120N	Dual Int-A-Pak	Chopper Low Side Switch	Screwable	1200	200	100	80	1.77	14.2	8 to 60
	VS-GB100NH120N	Dual Int-A-Pak	Chopper High Side Switch	Screwable	1200	200	100	80	1.90	18.4	8 to 60
	VS-GB200LH120N	Dual Int-A-Pak	Chopper Low Side Switch	Screwable	1200	370	200	80	2.07	39.0	8 to 60
	VS-GB200NH120N	Dual Int-A-Pak	Chopper High Side Switch	Screwable	1200	420	200	80	1.80	39.0	8 to 60
	VS-GB300LH120N	Dual Int-A-Pak	Chopper Low Side Switch	Screwable	1200	500	300	80	2.00	67.4	8 to 60
	VS-GB300NH120N	Dual Int-A-Pak	Chopper High Side Switch	Screwable	1200	500	300	80	2.00	67.4	8 to 60

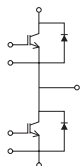
Note:
 B. Bold indicates new product
 1. Under development
 Contact Vishay for customization of circuit topology, IGBT speed, etc. for any listed package



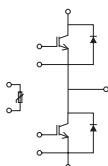
POWER MODULES

IGBT Modules

Half-Bridge IGBT Modules



Half-Bridge



Half-Bridge with Thermistor

	Device ^(B)	Package	Circuit	Pin Out	V _{CES} (V)	I _C at 25 °C (A)	I _C at T _C		V _{CE(on)} at T _J = 25 °C typ. (V)	E _{tot} at T _J = 125 °C (mJ)	Speed (kHz)
							(A)	(°C)			
	VS-40MT120UHAPBF	MTP	Half-Bridge	Solderable	1200	80	40	104	3.36	3.2	8 to 60
	VS-40MT120UHTAPBF	MTP	Half-Bridge with Thermistor	Solderable	1200	80	40	104	3.36	3.2	8 to 60
	VS-50MT060WHTAPBF	MTP	Half-Bridge with Thermistor	Solderable	600	114	50	109	2.30	2.4	60 to 100
	VS-70MT060WHTAPBF	MTP	Half-Bridge with Thermistor	Solderable	600	100	70	78	2.10	2.4	60 to 150
	VS-GP100TS60SFPBF	Int-A-Pak	Half-Bridge	Screwable	600	350	240	60	1.37	17.7	DC to 1
	VS-GA100TS60SFPBF	Int-A-Pak	Half-Bridge	Screwable	600	220	100	130	1.11	41.0	DC to 1
	VS-GB100TS60NPBF	Int-A-Pak	Half-Bridge	Screwable	600	108	74	80	2.60	2.1	8 to 60
	VS-GB150TS60NPBF	Int-A-Pak	Half-Bridge with SMD Gate Resistor	Screwable	600	138	93	80	2.64	6.6	8 to 60
	VS-GB200TS60NPBF	Int-A-Pak	Half-Bridge with SMD Gate Resistor	Screwable	600	209	142	80	2.60	11.6	8 to 60
	VS-GT50TP60N	Int-A-Pak (New)	Half-Bridge	Screwable	600	85	50	80	1.65	1.4	4 to 30
	VS-GB50TP120N	Int-A-Pak (New)	Half-Bridge	Screwable	1200	100	50	80	1.75	12.5	8 to 60
	VS-GT50TP120N	Int-A-Pak (New)	Half-Bridge	Screwable	1200	100	50	80	1.90	9.9	4 to 30
	VS-GB75TP120N	Int-A-Pak (New)	Half-Bridge	Screwable	1200	150	75	80	1.80	16.8	8 to 60
	VS-GB75TP120U	Int-A-Pak (New)	Half-Bridge	Screwable	1200	105	75	80	3.20	10.0	8 to 60
	VS-GT100TP60N	Int-A-Pak (New)	Half-Bridge	Screwable	600	160	100	80	1.65	2.5	4 to 30

Note:

B. Bold indicates new product

1. Under development



Contact Vishay for customization of circuit topology, IGBT speed, etc. for any listed package



POWER MODULES

IGBT Modules

Half-Bridge IGBT Modules, continued

	Device ^(B)	Package	Circuit	Pin Out	V _{CES} (V)	I _C at 25 °C (A)	I _C at T _c		V _{CE(on)} at T _j = 25 °C typ. (V)	E _{tot} at T _j = 125 °C (mJ)	Speed (kHz)
							(A)	(°C)			
	VS-GB100TP120N	Int-A-Pak (New)	Half-Bridge	Screwable	1200	200	100	80	1.80	18.4	8 to 60
	VS-GT200TP065N	Int-A-Pak (New)	Half-Bridge	Screwable	650	221	166	80	1.90	6.8	up to 30
	VS-GB100TH120U	Dual Int-A-Pak	Half-Bridge	Screwable	1200	200	100	80	3.46	14.0	8 to 60
	VS-GB100TH120N	Dual Int-A-Pak	Half-Bridge	Screwable	1200	200	100	80	1.80	14.2	8 to 60
	VS-GB150TH120N	Dual Int-A-Pak	Half-Bridge	Screwable	1200	225	150	80	1.70	37.0	8 to 60
	VS-GB150TH120U	Dual Int-A-Pak	Half-Bridge	Screwable	1200	280	150	80	3.1	28.5	8 to 60
	VS-GA200TH60S	Dual Int-A-Pak	Half-Bridge	Screwable	600	260	200	80	1.90	16.4	DC to 1
	VS-GB200TH120N	Dual Int-A-Pak	Half-Bridge	Screwable	1200	360	200	80	1.90	38.2	8 to 60
	VS-GB200TH120U	Dual Int-A-Pak	Half-Bridge	Screwable	1200	330	200	80	3.10	38.2	8 to 60
	VS-GB300TH120N	Dual Int-A-Pak	Half-Bridge	Screwable	1200	500	300	80	2.00	67.4	8 to 60
	VS-GB300TH120U	Dual Int-A-Pak	Half-Bridge	Screwable	1200	530	300	80	3.10	53.3	8 to 60
	VS-GT400TH60N	Dual Int-A-Pak	Half-Bridge	Screwable	600	530	400	80	1.60	40.0	4 to 30
VS-GB400TH120U	Dual Int-A-Pak	Half-Bridge	Screwable	1200	660	400	80	3.1	63.3	8 to 60	

Note:

B. Bold indicates new product

1. Under development


Contact Vishay for customization of circuit topology, IGBT speed, etc. for any listed package



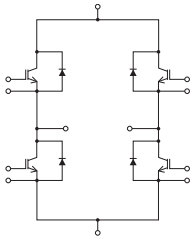
POWER MODULES

IGBT Modules


Half-Bridge IGBT Modules, continued

	Device ^(B)	Package	Circuit	Pin Out	V _{CES} (V)	I _C at 25 °C (A)	I _C at T _C		V _{CE(on)} at T _J = 25 °C typ. (V)	E _{tot} at T _J = 125 °C (mJ)	Speed (kHz)
							(A)	(°C)			
	VS-GP300TD60S	Dual Int-A-Pak Low-Profile	Half-Bridge	Screwable	600	580	400	80	1.30	62.4	DC to 1
	VS-GP400TD60S	Dual Int-A-Pak Low-Profile	Half-Bridge	Screwable	600	758	525	80	1.30	81.2	DC to 1

Full-Bridge IGBT Modules



Full-Bridge

	Device ^(B)	Package	Circuit	Pin Out	V _{CES} (V)	I _C at 25 °C (A)	I _C at T _C		V _{CE(on)} at T _J = 25 °C typ. (V)	E _{tot} at T _J = 125 °C (mJ)	Speed (kHz)
							(A)	(°C)			
	VS-20MT120UFAPbF	MTP	Full-Bridge	Solderable	1200	40	20	96	3.29	1.5	8 to 60
	VS-20MT120UFP	MTP	Full-Bridge	Solderable	1200	40	20	106	3.29	2.1	8 to 60
	VS-25MT060WFAPbF	MTP	Full-Bridge	Solderable	600	69	46	80	2.22	0.9	8 to 60

Note:

B. Bold indicates new product

1. Under development

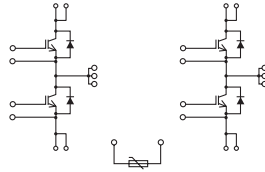
Contact Vishay for customization of circuit topology, IGBT speed, etc. for any listed package




POWER MODULES

IGBT Modules

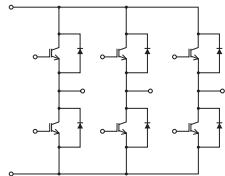
4-PAK IGBT Modules




4-Pak (Thermistor Option Available)

	Device ^(B)	Package	Circuit	Pin Out	V _{CE(s)} (V)	I ^c at 25 °C (A)	I _c at T _c		V _{CE(on)} at T _j = 25 °C typ. (V)	E _{tot} at T _j = 125 °C (mJ)	Speed (kHz)
							(A)	(°C)			
	VS-GB50YF120N	ECON02	4-Pak	Solderable	1200	66	44	80	3.49	3.5	8 to 60
	VS-GB75YF120N	ECON02	4-Pak	Solderable	1200	100	67	80	3.40	7.6	8 to 60
	VS-GB75YF120UT	ECON02	4-Pak with Thermistor	Solderable	1200	100	67	80	3.40	4.8	8 to 60

6-PAK IGBT Modules



Three-Phase Inverter

	Device ^(B)	Package	Circuit	Pin Out	V _{CE(s)} (V)	I ^c at 25 °C (A)	I _c at T _c		V _{CE(on)} at T _j = 25 °C typ. (V)	E _{tot} at T _j = 125 °C (mJ)	Speed (kHz)
							(A)	(°C)			
	VS-CPV362M4FPbF	SIP	Three-Phase Inverter	Solderable	600	8.8	4.8	100	1.41	0.9	1 to 10
	VS-CPV362M4UPbF	SIP	Three-Phase Inverter	Solderable	600	7.2	3.9	100	1.70	0.4	Over 5
	VS-CPV363M4UPbF	SIP	Three-Phase Inverter	Solderable	600	13	6.8	100	1.70	0.5	1 to 10
	VS-CPV364M4FPbF	SIP	Three-Phase Inverter	Solderable	600	27	15	100	1.35	2.5	1 to 10
	VSCP364M4KPbF	SIP	Three-Phase Inverter	Solderable	600	24	13	100	1.80	1.3	Over 5
	VS-CPV364M4UPbF	SIP	Three-Phase Inverter	Solderable	600	20	10	100	1.56	0.7	Over 5

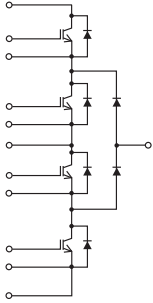
Note:
 B. Bold indicates new product
 1. Under development
 Contact Vishay for customization of circuit topology, IGBT speed, etc. for any listed package





POWER MODULES

IGBT Modules

3-Levels IGBT Modules



Three-Levels Half-Bridge
Inverter Stage

	Device ^(B)	Package	Circuit	Pin Out	V _{CES} (V)	I _c at 25 °C (A)	I _c at T _c		V _{CE(on)} at T _j = 25 °C typ. (V)	E _{tot} at T _j = 125 °C (mJ)	Speed (kHz)
							(A)	(°C)			
	VS-ETF075Y60U	EMIPAK-2B	3-Levels Half-Bridge Inverter Stage	PressFit	600	154	113	80	1.45	2.8	up to 20
	VS-ETF150Y65U	EMIPAK-2B	3-Levels Half-Bridge Inverter Stage	PressFit	650	180	150	60	2.04	2.10	up to 20
	VS-ETF150Y65N	EMIPAK-2B	3-Levels Half-Bridge Inverter Stage	PressFit	650	201	171	60	1.70	5.1	up to 20
	VS-GT300FD060N	DIAP Low-Profile	3-Levels Half-Bridge Inverter Stage	Screwable	600	396	300	80	1.72	27.6	4 to 30

Note:

B. Bold indicates new product

1. Under development

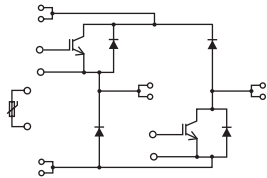
Contact Vishay for customization of circuit topology, IGBT speed, etc. for any listed package





POWER MODULES

IGBT Modules

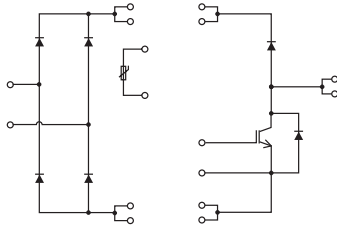
Dual Forward IGBT Modules




Dual Forward

	Device ^(B)	Package	Circuit	Pin Out	V _{CES} (V)	I ^c at 25 °C (A)	I _c at T _c		V _{CE(on)} at T _j = 25 °C typ. (V)	E _{tot} at T _j = 125 °C (mJ)	Speed (kHz)
							(A)	(°C)			
	VS-100MT060WDF	MTP	Dual Forward	Solderable	600	121	83	80	1.93	2.6	6 to 150
	VS-150MT060WDF	MTP	Dual Forward	Solderable	600	138	96	80	2.11	3.4	70 to 200
	VS-150MT060WDF-P	MTP (PressFit Pins)	Dual Forward	PressFit	600	138	96	80	2.11	3.4	50 to 200

Primary Rectifier and PFC IGBT Modules



Primary Rectifier and PFC

	Device ^(B)	Package	Circuit	Pin Out	V _{CES} (V)	I ^c at 25 °C (A)	I _c at T _c		V _{CE(on)} at T _j = 25 °C typ. (V)	E _{tot} at T _j = 125 °C (mJ)	Speed (kHz)
							(A)	(°C)			
	VS-70MT060WSP	MTP	Primary Rectifier and PFC	Solderable	600	96	66	80	1.93	0.57	up to 150
	VS-100MT060WSP	MTP	Primary Rectifier and PFC	Solderable	600	107	73	80	2.14	1.95	up to 150

Note:

B. Bold indicates new product

1. Under development

Contact Vishay for customization of circuit topology, IGBT speed, etc. for any listed package



POWER MODULES

SEMICONDUCTORS

MOSFETs Segment

MOSFETs

- Low Voltage TrenchFET® Power MOSFETs
- Medium Voltage Power MOSFETs
- High Voltage Planar MOSFETs
- High Voltage Superjunction MOSFETs
- Automotive Grade MOSFETs

ICs

- VRPower® DrMOS Integrated Power Stages
- Power Management and Power Control ICs
- Smart Load Switches
- Analog Switches and Multiplexers

Diodes Segment

Rectifiers

- Schottky Rectifiers
- Ultrafast Recovery Rectifiers
- Standard and Fast Recovery Rectifiers
- High Power Rectifiers / Diodes
- Bridge Rectifiers

Small Signal Diodes

- Schottky and Switching Diodes
- Zener Diodes
- RF Pin Diodes

Protection Diodes

- TVS TRANSZORB® and PAR® (unidirectional, bidirectional)
- ESD Protection Diodes (including arrays)

Thyristors / SCRs

- Phase Control Thyristors
- Fast Thyristors

Power Modules

- Input Modules (diodes and thyristors)
- Output and Switching Modules (contain MOSFETs, IGBTs, and diodes)
- Custom Modules

Optoelectronic Components Segment

- Infrared Emitters and Detectors
- Optical Sensors

- Proximity
- Ambient Light
- Light Index (RGBW, UV, IR)
- Humidity
- Quadrant Sensors
- Transmissive
- Reflective
- Infrared Remote Control Receivers
- Optocouplers
 - Phototransistor, Photodarlington
 - Linear
 - Phototriac
 - High Speed
- IGBT and MOSFET Drivers
- Solid-State Relays
- LEDs and 7-Segment Displays
- Infrared Data Transceiver Modules
- Custom Products

PASSIVE COMPONENTS

Resistors and Inductors Segment

Film Resistors

- Metal Film Resistors
- Thin Film Resistors
- Thick Film Resistors
- Power Thick Film Resistors
- Metal Oxide Film Resistors
- Carbon Film Resistors

Wirewound Resistors

- Vitreous, Cemented, and Housed Resistors
- Braking and Neutral Grounding Resistors
- Custom Load Banks

Power Metal Strip® Resistors

- Battery Management Shunts
- Crowbar and Steel Blade Resistors
- Thermo Fuses

Chip Fuses

Pyrotechnic Initiators / Igniters

Variable Resistors

- Cermet Variable Resistors
- Wirewound Variable Resistors
- Conductive Plastic Variable Resistors

- Contactless Potentiometers
- Hall Effect Position Sensors
- Precision Management Encoders
- Networks / Arrays
- RF and Microwave Resistors
- High Voltage Resistors
- Dividers
- Non-Linear Resistors and Temperature Sensors
 - NTC Thermistors
 - PTC Thermistors
 - Thin Film RTDs
 - Varistors
 - Platinum Chip Temperature Sensors
- Magnetics
 - Power Inductors
 - Power Chokes
 - High Frequency RF Inductors
 - Magnetic Actuators
 - Wireless Charging Coils
 - Planar Devices
 - Transformers
 - Custom Magnetics

Connectors

Capacitors Segment

Tantalum Capacitors

- Molded Chip Tantalum Capacitors
- Molded Chip Polymer Tantalum Capacitors
- Tantalum MAP Capacitors
- Polymer Tantalum MAP Capacitors
- Coated Chip Tantalum Capacitors
- Solid Through-Hole Tantalum Capacitors
- Wet Tantalum Capacitors

Ceramic Capacitors

- Multilayer Chip Capacitors
- Disc Capacitors
- Multilayer Chip RF Capacitors
- Chip Antennas
- Thin Film Capacitors

Film Capacitors

- Power Capacitors
- Heavy-Current Capacitors
- Aluminum Electrolytic Capacitors
- ENYCAP™ Energy Storage Capacitors


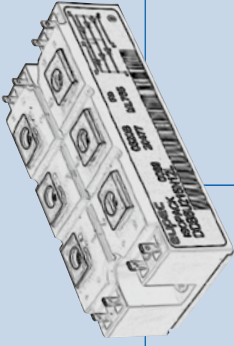
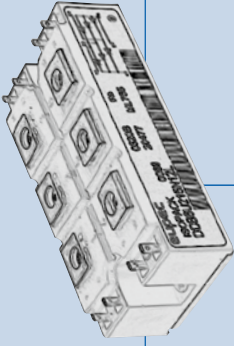
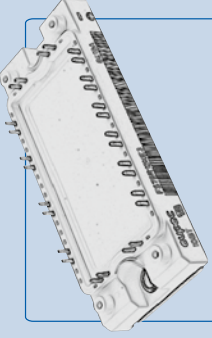
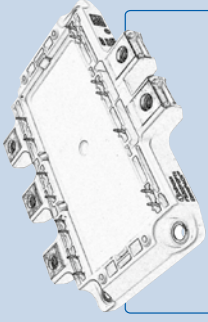
Bridge Rectifier & AC-Switches



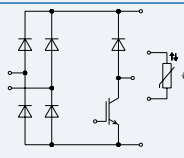
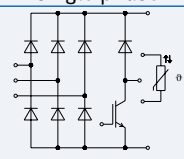
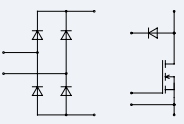
We offer bridge rectifier modules in solder pin design like EasyBRIDGE or eupec™ EconoBRIDGE™ modules. The available configurations are fully- and half controlled rectifiers with brake IGBT and optional NTC resistor. They cover the current range from 25 A up to 180 A at 800V, 1600V and 1800V.

The IsoPACK™ family with screwable load terminals are fully-, half- and uncontrolled rectifier modules. The three phase AC Switches complete the IsoPACK™ product family. The current range covers 85 A up to 205 A at 1600 V.

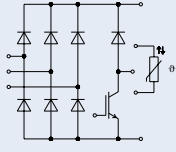
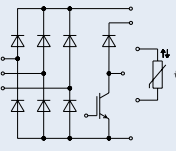
Overview Bridge Rectifier, AC-Switches

2000					
1800					
1600	 <p>EasyBRIDGE</p>	 <p>eupec™ IsoPACK™ Bridge</p>	 <p>eupec™ IsoPACK™ AC-Switch</p>	 <p>eupec™ EconoBRIDGE™ 2</p>	 <p>eupec™ EconoBRIDGE™ 4</p>
	$I_d = 25 - 75A$	$I_d = 85 - 205A$	$I_{RMS} = 85 - 145A$	$I_d = 84 - 180A$	$I_d = 240 - 360 A$
	Configuration B2U B6U	Configuration B6 U/HK/C	Configuration W3C	Configuration B6U B6HK	Configuration B6HK
V_{RRM}					

EasyBRIDGE

800 V _{CES}										
Type	V _{RRM} V	I _d A	Diode				Brake Chopper			Outline/ page
			R _{thjC} K/W max.	V _{t0} V T _{vj} = 150°C	r _t mΩ	V _{CE} V	I _C * A T _C = 80°C	R _{thjC} K/W max.		
 <p>single phase</p>	DDB2U30N08VR	800	48	1,30	0,75	6,95	600	20	1,50	L_750d/6.7
 <p>three phase</p>	DDB6U30N08VR	800	30	1,80	0,85	8,30	600	20	1,50	L_750e/6.7
	DDB2U50N08W1R_B23	800	50	1,20			600	50	0,25	data on request

EasyBRIDGE

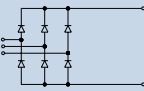
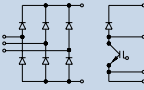
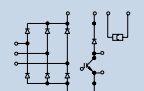
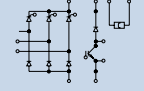
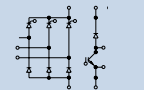
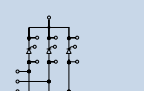
1600 V _{CES}										
Type	IGBT Inverter					Brake Chopper			Outline/ page	
	V _{RRM} V	I _d A	R _{thjC} K/W max.	V _{t0} V T _{vj} = 150°C	r _t mΩ	V _{CE} V	I _C * A T _C = 80°C	R _{thjC} K/W max.		
 three phase	DDB6U25N16VR	1600	30	1,55	0,76	7,60	1200	15	1,45	L_750e/6.7
 three phase	DDB6U75N16W1R	1600	75	0,72			1200	50	0,45	L_1ba/6.7
	DDB6U75N16W1R_B11	1600	75	0,72			1200	50	0,45	L_1ba/6.7

* as specified in data sheet

..._B11 PressFIT Modules

Диодный мост г.Минск www.tiristor.by email: minsk17@tut.by
viber и тел.+375447584780
каталог, описание, технические, характеристики, datasheet, параметры,
маркировка, габариты, фото , модуль

eupec™ EconoBRIDGE™ Rectifier

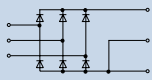
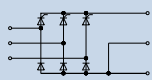
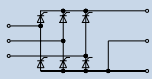
Type	V_{DRM}, V_{RRM} V $V_{DSM} = V_{DRM}$ $V_{RSM} =$ $V_{RRM} + 100V$	I_{FRMSM} (I_{TRMSM}) A	I_{FSM} (I_{TSM}) A 10 ms $T_{vj\ max}$	I_d/T_c A/°C	$V_{(TO)}$ V $T_{vj} =$ $T_{vj\ max}$	r_T mΩ $T_{vj} =$ $T_{vj\ max}$	R_{thjC} °C/W per arm 120° el Square wave	$T_{vj\ max}$ °C	V_{CES} V	I_C A	Outline/ page	
 3 phase bridge rectifier, uncontrolled	DDB6U100N16R	1600	60	550	100/100	0,75	5,5	1,15	150		M_EB2a/6.8	
	DDB6U144N16R	1600	100	1000	145/100	0,75	3,1	0,89	150		M_EB2a/6.8	
 3 phase bridge rectifier, uncontrolled with brake chopper	DDB6U84N16RR	1600	60	550	85/100	0,75	5,50	1,45	150	1200	50	M_EB2b/6.8
	DDB6U100N16RR	1600	60	550	100/100	0,75	5,50	1,15	150	1200	50	M_EB2b/6.8
 3 phase bridge rectifier, uncontrolled with brake chopper and NTC	DDB6U104N16RR	1600	60	550	105/100	0,75	5,50	1,08	150	1200	50	M_EB2c/6.8
	DDB6U104N18RR	1800	60	550	105/100	0,75	5,50	1,08	150	1200	50	M_EB2c/6.8
	DDB6U134N16RR	1600	80	550	134/100	0,75	6,30	0,70	150	1200	70	M_EB2c/6.8
 3 phase bridge rectifier, halfcontrolled with brake chopper and NTC	TDB6HK124N16RR	1600	70	550	125/85	0,75	6,30	0,63	125	1200	70	M_EB2d/6.8
 3 phase bridge rectifier, halfcontrolled with brake chopper	TDB6HK180N16RR	1600	150	1400	180/80	0,83	2,30	0,35	150	1200	100	M_EB2f/6.8
	TDB6HK180N16RR_B11	1600	150	1400	180/80	0,83	2,30	0,35	150	1200	100	M_EB2e/6.8
 3 phase bridge rectifier, half-controlled with NTC	◆ TDB6HK240N16P	1600	240	data on request							M_EB4a/6.9	
	◆ TDB6HK360N16P	1600	360	data on request							M_EB4a/6.9	

◆ New type
_B11 PressFIT Modules


eupec™ EconoBRIDGE™ Rectifiers are UL recognized

SCR
Diode Modules

eupec™ IsoPACK™ Bridge Rectifier

Type	V_{DRM}, V_{RRM} V $V_{DSM} = V_{DRM}$ $V_{RSM} =$ $V_{RRM} + 100V$	I_{FRMSM} (I_{TRMSM}) A	I_{FSM} (I_{TSM}) A 10 ms $T_{vj\ max}$	I_d/T_c A/°C	$V_{(TO)}$ V $T_{vj} =$ $T_{vj\ max}$	r_T mΩ $T_{vj} =$ $T_{vj\ max}$	R_{thJC} °C/W per arm 120° el Square wave	$T_{vj\ max}$ °C	Outline/ page	
 3 phase bridge rectifier, uncontrolled	DDB6U85N16L	1600	60	550	85/100	0,75	5,50	1,45	150	M_1Pa/6.9
	DDB6U145N16L	1600	100	1000	145/100	0,75	3,10	0,89	150	M_1Pa/6.9
	DDB6U205N16L	1600	120	1375	205/100	0,75	2,20	0,59	150	M_1Pa/6.9
	DDB6U215N16L	1600	125	1850	215/100	0,75	1,60	0,49	150	M_1Pa/6.9
 3 phase bridge rectifier, half controlled	TDB6HK95N16LOF	1600	75	620	95/85	0,95	5,50	0,82	125	M_1Pb/6.9
	TDB6HK135N16LOF	1600	100	870	135/85	0,95	4,30	0,59	125	M_1Pb/6.9
	TDB6HK165N16LOF	1600	120	1050	165/85	0,95	3,20	0,49	125	M_1Pb/6.9
 3 phase bridge rectifier, fully controlled	TTB6C95N16LOF	1600	75	620	95/85	0,95	5,50	0,82	125	M_1Pb/6.9
	TTB6C135N16LOF	1600	100	870	135/85	0,95	4,30	0,59	125	M_1Pb/6.9
	TTB6C165N16LOF	1600	120	1050	165/85	0,95	3,20	0,49	125	M_1Pb/6.9

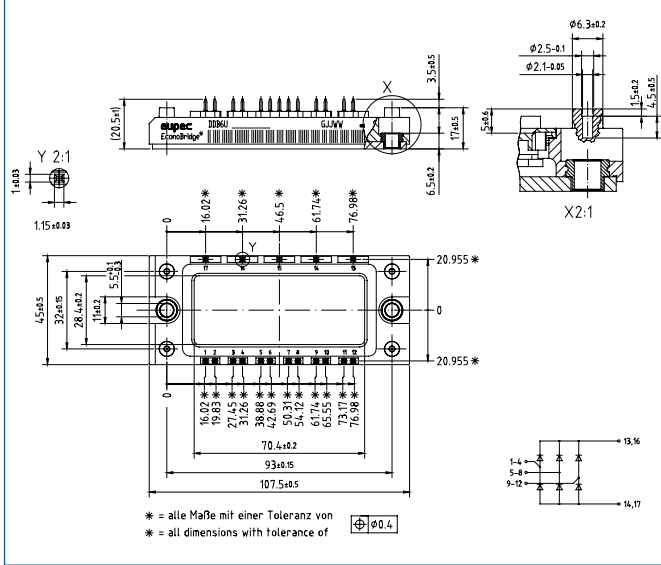
eupec™ IsoPACK™ AC-Switches

Type	V_{DRM}, V_{RRM} V $V_{DSM} = V_{DRM}$ $V_{RSM} =$ $V_{RRM} + 100V$	I_{FRMSM} (I_{TRMSM}) A	I_{FSM} (I_{TSM}) A 10 ms $T_{vj\ max}$	I_d/T_c A/°C	$V_{(TO)}$ V $T_{vj} =$ $T_{vj\ max}$	r_T mΩ $T_{vj} =$ $T_{vj\ max}$	R_{thJC} °C/W per arm 120° el Square wave	$T_{vj\ max}$ °C	Outline/ page	
 3 phase AC-Switches, fully controlled	TTW3C85N16LOF	1600	75	620	85/85	0,95	5,50	0,70	125	M_1Pb/6.9
	TTW3C115N16LOF	1600	100	870	115/85	0,95	4,30	0,50	125	M_1Pb/6.9
	TTW3C145N16LOF	1600	120	1050	145/85	0,95	3,20	0,42	125	M_1Pb/6.9

eupec™ IsoPACK™ modules are UL recognized

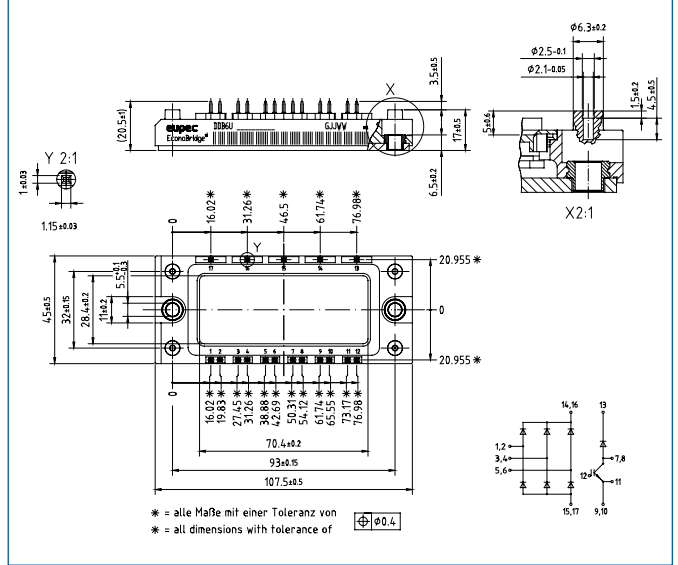
eupec™ EconoBRIDGE™ 2 Rectifier

M_EB2a



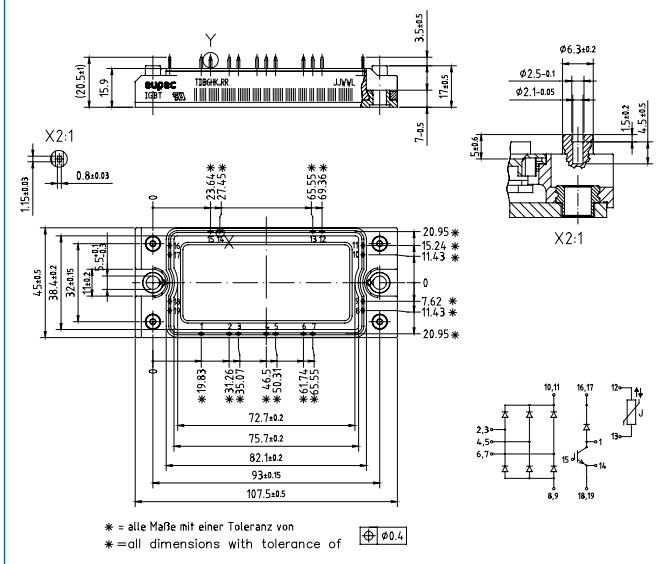
eupec™ EconoBRIDGE™ 2 Rectifier

M_EB2b



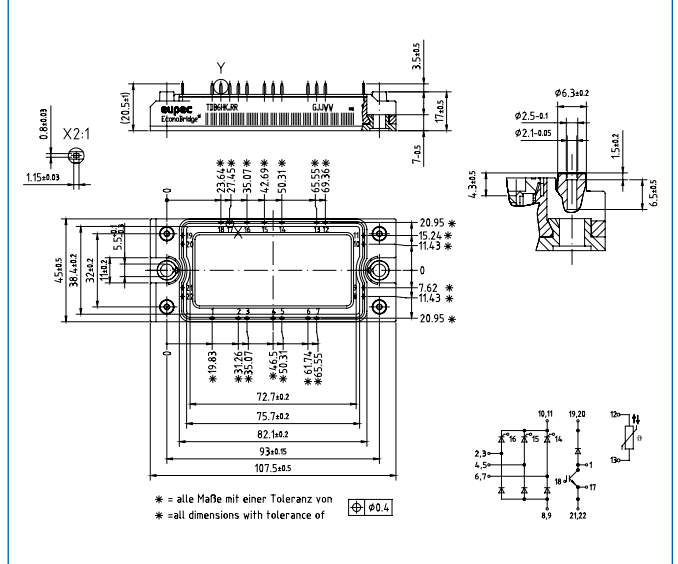
eupec™ EconoBRIDGE™ 2 Rectifier

M_EB2c



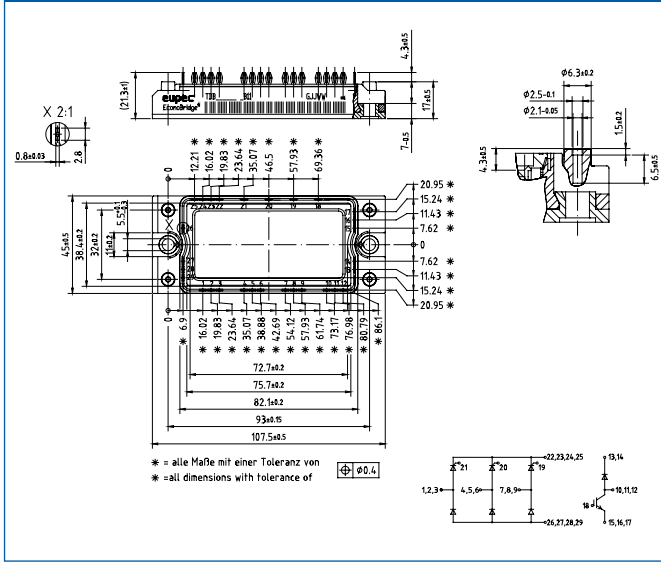
eupec™ EconoBRIDGE™ 2 Rectifier

M_EB2d



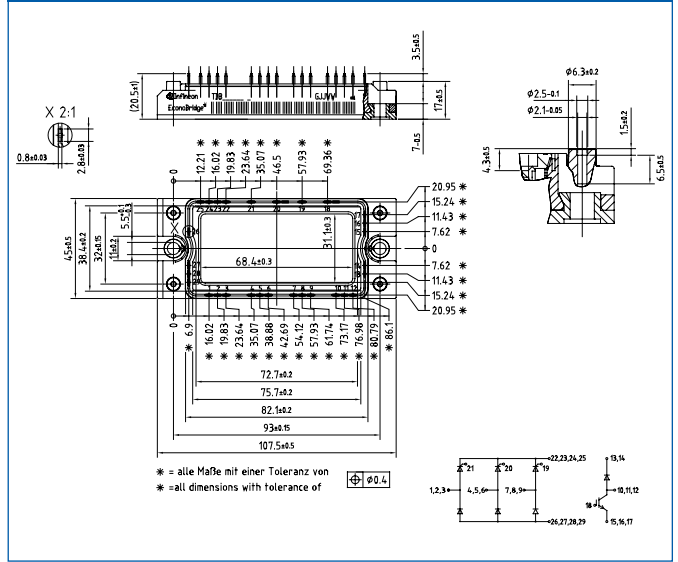
eupec™ EconoBRIDGE™ 2 Rectifier

M_EB2e



eupec™ EconoBRIDGE™ 2 Rectifier

M_EB2f

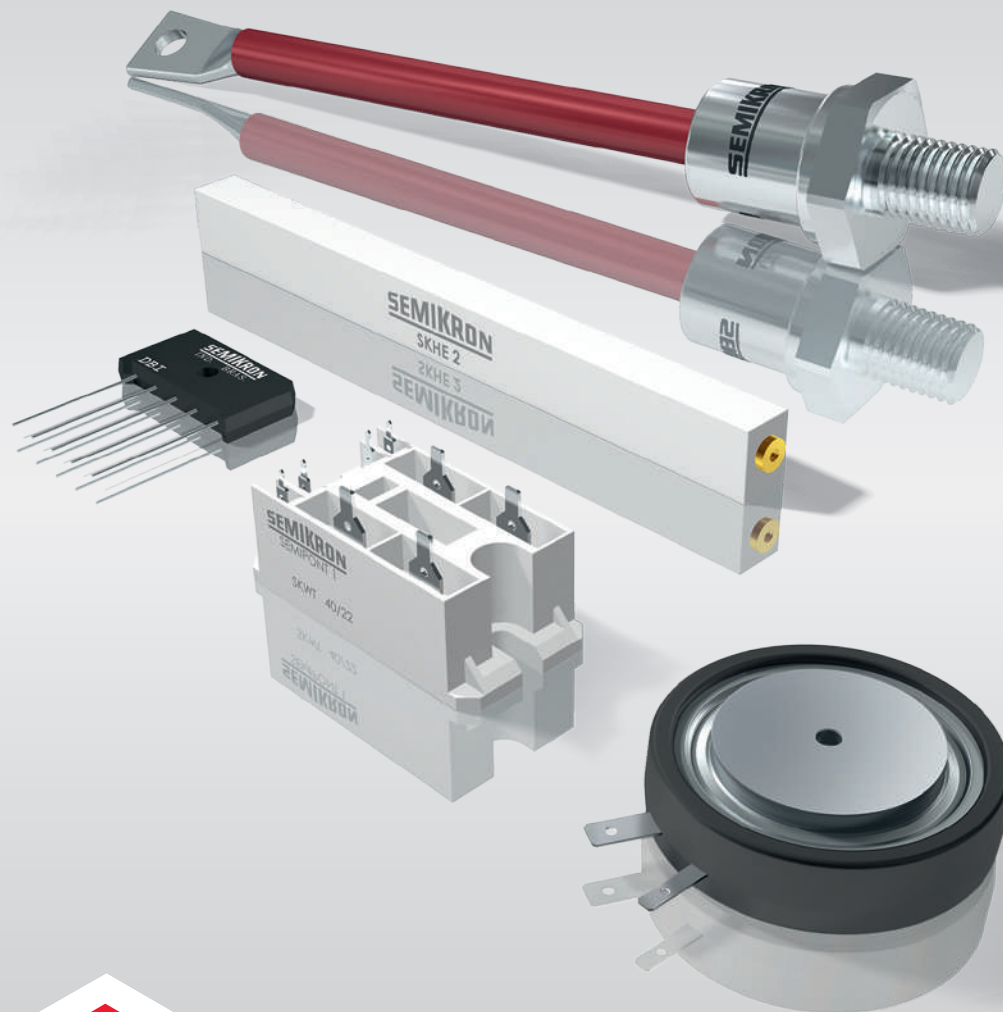


SCR
Diode Modules

Package Units

Rectifier Modules	Housing Size (overall)	Packing Units
IsoPACK™	42 mm	4
	54 mm	3
eupec EconoBRIDGE™ 2	45 mm x 107 mm	10
eupec EconoBRIDGE™ 4	130,0 mm x 103,0 mm	6
EasyBRIDGE 750	25,4mm x 35,6 mm	40
EasyBRIDGE 1	33 mm x 45,6 mm	20
EasyBRIDGE 2	45,6 mm x 55,9 mm	20

Robust and Easy to Use



Discrete Diodes
Discrete Thyristors
Rectifier Bridges



Discrete Diodes and Thyristors



Discrete diodes and thyristors for low to high-power applications. A wide range of case designs are available in voltage classes from 200V to 8000V and current ratings from 1A to 6000A.

Discrete benefits

Discrete components are used in a wide variety of applications. Particular benefits are achieved whenever high current, uncommon topologies, natural cooling or stability in harsh conditions are required.

The SEMIKRON portfolio includes axial leaded diodes up to 6A, diodes and thyristors in screw fit (stud) and capsule housings for up to 6000A and 8000V for diodes and to 1200A and 1800V for thyristors.

- Easy assembly
- Hermetic sealing
- Rugged construction

Avalanche diodes

- No overvoltage suppressors needed
- Robust against short-term reverse overloads
- High blocking voltages possible without static or dynamic voltage sharing circuits

Discrete applications

Key uses include welding machines, battery chargers, electroplating, soft starters, DC motor control, AC controllers (e.g. for temperature control), alternators and many more. With sealed cases, discrete devices are convenient for both natural convection and forced cooling, allowing a broader range of applications.

With over 50 years of experience in the field and millions of units produced every year, the SEMIKRON portfolio delivers competitive, flexible and highly reliable options.

Discrete product range

Axial diodes	1A to 6A	100V to 2000V
Stud (screw fit) diodes	5A to 600A	200V to 5000V
Capsule (disc) diodes	up to 6000A	100V to 2200V
Stud (screw fit) thyristors	10A to 300A	400V to 1800V
Capsule (disc) thyristors	340A to 1200A	400V to 1800V

Discrete diodes



Leaded



Stud (screw fit)



Capsule

Discrete thyristors



Stud (screw fit)



Capsule

Key features

- Recommended for forced air and water cooling
- Compact case with high current capability
- Stud and disc types: forward drop selections available for easy paralleling
- Axial diodes for PCB mounting
- Available in standard and fast versions

Rectifier Bridges

Single-phase and 3-phase isolated rectifier bridges for low to medium power applications. Standard and special topologies featuring diodes, thyristors and IGBTs are available in various case and terminal designs. For voltages ranging from 200V to 2200V and currents ranging from 9A to 494A.

Rectifier bridge benefits

When performance, space and fast production are paramount, SEMIKRON rectifier bridges are the solution in many applications.

Single or 3-phase topologies featuring diodes, thyristors and IGBTs in isolated compact cases can be achieved. Whether your preference is solder-based connection, solderless connection with spring or press-fit contacts, or mechanical screw connections, fast-on or busbars, SEMIKRON has a product for you.

Rectifier bridge applications

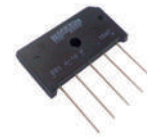
Key applications include battery chargers, motor drive input rectifiers, power supplies, DC motor control, rectifiers with PFC, AC controllers, (SKWT type) static switches for natural convection or forced cooling.

Rectifier bridge product range

- 9A to 494A, 400V to 2200V



SKHE 2000/900 - 1,2



DBI 6 P



SKWT 40

New discrete and rectifier bridges

Product	Type	Current I (A) @ Tc / Tamb	Voltage (V)	
In-Line bridges for PCB assembly	BI 6 P	9A @ 73°C	200...2200	-
	BI 25 P	25A @ 26°C	200...2200	-
	DBI 6 P	9A @ 113°C	200...2200	-
	DBI 25 P	27A @ 32°C	200...2200	-
High voltage diodes	SKHE 2000/900-1,2	1.5A @ 45°C	V(BR) = 6000 V _{VRMS} = 2000	-
	SKHE 3500/2200-2,0	2.5A @ 45°C	V(BR) = 10000 V _{VRMS} = 3500	-
New stud screw diodes	SKN 96 / SKR 96	95A @ 142°C	400...1200	Hex base, screw SW17, M8
	SKN 152 / SKR 152	150A @ 140°C	400...1200	SW27, 3/8"-27 UNF
	SKN 300 / SKR 300	300A @ 124°C	400...1600	SW32, M16
	SKN 600 / SKR 600	600A @ 105°C	400...1600	SW41, M24
Disc thyristors and diodes	SKN 503 SG	503A @ 120°C	400...2200	Dimensions in mm Ø42 x Ø25 x H14.5
	SKN 1503 SG	1690A @ 75°C	400...2200	Ø58 x Ø36 x H26.5
	SKN 1603	1793A @ 75°C	400...2200	Ø50 x Ø32 x H14.5
	SKT 553 SG	554A @ 85°C	400...1800	Ø42 x Ø25 x H14.5
	SKT 813	855A @ 85°C	400...1800	Ø50 x Ø32 x H14.5
	SKT 883	890A @ 85°C	400...1800	Ø58 x Ø36 x H26.5
Axial leaded diodes	SK 6	6A @ 50°C	400...1600	-
	SKa 6	6A @ 50°C	1700...2000	Avalanche
Thyristor modules	SKWT 40	40A @ 90°C	1600...2200	Fast-on or eye terminal

IGBT & Rectifier Modules

MAY 2007



Selector Guide incl.:

Product Overview Tables

Application Overview

Technology Overview

MiniPack 2

NEW

Press-Pack IGBTs

- POWER DEVICES
 - Power MOSFET Discreets
 - RF Power MOSFETs
 - IGBT Discreets
 - >>> IGBT Modules
 - Ultra Fast Rectifiers
 - Silicon Schottky Rectifiers
 - GaAs Schottky Rectifiers
 - SCRs and Thyristors
 - >>> Rectifier Bridges
- ICS AND GATE DRIVERS
 - MOSFET and IGBT Gate Drivers
 - RF Power MOSFETs
 - PWM Controllers
- FUNCTIONAL SOLUTIONS
 - PCF Modules
 - Converter/Brake/Inverter Modules
 - Boost & Buck Power Modules

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**Sales Representatives
and Distributors:
See „Sales Offices“ at
www.ixys.com**

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For further products see main catalog 2006/2007

Please note:

IXYS offers the broadest line of IGBT technology, including our PT line of IGBT's that we introduced in 1986, which we improved on.

Please refer to factory for your special requirement of our Fast PT IGBT based products.

IGBT & Rectifier Modules Catalog, Edition 2007

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Note

As far as patents or other rights of third parties are concerned, liability is only assumed for components per se, not for applications, processes and circuits implemented with components or assemblies. The information describes the type of component and shall not be considered as assured characteristics. Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability. Terms of delivery and rights to change design or specifications are reserved. Changes have been made to earlier published specifications. The data herein supersedes all previously published informations.

Life support applications

IXYS products used in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury must be expressly authorized for such purposes.

QA and Environmental Management Systems

Certificates



ISO 9001:2000



ISO/TS 16949:2002
(includes ISO 9001:2000)
ISO 14001:2004



ISO 9001:2000



ISO 9001:2000



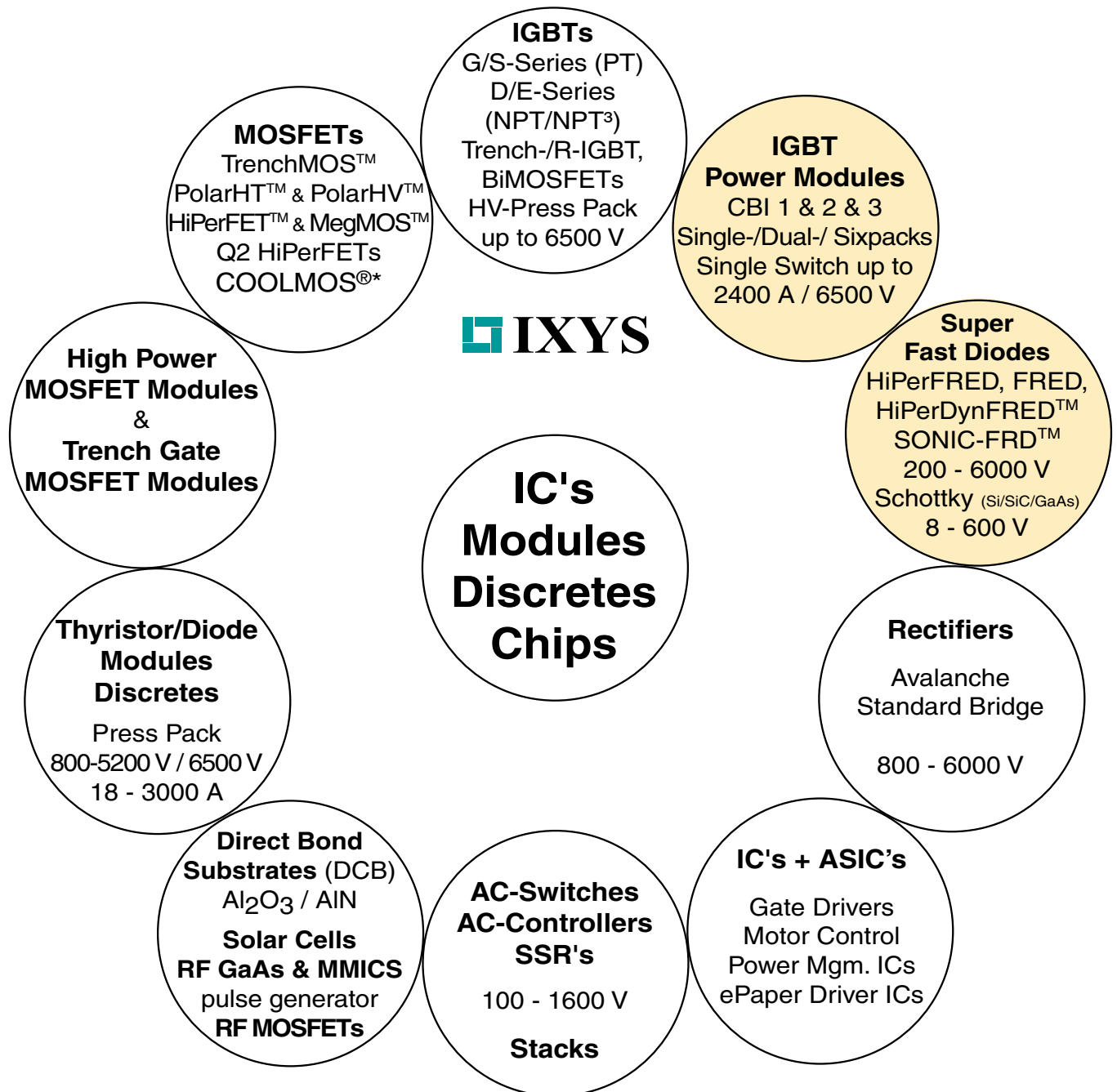
BS EN 9001:2000



ISO 9001:2000



IXYS Product Portfolio



* COOLMOS is a trademark of Infineon Technologies AG.

Symbols and Terms

Nomenclature

(-)di/dt	Rate of change of current
E_{off}	Turn-off energy per pulse
E_{on}	Turn-on energy per pulse
I_C	Collector current
I_{CES}	Leakage current
I_{GES}	Gate - emitter leakage current
I_{C25}	Continuous DC collector current at $T_C = 25^\circ\text{C}$
I_{C90}	Continuous DC collector current at $T_C = 90^\circ\text{C}$
I_{CM}	Maximum pulsed collector current in on state
I_{DAV}	Average DC output current (rectifier output)
$I_{D(AV)M}$	Maximum average DC output current
I_F	Forward current (diode)
I_{FAV}	Average forward current
I_{FSM}	Maximum surge forward current
I_{RM}	Maximum reverse recovery current
I^2t	I^2t value for fusing
NTC	Thermistor
Q_r	Reverse recovery charge
r_T, R_0	Slope resistance (for power loss calculation)
R_{thJC}	Thermal resistance junction to case
$R_{thJK}; R_{thJH}$	Thermal resistance junction to heatsink
T_C	Case temperature
$T_{Jmax}; T_{VJM}$	Maximum virtual junction temperature
t_{rr}	Reverse recovery time
$V_{CE(sat)}$	Collector emitter saturation voltage
V_{CES}	Collector emitter voltage
V_{RRM}	Maximum repetitive reverse voltage
V_{T0}, V_0	Threshold voltage (for power loss calculation)
$V_{GE(th)}$	Threshold voltage

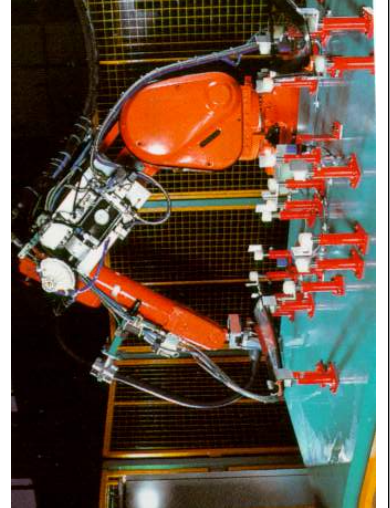
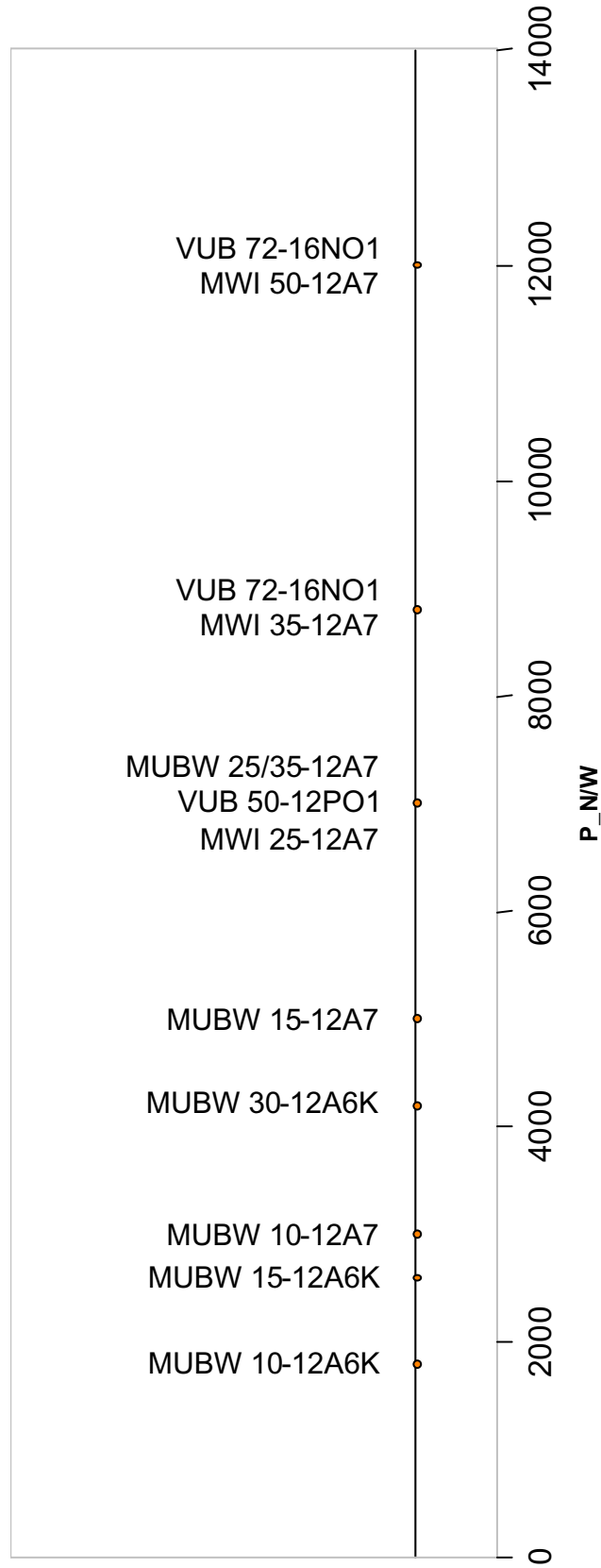
IGBT Modules			
M	W	I 100 -12	T 8 T (Example)
F			ISOPLUS-I4
M			Module
V			Module
	C		Thyristor
	D		Diode
	I		IGBT with SCSOA capability
	M		MOSFET
	W		Three phase bridge
	U		Uncontrolled 3 phase input rectifier
	C		Thyristor
	D		Diode
	I		IGBT with SCSOA capability
	K		Common cathode
	M		MOSFET
	O		No meaning. Reserved for future function
	BW		Brake chopper and IGBT sixpack
		100	Current rating 100 = 100 A
		-12	Voltage class, 12 = 1200 V
			A NPT IGBT
			E NPT ³ IGBT
			F Fast NPT IGBT
			G PT IGBT
			T Trench IGBT
			6K E1 Package
			7 E2 Package
			8 E3 Package
			9 E+ Package
			10 High Power Module
			11 High Power Module with enlarged clearance and creepage distance
			T NTC temperature sensor

New nomenclature								
M	I	AA	10	WB	600	T	MH	Example
M								Module
	I							IGBT
		AA						NPT
		TA						Trench standard version
		TB						Trench fast version
			10					Current
				W				Six-Pack
				WB				Six-Pack with 3~ bridge and brake
				WD				Six-Pack with 1~ bridge
				WE				Six-Pack with 1~ bridge and brake
				WF				Six-Pack with 3~ bridge
					600			Voltage
						T		NTC inside
							MH	MiniPack 2 housing

Product Overview

CBI-Modules 1200 V

Estimation of typ. nom. power of the drive connection to 230/400 V 3~



Product Overview

Sixpack Modules

I _{C80} [A]	NPT	NPT ³	SPT ⁺	Trench IGBT	PT IGBT	Package
➤ New						
600 V						
41					MWI 60 - 06 G6K	E1
30	MWI 30 - 06 A7(T)					E2
50	MWI 50 - 06 A7(T)					
60	MWI 75 - 06 A7(T)					
88	MWI 100 - 06 A8 (T)					E3
115	MWI 150 - 06 A8 (T)					
155	MWI 200 - 06 A8 (T)					
1200 V						
13	MWI 15 - 12 A6K					E1
21		➤ MWI 30 - 12 E6K			MWI 45 - 12 T6K	
31						
36		➤ MWI 50 - 12 E6K				
41					MWI 60 - 12 T6K	
56					MWI 80 - 12 T6K	
20	MWI 15 - 12 A7					E2
35	MWI 25 - 12 A7(T)	MWI 25 - 12 E7				
44	MWI 35 - 12 A7(T)				MWI 50-12T7T*	
50						
60	MWI 50 - 12 A7(T)				MWI 75-12T7T*	
62		MWI 50 - 12 E7				
75						E3
75					MWI 75-12T8T*	
85	MWI 75 - 12 A8 (T)					
90		MWI 75 - 12 E8				
100					MWI 100-12T8T*	
110	MWI 100 - 12 A8 (T)					
115		MWI 100 - 12 E8				E9
150					MWI 150-12T8T*	
250		➤ MWI 225 - 12 E9				
375		➤ MWI 300 - 12 E9				
440		➤ MWI 450 - 12 E9				
1700 V						
235		➤ MWI 225 - 17 E9				E9
350		➤ MWI 300 - 17 E9				
440			➤ MWI 451 - 17 E9			

* different pin-out compared to NPT and NPT³ modules

Product Overview

CBI Modules

I_{C80} [A]	NPT	NPT ³	Trench Standard	Trench Fast	Package
➤ New					
600 V					
13	➤ MIAA10WB600TMH				MiniPack2
16	➤ MIAA15WB600TMH				
20	➤ MIAA20WB600TMH				
27	➤ MIAA30WB600TMH				
8	MUBW 10 - 06 A6K				E1
14	MUBW 15 - 06 A6K				
17	MUBW 20 - 06 A6K				
21	MUBW 25 - 06 A6K				
29	MUBW 35 - 06 A6K				
15	MUBW 10 - 06 A7				E2
18	MUBW 15 - 06 A7				
25	MUBW 20 - 06 A7				
35	MUBW 30 - 06 A7				
50	MUBW 50 - 06 A8				E3
65	MUBW 75 - 06 A8				
85	MUBW 100 - 06 A8				
1200 V					
11			➤ MITA10WB1200TMH	➤ MITB10WB1200TMH	MiniPack2
17			➤ MITA15WB1200TMH	➤ MITB15WB1200TMH	
13	MUBW 15 - 12 A6K				E1
21	MUBW 30 - 12 A6K	➤ MUBW 30 - 12 E6K			
32			➤ MUBW 45 - 12 T6K		
15	MUBW 10 - 12 A7		➤ MUBW 15-12T7		E2
25	MUBW 15 - 12 A7		➤ MUBW 25-12T7		
35	MUBW 25 - 12 A7				
35	MUBW 35 - 12 A7	MUBW 35 - 12 E7		➤ MUBW 40-12T7	
40					
35	MUBW 35 - 12 A8				E3
50			➤ MUBW 50 - 12 T8		
60	MUBW 50 - 12 A8	MUBW 50 - 12 E8			
75			➤ MUBW 75 - 12 T8		
1700 V					
53			MUBW 50 - 17 T8		E 3
80			MUBW 80 - 17 T8		

Full Bridge Modules (Four Pack)

I_{C80} [A]	NPT	Fast NPT	NPT ³	Trench Standard	Package
600 V					
67				MWI 80 - 06 T6K	E1
45	MKI 50 - 06 A7(T)				E2
67	MKI 65 - 06 A7 (T)				
85	MKI 75 - 06 A7				
1200 V					
45		MKI 50 - 12 F7			E2
62			MKI 50 - 12 E7		
85		MKI 100 - 12 F8			E3
90			MKI 75 - 12 E8		
115			MKI 100 - 12 E8		

Insulated Gate Bipolar Transistor (IGBT) Modules

The IGBT is a combination of bipolar and MOS technologies. The best features of bipolar transistors are merged with the voltage-controlled properties of MOSFETs.

Advantages to the user:

- rugged, short-circuit-proof device (S-series, D-series and E-series)
- operation without protective snubber networks possible
- frequency range to well above 100 kHz
- low switching losses
- compact equipment design
- high efficiency

The IGBT is suitable for numerous applications in power electronics, especially in Pulse Width

Modulated servo and three-phase drives requiring high dynamic range control and low noise. It also can be used in Uninterruptible Power Supplies (UPS), Switch Mode Power Supplies (SMPS), and other power circuits requiring high switch repetition rates. IGBTs improve dynamic performance and efficiency and reduce the level of audible noise. IGBTs are equally suitable in resonant converter circuits. Optimized IGBTs are available for both low conduction loss and low switching loss. See table 1 and 2.

Discrete standard „G“ series IGBTs are characterized by a high control gain, which limits their short-circuit withstand time. Newer „S“, „D“ and „E“ series products utilize newly

developed IGBT chips capable of withstanding up to 10 ms in short-circuit, even with a 15 V gate drive.

A switch is only as good as its companion free-wheeling diode. For this reason, all IGBTs with integrated diodes incorporate ultra-fast-recovery epitaxial diodes (FREDs) with very low reverse recovery charge (Q_{rr}). These same diodes are also available as separate elements for use in IGBT circuits or any other application requiring high diode switching speeds.

The IGBT modules use **Direct Copper Bonded (DCB)** substrates, which consist of an aluminium oxide (Al_2O_3) insulator to which copper is directly bonded using the latest techniques developed by IXYS.

Chip Type	Low V_{CEsat}	Low Switching Losses	R_{thJC}	Short Circuit Rated	Optimized Operation Frequency
Low loss NPT	-	-	++	yes	up to 20 kHz
Fast NPT	--	++	++	yes	up to 30 kHz
NPT ³	o	+	++	yes	10 to 20 kHz
Standard Trench	++	o	+	yes	up to 8 kHz
Fast Trench	++	+	+	yes	up to 12 kHz
PT IGBT	-	+++	++	no/yes	up to 50 kHz
PT IGBT LV*	+++	++++	++	no	up to 200 kHz

IGBT Modules

PT IGBT	punch through IGBT, very low switching losses, someone short circuit rated
PT IGBT LV*	punch through IGBT 250 - 300 V, very fast, low V_{SAT} up to 200 kHz switching, <i>for new products consult factory</i>
NPT IGBT	non-punch through insulated gate bipolar transistor; square RBSOA, short circuit rated
NPT ³ IGBT	improved NPT IGBT <ul style="list-style-type: none"> • reduced V_{cesat} • reduced switching losses • optimized for switching frequencies from 10 kHz up to 25 kHz
Trench IGBT	improved NPT IGBT <ul style="list-style-type: none"> • very low V_{cesat} • reduced switching losses • optimized for switching frequencies up to 10 kHz
SPT+	soft punch through IGBT, improved NPT ³ IGBT

CBI Modules


CBI = Converter Brake Inverter

Rectifier, IGBT brake chopper, three phase IGBT inverter, temperature sensor

* PT IGBT (LV 250 V, 300 V, 600 V) are available too, *consult factory*

Type	Rectifier 3~			Inverter 3~					Brake chopper		
	V_{RRM}	I_{DAVM} $T_H = 80^\circ C$	R_{thJC} typ.	V_{CES}	I_C $T_C = 25^\circ C$	I_C $T_C = 80^\circ C$	$V_{CE(sat)}$ typ.	R_{thJC} typ.	V_{CES}	I_C $T_C = 80^\circ C$	R_{thJC} typ.
	V	A	K/W	V	A	A	V	K/W	V	A	K/W
600 V NPT IGBT											
MIAA10WB600TMH	1600	62	2.1	600	18	13	2.1	1.8	600	13	1.8
MIAA10WF600TMH		62	2.1		18	13	2.1	1.8	no brake chopper included		
MIAA15WB600TMH		62	2.1		23	16	2.1	1.6	600	16	1.6
MIAA20WB600TMH		62	2.1		29	20	2.1	1.3	600	20	1.3
600 V Trench IGBT											
MITA30WB600TMH	1600	90	1.4	600	40	27	1.5	1.4	600	27	1.4
1200 V Trench IGBT											
MITA10WB1200TMH	1600	62	2.1	1200	17	12	1.8	1.9	1200	12	1.9
MITA15WB1200TMH		62	2.1		30	21	1.8	1.1		21	1.1
MITB10WB1200TMH		62	2.1		17	12	1.9	1.85		12	1.85
MITB15WB1200TMH		62	2.1		29	20	1.7	1.2		17	1.6

Type	Rectifier			Inverter					Brake chopper		
	V_{RRM}	I_{DAVM} $T_H = 80^\circ C$	R_{thJC} typ.	V_{CES}	I_C $T_C = 25^\circ C$	I_C $T_C = 80^\circ C$	$V_{CE(sat)}$ typ.	R_{thJC} typ.	V_{CES}	I_C $T_C = 80^\circ C$	R_{thJC} typ.
	V	A	K/W	V	A	A	V	K/W	V	A	K/W
600 V NPT IGBT											
MIAA10WE600TMH	1600	23	2.1	600	18	13	2.1	1.8	600	13	1.8
MIAA10WD600TMH		23	2.1		18	13	2.1	1.8	no brake chopper included		
MIAA15WE600TMH		23	2.1		23	16	2.1	1.6	600	16	1.6
MIAA15WD600TMH		23	2.1		23	16	2.1	1.6	no brake chopper included		
MIAA20WE600TMH		23	2.1		29	20	2.1	1.3	600	20	1.3
MIAA20WD600TMH		23	2.1		29	20	2.1	1.3	no brake chopper included		

Mechanical mounting part		IXKU 5-505

CBI Modules

CBI = Converter Brake Inverter

Rectifier, IGBT brake chopper, three phase IGBT inverter, temperature sensor

Type	Rectifier 3~			Inverter 3~					Brake chopper		
	V_{RRM}	I_{DAVM} $T_H = 80^\circ C$	R_{thJC} typ.	V_{CES}	I_C $T_C = 25^\circ C$	I_C $T_C = 80^\circ C$	$V_{CE(sat)}$ typ.	R_{thJC} typ.	V_{CES}	I_C $T_C = 80^\circ C$	R_{thJC} typ.
	V	A	K/W	V	A	A	V	K/W	V	A	K/W
600 V NPT IGBT											
MUBW 10-06A6K		61	2.1		12	8	2.5	2.8		8	2.8
MUBW 15-06A6K		65	1.9		19	14	2.4	1.7		8	2.8
MUBW 20-06A6K	1600	65	1.9	600	25	17	2	1.5	600	8	2.8
MUBW 25-06A6K		65	1.9		31	21	2.1	1.25		14	1.7
MUBW 35-06A6K		89	1.4		42	29	2.3	0.95		17	1.5
1200 V NPT IGBT											
MUBW 15-12A6K	1600	89	1.4	1200	19	13	3	1.35	1200	13	1.35
MUBW 30-12A6K		89	1.4		30	21	3	0.95		13	1.35
1200 V NPT³ IGBT											
MUBW 30-12E6K	1600	89	1.4	1200	30	21	3.1	0.95	1200	13	1.35
1200 V Trench IGBT											
MUBW 45-12T6K	1600	104	1.1	1200	43	31	2.5	0.8	1200	13	1.35

Type	Rectifier 3~			Inverter 3~					Brake chopper		
	V_{RRM}	I_{DAVM} $T_H = 80^\circ C$	R_{thJC} typ.	V_{CES}	I_C $T_C = 25^\circ C$	I_C $T_C = 80^\circ C$	$V_{CE(sat)}$ typ.	R_{thJC} typ.	V_{CES}	I_C $T_C = 80^\circ C$	R_{thJC} typ.
	V	A	K/W	V	A	A	V	K/W	V	A	K/W
600 V NPT IGBT											
MUBW 10-06A7		18	1.5		20	15	1.9	1.5		15	1.5
MUBW 15-06A7		18	1.5		25	18	1.9	1.3		15	1.5
MUBW 20-06A7	1600	24	1.3	600	35	25	1.9	1	600	18	1.4
MUBW 30-06A7		24	1.3		50	35	1.9	0.7		18	1.3
MUBW 50-06A7		29	1.1		75	50	1.9	0.5		25	1
1200 V NPT IGBT											
MUBW 10-12A7		18	1.5		20	15	2.3	1.2		15	1.2
MUBW 15-12A7		24	1.3		35	25	2	0.7		15	1.2
MUBW 25-12A7	1600	24	1.3	1200	50	35	2.2	0.55	1200	15	1.2
MUBW 35-12A7		29	1.1		50	35	2.5	0.55		25	0.7
1200 V NPT³ IGBT											
MUBW 35-12E7	1600	29	1.1	1200	52	36	2.2	0.55	1200	25	0.7
1200 V Trench IGBT											
MUBW15-12T7		24	1.3		25	15	1.7	1.2		15	1.2
MUBW25-12T7	1600	24	1.3	1200	40	25	1.7	0.8	1200	15	1.2
MUBW40-12T7		80	1.3		62	44	2.0	0.8		25	0.7

CBI Modules

CBI = Converter Brake Inverter

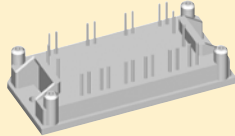
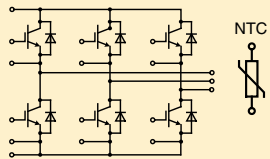
Rectifier, IGBT brake chopper, three phase IGBT inverter, temperature sensor

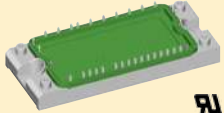
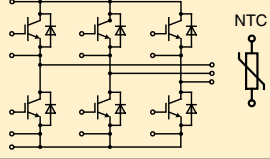
Type	Rectifier 3~			Inverter 3~					Brake chopper		
	V_{RRM} V	I_{DAVM} $T_H = 80^\circ C$ A	R_{thJC} typ. K/W	V_{CES} V	I_C $T_C = 25^\circ C$ A	I_C $T_C = 80^\circ C$ A	$V_{CE(sat)}$ typ. V	R_{thJC} typ. K/W	V_{CES} V	I_C $T_C = 80^\circ C$ A	R_{thJC} typ. K/W
600 V NPT IGBT											
MUBW 50-06A8		40	1.1		75	50	1.9	0.5		25	1
MUBW 75-06A8	1600	46	0.94	600	100	65	2	0.39	600	35	0.75
MUBW 100-06A8		60	0.73		125	85	1.9	0.3		50	0.55
1200 V NPT IGBT											
MUBW 35-12A8	1600	27	1.3	1200	50	35	2.5	0.55	1200	25	0.7
MUBW 50-12A8		46	0.94		85	60	2.2	0.35		35	0.55
1200 V NPT³ IGBT											
MUBW 50-12E8	1600	50	0.94	1200	90	62	1.9	0.35	1200	35	0.55
1200 V Trench IGBT											
MUBW 50-12T8	1600	50	0.94	1200	75	50	1.7	0.45	1200	35	0.55
MUBW 75-12T8		50	0.94		105	75	1.7	0.35		35	0.55
1700 V Trench IGBT											
MUBW 50-17T8	2200	120	1.1	1700	74	53	2.0	0.43	1700	34	0.62
MUBW 75-17T8		140	0.95		113	80	2.0	0.48		34	0.62

Phase-Leg Modules

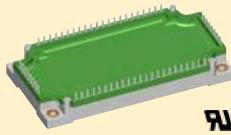
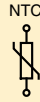
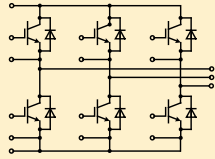
Type	V_{CES} V	I_{C25} A $T_C = 25^\circ C$ IGBT	I_{C80} A $T_C = 80^\circ C$ IGBT	$V_{CE(sat)}$ typ V $T_J = 25^\circ C$ IGBT	E_{off} mJ $T_J = 125^\circ C$ IGBT	R_{thJC} K/W IGBT	I_{F25} A $T_C = 25^\circ C$ diode	I_{F80} A $T_C = 80^\circ C$ diode	Fig.
	➤ New								
1200 V Half Bridge with 3rd generation NPT³									
➤ MII 300-12E4	1200	280	200	2.0	20	0.11	300	190	X130a
➤ MII 400-12E4		420	300	2.2	30	0.08	450	290	
1200 V Boost chopper with 3rd generation NPT³									
➤ MID 400-12E4	1200	420	300	2.2	30	0.08	450	290	X130b
1200 V Buck chopper with 3rd generation NPT³									
➤ MDI 400-12E4	1200	420	300	2.2	30	0.08	450	290	X130c

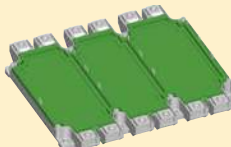
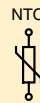
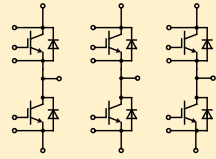
Sixpack configuration

Sixpack IGBT Modules				X111 E1-pack Package style Outline drawings on pages O-1...O-3 See data sheet for pin arrangement						
Type	V_{CES} V	I_{C25} A $T_C = 25^\circ C$ IGBT	I_{C80} A $T_C = 80^\circ C$ IGBT	$V_{CE(sat)}$ typ V $T_J = 25^\circ C$ IGBT	E_{off} mJ $T_J = 125^\circ C$ IGBT	R_{thJC} K/W IGBT	I_{F25} A $T_C = 25^\circ C$ diode	I_{F80} A $T_C = 80^\circ C$ diode	NTC	
600 V PT IGBT										
MWI 60-06G6K	600	60	41	2.3	0.5	0.7	48	33	•	
1200 V NPT IGBT										
MWI 15-12A6K	1200	19	13	3	1.1	1.37	24	16	•	
1200 V NPT³ IGBT										
MWI 30-12E6K	1200	29	21	2.5	1.8	0.95	24	16	•	
MWI 50-12E6K		51	36	2.4	2.6	0.6	49	32	•	
1200 V Trench IGBT										
MWI 45-12T6K	1200	43	31	1.9	3.4	0.8	49	32	•	
MWI 60-12T6K		58	41	1.9	4.8	0.62	49	32	•	
MWI 80-12T6K		80	56	2	6.5	0.46	80	51	•	

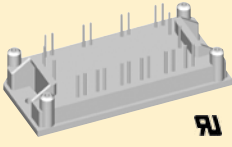
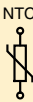
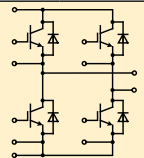
Sixpack IGBT Modules				X112 E2-pack Package style Outline drawings on pages O-1...O-3 See data sheet for pin arrangement						
Type	V_{CES} V	I_{C25} A $T_C = 25^\circ C$ IGBT	I_{C80} A $T_C = 80^\circ C$ IGBT	$V_{CE(sat)}$ typ V $T_J = 25^\circ C$ IGBT	E_{off} mJ $T_J = 125^\circ C$ IGBT	R_{thJC} K/W IGBT	I_{F25} A $T_C = 25^\circ C$ diode	I_{F80} A $T_C = 80^\circ C$ diode	NTC	
600 V NPT IGBT										
MWI 30-06A7	600	45	30	1.9	1	0.88	36	24	•	
MWI 30-06A7T		45	30	1.9	1	0.88	36	24		
MWI 50-06A7		75	50	1.9	1.7	0.55	72	45		
MWI 50-06A7T		75	50	1.9	1.7	0.55	72	45		
MWI 75-06A7		90	60	2.1	2.5	0.44	140	85		
MWI 75-06A7T		90	60	2.1	2.5	0.44	140	85		
1200 V NPT IGBT										
MWI 15-12A7	1200	30	20	1	1.8	0.88	25	17	•	
MWI 25-12A7		50	35	2.2	2.8	0.55	50	33		
MWI 25-12A7T		50	35	2.2	2.8	0.55	50	33		
MWI 35-12A7		62	44	2.2	4.2	0.44	50	33		
MWI 35-12A7T		62	44	2.2	4.2	0.44	50	33		
MWI 50-12A7		85	60	2.2	5.6	0.35	110	70		
MWI 50-12A7T		85	60	2.2	5.6	0.35	110	70		
1200 V NPT³ IGBT										
MWI 25-12E7	1200	52	36	1.9	2.5	0.55	50	33	•	
MWI 50-12E7		90	62	2.1	4	0.35	110	70		
1200 V Trench IGBT										
MWI 50-12T7T	1200	75	50	1.7	6.5	0.49	110	70	•	
MWI 75-12T7T		105	75	1.7	9.5	0.35	150	100		

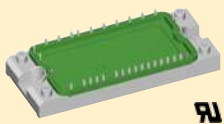
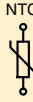
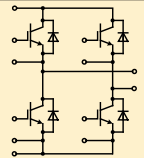
Sixpack configuration

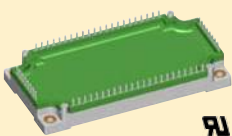
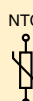
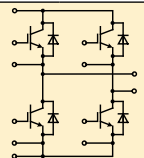
Sixpack IGBT Modules				X113 E3-pack Package style Outline drawings on pages O-1...O-3 See data sheet for pin arrangement					
Type	V_{CES} V	I_{C25} A $T_C = 25^\circ C$ IGBT	I_{C80} A $T_C = 80^\circ C$ IGBT	$V_{CE(sat)}$ typ V $T_J = 25^\circ C$ IGBT	E_{off} mJ $T_J = 125^\circ C$ IGBT	R_{thJC} K/W IGBT	I_{F25} A $T_C = 25^\circ C$ diode	I_{F80} A $T_C = 80^\circ C$ diode	NTC
600 V NPT IGBT									
MWI 100-06A8	600	130	88	2	2.9	0.3	140	88	
MWI 100-06A8T		130	88	2	2.9	0.3	140	88	•
MWI 150-06A8		170	115	2	4.6	0.24	210	130	
MWI 150-06A8T		170	115	2	4.6	0.24	210	130	•
MWI 200-06A8		215	155	2	6.3	0.18	260	165	
MWI 200-06A8T		215	155	2	6.3	0.18	260	165	•
1200 V NPT IGBT									
MWI 75-12A8	1200	125	85	2.2	10.5	0.25	150	100	
MWI 75-12A8T		125	85	2.2	10.5	0.25	150	100	•
MWI 100-12A8		160	110	2.2	14.6	0.19	200	130	
MWI 100-12A8T		160	110	2.2	14.6	0.19	200	130	•
1200 V NPT³ IGBT									
MWI 75-12E8	1200	130	90	2	7.5	0.25	150	100	
MWI 100-12E8		165	115	2	10.0	0.19	200	130	
1200 V Trench IGBT									
MWI 75-12T8T	1200	100	75	1.7	9.5	0.35	150	100	•
MWI 100-12T8T		140	100	1.7	12.0	0.26	200	130	•
MWI 150-12T8T		200	150	1.7	17.0	0.18	tbd	tbd	•

Sixpack IGBT Modules				X114 E9-pack Package style Outline drawings on pages O-1...O-3 See data sheet for pin arrangement					
Type	V_{CES} V	I_{C25} A $T_C = 25^\circ C$ IGBT	I_{C80} A $T_C = 80^\circ C$ IGBT	$V_{CE(sat)}$ typ V $T_J = 25^\circ C$ IGBT	E_{off} mJ $T_J = 125^\circ C$ IGBT	R_{thJC} K/W IGBT	I_{F25} A $T_C = 25^\circ C$ diode	I_{F80} A $T_C = 80^\circ C$ diode	NTC
1200 V NPT³ IGBT									
MWI 225-12E9	1200	355	250	2.1	20	0.09		205	•
MWI 300-12E9		530	375	2	30	0.06		300	•
MWI 450-12E9		640	440	2.2	45	0.057		450	•
1700 V NPT³ IGBT									
MWI 225-17E9	1700	335	235	2.5	54	0.085		200	•
MWI 300-17E9		500	350	2.3	80	0.057		290	•
1700 V SPT⁺ IGBT									
MWI 451-17E9	1700	580	475	2.25	90	0.057		450	•

Full Bridge configuration

Full Bridge IGBT Modules				X111 E1-pack Package style Outline drawings on pages O-1...O-3 See data sheet for pin arrangement			 		
Type	V_{CES} V	I_{C25} A $T_C = 25^\circ\text{C}$ IGBT	I_{C80} A $T_C = 80^\circ\text{C}$ IGBT	$V_{CE(sat)}$ typ V $T_J = 25^\circ\text{C}$ IGBT	E_{off} mJ $T_J = 125^\circ\text{C}$ IGBT	R_{thJC} K/W IGBT	I_{F25} A $T_C = 25^\circ\text{C}$ diode	I_{F80} A $T_C = 80^\circ\text{C}$ diode	NTC
600 V Trench IGBT									
➤ MKI 80-06T6K	600	89	67	1.8	2.8	0.6	105	67	•

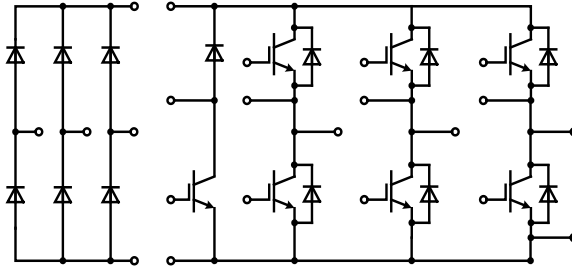
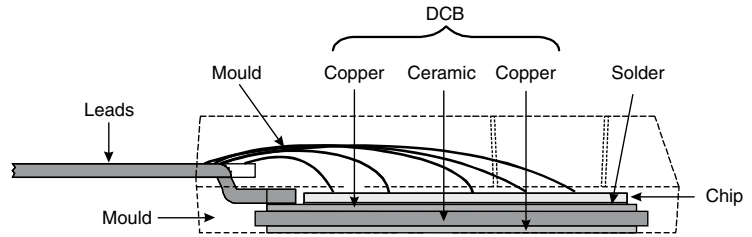
Full Bridge IGBT Modules				X112 E2-pack Package style Outline drawings on pages O-1...O-3 See data sheet for pin arrangement			 		
Type	V_{CES} V	I_{C25} A $T_C = 25^\circ\text{C}$ IGBT	I_{C80} A $T_C = 80^\circ\text{C}$ IGBT	$V_{CE(sat)}$ typ V $T_J = 25^\circ\text{C}$ IGBT	E_{off} mJ $T_J = 125^\circ\text{C}$ IGBT	R_{thJC} K/W IGBT	I_{F25} A $T_C = 25^\circ\text{C}$ diode	I_{F80} A $T_C = 80^\circ\text{C}$ diode	NTC
600 V NPT IGBT									
MKI 50-06A7		72	50	1.9	1.7	0.55	72	45	•
MKI 50-06A7T		72	50	1.9	1.7	0.55	72	45	•
➤ MKI 65-06A7T	600	100	67	2.0	2.3	0.39	140	85	•
MKI 75-06A7		90	60	2.5	6.3	0.44	140	85	•
MKI 75-06A7T		90	60	2.5	6.3	0.44	140	85	•
1200 V Fast NPT IGBT									
MKI 50-12F7	1200	65	45	3.2	2.5	0.35	110	70	
1200 V NPT³ IGBT									
MKI 50-12E7	1200	90	62	1.9	4.0	0.35	110	70	

Full Bridge IGBT Modules				X113 E3-pack Package style Outline drawings on pages O-1...O-3 See data sheet for pin arrangement			 		
Type	V_{CES} V	I_{C25} A $T_C = 25^\circ\text{C}$ IGBT	I_{C80} A $T_C = 80^\circ\text{C}$ IGBT	$V_{CE(sat)}$ typ V $T_J = 25^\circ\text{C}$ IGBT	E_{off} mJ $T_J = 125^\circ\text{C}$ IGBT	R_{thJC} K/W IGBT	I_{F25} A $T_C = 25^\circ\text{C}$ diode	I_{F80} A $T_C = 80^\circ\text{C}$ diode	NTC
1200 V Fast NPT IGBT									
MKI 100-12F8	1200	65	45	3.2	2.5	0.35	110	70	
1200 V NPT³ IGBT									
MKI 75-12E8	1200	130	90	2.0	7.5	0.25	150	100	
MKI 100-12E8		150	115	2.0	10	0.19	200	130	

IXYS ISOPLUS Technology

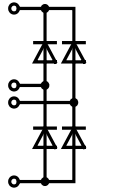
DCB base plate

- 2500 V electrical isolation
- low thermal resistance
- increased power & temperature cycling
- saves space
- replaces multiple discretes
- reduces parasitic inductance and capacitance
- reduces EMI
- heat spreading

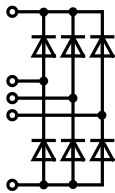


Rectifier Bridge

FBO 16-12N
FBO 40-12N

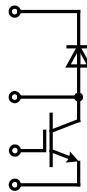


FUO 22-12N
FUO 22-16N
FUO 50-16N



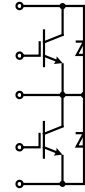
Brake (Boost)

FID 35-06C
FID 36-06D
FID 60-06D



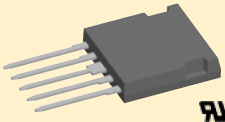
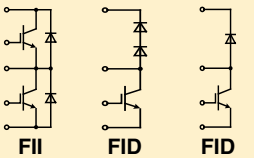
Converter (3x phaseleg)

FII 30-06D
FII 40-06D
FII 30-12E
FII 50-12E



* PT IGBT LV available too
(inquire factory)

Building blocks for your ideal converter

ISOPLUS i4-PAC™						
Package		 X024a Package style Outline drawings on pages O-1...O-4		 FII FID FID HiPerDyn HiPerFRED		
Type	Configu-ration	Technology	V_{RRM} / V_{CES} V	I_{C25} @ 25°C A	$I_{D(AV)M} / I_{C80}$ @ 90°C A	$V_{CE(sat)}$ typ. $T_C = 25°C$ V
FBO 16-12N FBO 40-12N	1~	Rectifier Bridge	1200		22 40	
FUO 22-12N FUO 22-16N FUO 50-16N	3~	Rectifier Bridge	1200 1600 1600		27 27 50	
FID 35-06C FID 36-06D FID 60-06D	boost	NPT IGBT & HiPerDynFRED NPT IGBT & HiPerFRED NPT IGBT & HiPerFRED	600	38 38 65	24 24 40	1.9 1.9 1.6
FII 30-06D FII 40-06D FII 30-12E FII 50-12E	phaseleg	NPT IGBT NPT IGBT NPT ³ IGBT NPT ³ IGBT	600 600 1200 1200	30 40 32 50	18 25 20 32	1.9 1.8 2.4 2.0

Thyristor / Diode Modules

One of the essential advantages of power semiconductor modules compared to discrete designs is the electrical isolation between the baseplate of the module and the parts subject to voltage (3.6 kV_{RMS} tested). This makes possible the mount-down of any number of the same or different modules on a common heatsink. It is feasible to use standard housings with appropriate accessories for designing compact power converter operating from AC mains up to 690 V.

Plastic Housing with DCB Substrate

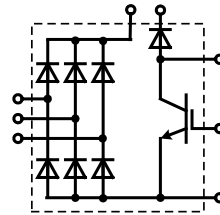
IXYS has succeeded in simplifying the conventional multilayer module construction by the DCB (Direct Copper Bonding) technique.

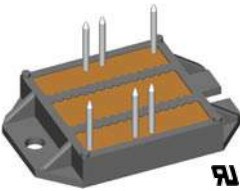
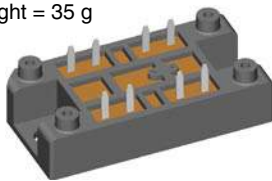
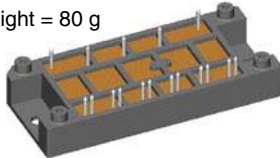
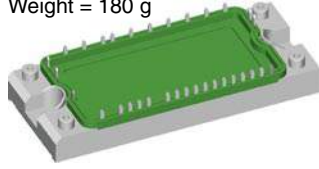
Other features are:

- top-side electrical terminals with captured nuts;
- series-connected diode/diode, thyristor/diode and thyristor/thyristor modules;
- easy assembly.

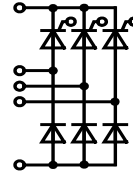
All thyristor modules with DCB ceramic base contacts are available in volume with two standardized twin plugs (2.8 mm x 0.8 mm) for gate and auxiliary cathode control terminals (version 1). Modules in TO-240 housing of the version 8 are delivered with gate plugs only (without auxiliary cathode terminal; mounting screws available on request). The module housing is designed for adequate clearance and creepage distance resulting in recognition by Underwriters Laboratories, Inc., USA for all types.

3~ Rectifier Bridges with IGBT and Diode for Brake Unit

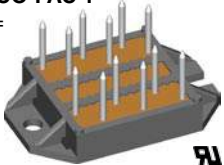
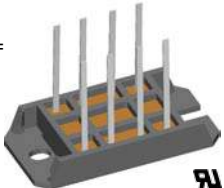
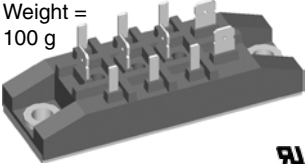


Type	Rectifier			IGBT		fast Diode			Fig. No.	Package style	
	V _{RRM} V	I _{dAV} @ T _C A	°C	V _{CES} V	I _{C80} A	V _{RRM} V	I _{F(AV)} A	t _{rr} ns			
VUB 50-12PO1 VUB 50-16PO1	1200 1600	56	100	1200	14	1200	10	110	X102	X102 ECO-PAC 2 Weight = 24 g See data sheet for pin arrangement 	
VUB 72-12NO1 VUB 72-16NO1	1200 1600	110	80	1200	35	1200	15	130	X103		
VUB 116-16NO1	1600	116	100	1200	67	1200	27	40	X112		
VUB 120-12NO2 VUB 120-16NO2	1200 1600	188	80	1200	100	1200	32	40	X104		
VUB 135-16NO1	2200	135	100	1700	50	1800	50	40	X112		
VUB 145-16NO1	1600	145	100	1200	100	1200	27	40			
VUB 160-12NO2 VUB 160-16NO2	1200 1600	188	80	1200	125	1200	34	40	X104		X103 V1-Package Weight = 35 g 
<h2>3~ Half Controlled Rectifier Bridges with IGBT and Diode for Brake Unit</h2>											X104 V2-Package Weight = 80 g 
											X112 V2-Package Weight = 180 g 
VVZB 120-12io1 VVZB 120-16io1	1200 1600	120	80	1200	100	1200	27	40	X104		
VVZB 135-16NO1 VVZB 170-16NO1	1600	135 170	85		67 100				X112		

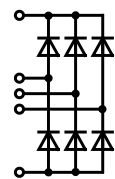
3~ Rectifier Bridges

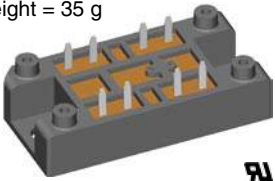
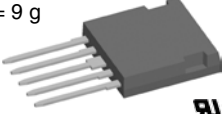


3~ Half Controlled Rectifier Bridges, B6HK

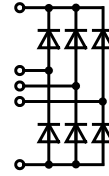
Type	V_{RRM}	V_{VRMS}	I_{dAV} $T_H = 100^\circ\text{C}$	I_{FSM} 45°C 10 ms	V_{T0}	r_T	T_{VJM}	R_{thJC} per Chip	R_{thJH} per Chip	Fig. No.	Package style Outline drawings on pages O-5...O-17							
	V	V	A	A	V	mΩ	°C	K/W	K/W									
VVZ 12-12io1 VVZ 12-14io1 VVZ 12-16io1	1200 1400 1600	400 440 500	15	110	1.1	30	125	2.5	3.1	X106a	X101 ECO-PAC 1 Weight = 19 g 							
VVZ 24-12io1 VVZ 24-14io1 VVZ 24-16io1	1200 1400 1600	400 440 500										21	300	1	16	125	2.1	2.7
VVZ 39-08ho7 VVZ 39-12ho7	800 1200	250 400																
VVZ 40-12io1 VVZ 40-14io1 VVZ 40-16io1	1200 1400 1600	400 440 500	34	320	0.85	15	125	1.0	1.6	X106a Weight = 28 g 								
VVZ 70-08io7 VVZ 70-12io7 VVZ 70-14io7 VVZ 70-16io7	800 1200 1400 1600	250 400 440 500									70 $T_C = 85^\circ\text{C}$	550	0.85	11	125	0.9	1.1	X118c Weight = 100 g 
VVZ 110-12io7 VVZ 110-14io7	1200 1400	400 440																
VVZ 175-12io7 VVZ 175-14io7 VVZ 175-16io7	1200 1400 1600	400 440 500	167 $T_C = 85^\circ\text{C}$	1500	0.85	3.5	125	0.46	0.55									

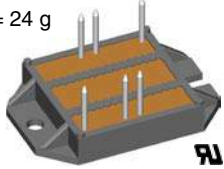
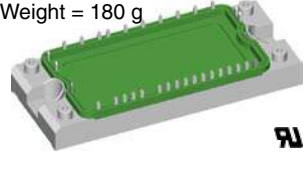
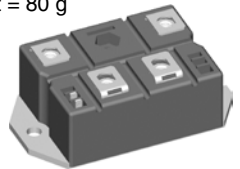
3~ Rectifier Bridges, B6U



Type	V_{RRM}	V_{VRMS}	I_{dAV}	T_C	I_{FSM} 45°C 10 ms	V_{T0}	r_T	T_{VJM}	R_{thJC} per Chip	R_{thJH} per Chip	Fig. No.	Package style Outline drawings on pages O-5...O-17																										
	V	V	A	°C	A	V	mΩ	°C	K/W	K/W																												
VUO 16-08NO1 VUO 16-12NO1 VUO 16-14NO1 VUO 16-16NO1 VUO 16-18NO1	800 1200 1400 1600 1800	250 400 440 500 575	15	$T_H = 90^\circ\text{C}$	100	0.8	50	130	-	4.5	X103	X103 V1-Package Weight = 35 g 																										
FUO 22-12N FUO 22-16N	1200 1600	400 500											22	$T_H = 90^\circ\text{C}$	100	0.83	28	150	4	5	X024a																	
VUO 22-08NO1 VUO 22-12NO1 VUO 22-14NO1 VUO 22-16NO1 VUO 22-18NO1	800 1200 1400 1600 1800	250 400 440 500 575																				27 90	100	0.83	28	150	4	5	X024a									
VUO 34-08NO1 VUO 34-14NO1 VUO 34-16NO1 VUO 34-18NO1	800 1400 1600 1800	250 440 500 575																												36	300	0.8	15	130	-	2.5	X103	X024a V1-Package ISOPLUS i4-PAC™ Weight = 9 g 
FUO 50-16N	1600	500																																				

3~ Rectifier Bridges, B6U



Type	V_{RRM}	V_{VRMS}	I_{dAV}	T_C	I_{FSM} 45°C 10 ms	V_{TO}	r_T	T_{VJM}	R_{thJC} per Chip	R_{thJH} per Chip	Fig. No.	Package style
	V	V										
VUO 52-08NO1	800	250	54	$T_H = 90^\circ C$	350	0.8	12.5	130	-	1.5	X103	X101 ECO-PAC 1 Weight = 19 g 
VUO 52-12NO1	1200	400										
VUO 52-14NO1	1400	440										
VUO 52-16NO1	1600	500										
VUO 52-18NO1	1600	500										
VUO 52-20NO1	1800	575										
VUO 68-08NO7	800	250	68	100	300	0.8	13	150	1.1	1.6	X101	See data sheet for pin arrangement X102 ECO-PAC 2 Weight = 24 g 
VUO 68-12NO7	1200	400										
VUO 68-14NO7	1400	440										
VUO 68-16NO7	1600	500										
VUO 80-08NO1	800	250	82	$T_H = 90^\circ C$	600	0.8	7.5	150	-	1.42	X103	See data sheet for pin arrangement X103 V1-Package Weight = 35 g 
VUO 80-12NO1	1200	400										
VUO 80-14NO1	1400	440										
VUO 80-16NO1	1600	500										
VUO 80-18NO1	1800	575										
VUO 86-08NO7	600	125	86	90	530	0.8	7.5	150	1.2	1.5	X101	X104 V2-Package Weight = 80 g 
VUO 86-12NO7	1200	400										
VUO 86-14NO7	1400	440										
VUO 86-16NO7	1600	500										
VUO 98-08NO7	800	250	95	85	750	0.8	6	150	1.2	1.5	X102	X118d Weight = 80 g 
VUO 98-12NO7	1200	400										
VUO 98-14NO7	1400	440										
VUO 98-16NO7	1600	500										
VUO 100-08NO7	800	250	100	100	1000	0.8	5	150	1.12	1.5	X118d	X112 Weight = 180 g 
VUO 100-12NO7	1200	400										
VUO 100-14NO7	1400	440										
VUO 100-16NO7	1600	500										
VUO 120-12NO1	1200	1200	121	75	650	0.8	6.1	150	1	1.3	X104	X123a/c Weight = 80 g 
VUO 120-16NO1	1600	1600										
VUO 121-16NO1	1600	575	118	100	650	0.8	5	150	0.8	0.9	X112	
VUO 122-08NO7	800	250	117	100	900	0.8	4	150	0.85	1.15	X102	
VUO 122-12NO7	1200	400										
VUO 122-14NO7	1400	440										
VUO 122-16NO7	1600	500										
VUO 122-18NO7	1800	575										
VUO 155-12NO1	1200	1200	157	75	850	0.75	4.6	150	0.8	1.1	X104	
VUO 155-16NO1	1600	1600										
VUO 160-08NO7	800	250	175	90	1800	0.8	3	150	0.65	0.83	X123a	
VUO 160-12NO7	1200	400										
VUO 160-14NO7	1400	440										
VUO 160-16NO7	1600	500										
VUO 160-18NO7	1800	575										
VUO 190-08NO7	800	250	248	110	2800	0.8	2.2	150	0.45	0.6	X123c	
VUO 190-12NO7	1200	400										
VUO 190-14NO7	1400	440										
VUO 190-16NO7	1600	500										
VUO 190-18NO7	1800	575										

Product Overview

Press-Pack IGBTs (T Types) 1.7kV, 2.5kV, and 4.5kV 160A to 2500A

		TX116TA17E	2500A
T2400GA45E			2400A
		TX115TA16A	1900A
T1800GA45A			1800A
T1500EA45E	T1500TA25E		1500A
	T1200TA25A		1200A
T0900EA45A			900A
T0800TA45A		TX167NA17E	800A
T0600TA45A		TX168NA17A	600A
	T0500NA25E		500A
	T0360NA25A		360A
T0240NA45E			240A
T0160NA45A			160A
4.5kV	2.5kV	1.7kV	



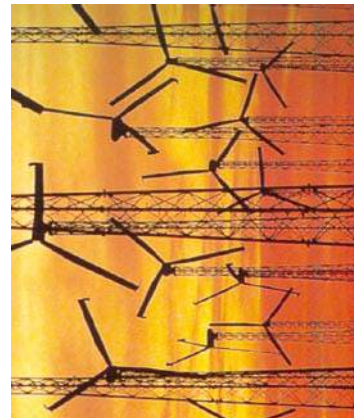
HSR-350X - Korean Rail



E10 Shunting Locomotive - Polish Rail



Induction Heating



Wind Power

Press-Pack IGBTs - 1.7kV, 2.5kV and 4.5kV

As a pioneer of Press-Pack IGBT technology, we are able to offer a range of class leading devices with voltage ratings of 2.5kV (1.25kV DC link), 4.5kV (2.8kV DC link) and 1.7kV.

The construction of these devices is totally free from wire and solder bonds which all but eliminates the problems of mechanical fatigue associated with conventional modules. Internal stray inductance in both the gate connections and emitter connections is vastly reduced when compared to conventional modules leading to improved ruggedness and short circuit behaviour, which is further enhanced by direct cooling of the emitter side of the chip. Double sided cooling allows full use of the nominal rated collector current without derating of voltage or frequency.

Devices are available with or without integral anti-parallel diode – a range of complementary HP Sonic-FRDs™ optimised for use with these IGBTs are outlined below.

The press pack construction offers several advantages over conventional IGBT modules:

- exceptional power cycling performance – typically an order of magnitude better than modules – making them highly suited to applications such as transportation and induction heating where there are repeated cyclic power demands.
- high rupture ratings making them a good choice in critical applications such as transportation applications, mining, and the petro-chemical industry.
- stable short circuit failure mode which, as well as safety benefits, makes them an ideal choice for medium and high voltage applications where series connection is required. Press-pack construction is the obvious choice where series connection is needed and the short circuit failure mode allows for the design in of n+1 redundancy. Typical examples include medium voltage drives, HVDC, and active VAR controllers.



- largely backwardly compatible with standard 2.5kV and 4.5kV Gate Turn-Off thyristors (including GCTs) in many applications such as transportation and AC drives. This makes these parts a simple and economical path to upgrade or refurbish equipment that previously used Gate Turn-Off thyristors, such as locomotives or medium voltage drives.
- suitable for all cooling options including direct liquid immersion.

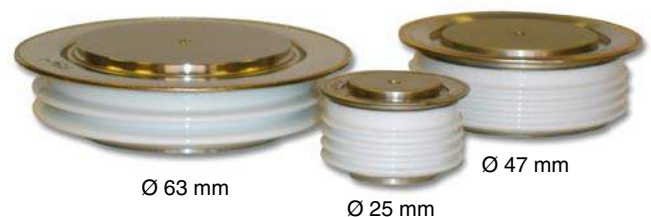
Complementary gate drives (shown on Page 15), mounting clamps and passive components are available by contacting the UK Factory.

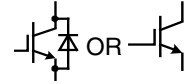
HP Sonic-FRDs

Anti-parallel Diodes for IGBTs and IGCTs - 1.7kV to 4.5kV

New world-leading class of ultra fast and ultra soft recovery diode available from 1.7kV to 4.5kV in current ratings from 300 to 2500A.

These high power super fast, soft recovery diodes incorporate a unique manufacturing process and novel lifetime control to offer a class leading trade-off between conduction and switching losses. Their exceptionally wide safe operating area (SOA) makes them the number one choice for freewheeling diodes for snubberless IGBT and IGCT applications. In fact, most applications which require a fast, low loss diode can benefit from this new technology - for example, traction, medium voltage drives, induction heating and pulsed power applications.



Press-Pack IGBTs

Type Part No.	V_{CES} V	I_C A	I_{CM} A	$V_{CE(sat)}$ $I_F = I_C$ V	IGBT Switching Typical		V_F $I_F = I_C$ V	Diode Recovery Typical			T_{jmax} °C	R_{thJK}		Fig. No.
					E_{ON} J	E_{OFF} J		I_{rm} A	t_{rr} µs	Q_r µC		IGBT K/W	Diode K/W	
➤ New	V	A	A	V	J	J	V	A	µs	µC	°C	K/W	K/W	
T0160NA45A	4500	160	310	4.6	0.50	0.42	3.8	400	0.96	340	125	0.058	0.095	W40
T0240NA45E	4500	240	400	4.7	0.73	0.88	N/A	N/A	N/A	N/A	125	0.042	N/A	W40
T0360NA25A	2500	360	720	3.6	0.75	0.34	2.1	250	0.93	285	125	0.054	0.087	W40
T0500NA25E	2500	500	1000	3.6	0.80	0.50	N/A	N/A	N/A	N/A	125	0.039	N/A	W40
T0600TA45A	4500	600	1000	4.7	1.75	1.50	3.6	1400	0.92	650	125	0.016	0.039	W41
T0800TA45E	4500	800	1500	4.6	2.20	1.92	N/A	N/A	N/A	N/A	125	0.012	N/A	W41
T0900EA45A	4500	900	1500	4.6	2.80	2.60	3.6	1800	0.85	800	125	0.014	0.026	W44
T1200TA25A	2500	1200	2400	3.6	2.50	1.40	2.5	670	1.50	830	125	0.017	0.029	W41
T1200EA45E	4500	1200	2100	4.6	3.20	3.80	N/A	N/A	N/A	N/A	125	0.010	N/A	W44
T1500TA25E	2500	1500	3000	3.6	3.30	1.70	N/A	N/A	N/A	N/A	125	0.013	N/A	W41
➤ T1800GA45A	4500	1800	3000	4.7	5.60	6.40	3.6	2150	2.20	3500	125	0.008	0.014	W45
➤ T2400GA45E	4500	2400	4200	4.7	7.20	7.80	N/A	N/A	N/A	N/A	125	0.005	N/A	W45
• TX168NA17A	1700	600	900	4.0	• Products Under Development							0.054	0.073	W40
• TX167NA17E	1700	840	1260	4.0								0.039	N/A	W40
• TX115TA17A	1700	1900	2850	4.0								0.017	0.029	W41
• TX116TA17E	1700	2500	3750	4.0								0.013	N/A	W41

Press-Pack IGBT Outlines on page O - 5

HP Sonic-FRDs™

Type Part No.	Old Part No.	V_{RRM} V	I_{FAV} $T_K = 55^\circ C$ A	I_{FSM} 10 ms ½ sine A	I^2t $V_R \leq 60\% V_{RRM}$ A ² s	Typ. Reverse Recovery Parameters					V_{T0} V	r_T mΩ	T_{jmax} °C	R_{thJK} 180° Sine K/W	Fig. No.
						I_{rm} A	t_{rr} µs	Q_r µC	@ I_{FM} A	@-di/dt A/µs					
➤ New		V	A	A	A ² s	A	µs	µC	A	A/µs	V	mΩ	°C	K/W	
E0300YH400	N/A	4000	277	2630	34.58x10 ³	605	0.75	245	300	2000	2.170	3.800	150	0.073	W3
E0300YH450	N/A	4500	277	2630	34.58x10 ³	605	0.75	245	300	2000	2.170	3.800	150	0.073	W3
E0400YH200	N/A	2000	348	3542	62.7x10 ³	572	0.74	175	400	1500	1.770	2.290	150	0.073	W3
E0400YH250	N/A	2500	348	3542	62.7x10 ³	572	0.74	175	400	1500	1.770	2.290	150	0.073	W3
E0900NC400	N/A	4000	969	15270	1.17x10 ⁶	1340	2.20	1440	900	2000	2.140	1.150	150	0.020	W5
E0900NC450	N/A	4500	969	15270	1.17x10 ⁶	1340	2.20	1440	900	2000	2.140	1.150	150	0.020	W5
E1500NC200	N/A	2000	1557	15180	1.15x10 ⁶	1450	2.30	1550	1500	2000	1.670	0.360	150	0.020	W5
E1500NC250	N/A	2500	1557	15180	1.15x10 ⁶	1450	2.30	1550	1500	2000	1.670	0.360	150	0.020	W5
E1500VF400	N/A	4000	1995	23600	2.78x10 ⁶	1730	3.00	2700	1500	2000	2.350	0.270	150	0.013	W43
E1500VF450	N/A	4500	1995	23600	2.78x10 ⁶	1730	3.00	2700	1500	2000	2.350	0.270	150	0.013	W43
E2000NC140	N/A	1400	1568	16500	1.13x10 ⁶	1880	1.00	950	2000	4000	1.770	0.350	150	0.020	W5
E2000NC170	N/A	1700	1568	16500	1.13x10 ⁶	1880	1.00	950	2000	4000	1.770	0.350	150	0.020	W5
E2500VF200	N/A	2000	2516	28600	4.10x10 ⁶	1750	1.40	1350	2500	3000	1.630	0.210	150	0.013	W43
E2500VF250	N/A	2500	2516	28600	4.10x10 ⁶	1750	1.40	1350	2500	3000	1.630	0.210	150	0.013	W43
➤ E2400TC400	N/A	4000	2227	25600	3.29x10 ⁶	2400	1.12	1330	2400	4000	2.039	0.598	150	0.008	W28
➤ E2400TC450	N/A	4500	2227	25600	3.29x10 ⁶	2400	1.12	1330	2400	4000	2.039	0.598	150	0.008	W28

HP Sonic-FRD Outlines on page O - 6

High Voltage IGBT Gate Drive Units – C0030BG400

The C0030BG400 is a single channel 30A peak rated gate drive unit (GDU), suitable for low and high side applications with DC link voltages of up to 3.5kV (5kV available on request) and with dv/dt immunity of over 100kV/ μ s.

This GDU performs all of the necessary supervisory functions including under voltage lockout and SCSOA protection with user configurable response and feedback. The unit requires a simple 15V DC power supply and features fibre optic command and feedback signals.

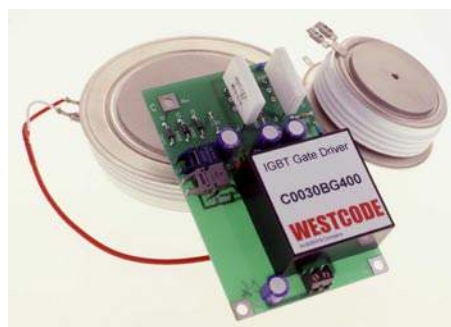
This GDU is capable of driving virtually all IGBTs including our range of press-pack devices at frequencies from DC up to 20kHz with no duty cycle limitations.

Options include standard variants set up for use with each of Westcode's range of IGBTs (see table) and the core module for integration into end user PCBs. Additionally our application engineers can develop semi-custom solutions based around the standard core module.

Features

- 30A peak drive current (500ns rise time)
- 10kV AC rms isolation test
- Partial discharge free up to 4kV AC rms
- 100kV/ μ s dv/dt immunity
- Temperature range -40°C up to $+70^{\circ}\text{C}$ (-55°C up to $+80^{\circ}\text{C}$ available)
- $\pm 15\text{V}$ gate drive voltage
- Standard HP Versatile Link™ Fibre optic links
- Status feedback signal
- User configurable SCSOA protection

IGBT Part Number	$R_{g(\text{on})}$ (W)	$R_{g(\text{off})}$ (W)	C_g (nF)	GDU Part Number
T0160NA45A	15	8.2	100	C0030BG400SAK
T0240NA45E	10	5.6	100	C0030BG400SAL
T0360NA25A	33	18	100	C0030BG400SAA
T0500NA25E	22	15	100	C0030BG400SAB
T0600TA45A	5.6	3.3	100	C0030BG400SAM
T0800TA45E	4.7	3.3	100	C0030BG400SAN
T0900EA45A	4.7	2.7	100	C0030BG400SAP
T1200EA45E	3.3	2.2	100	C0030BG400SAR
T1200TA25A	4.7	6.8	100	C0030BG400SAC
T1500TA25E	3.3	6.8	100	C0030BG400SAD
T1800GA45A	3.3	2.2	100	C0030BG400SAS
T2400GA45E	2.2	1.5	100	C0030BG400SAT



The launch of this complementary product demonstrates our continued commitment to provide our customers with complete solutions for power electronics and further strengthens our assemblies' capability.

This GDU also provides our customers with a rapid route to prototype with our range of high voltage press-pack IGBTs without having to solve the additional problems associated with high isolation voltage gate drives.

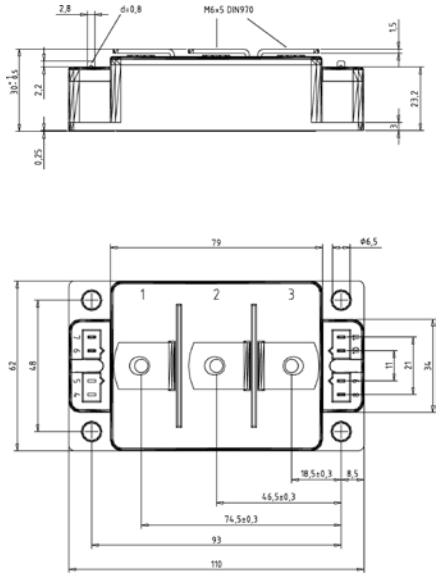
Outline drawings



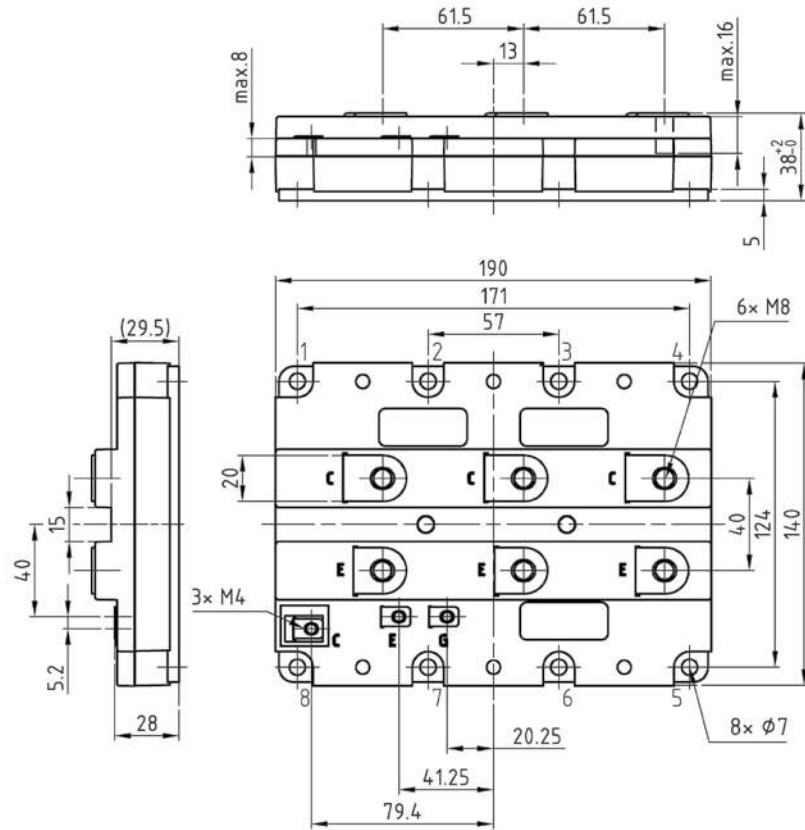
Dimensions in mm and inches (1 mm = 0.0394")

X130 Y3-Li

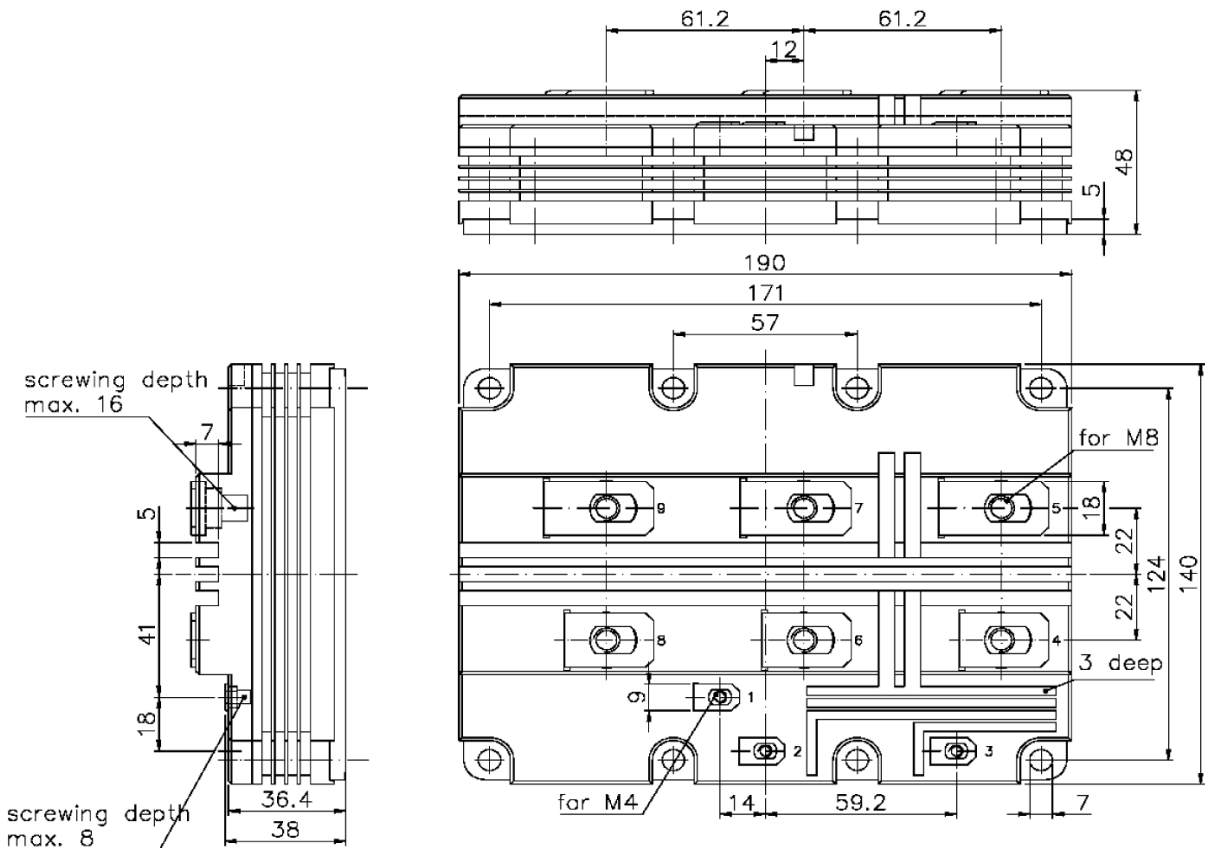
- a: low inductance (VMM, MII)
- b: w/o pin 8 & 9, low inductance (MID)
- c: w/o pin 10 & 11, low inductance (MDI)
- d: w/o terminal 1, low inductance (VMO)



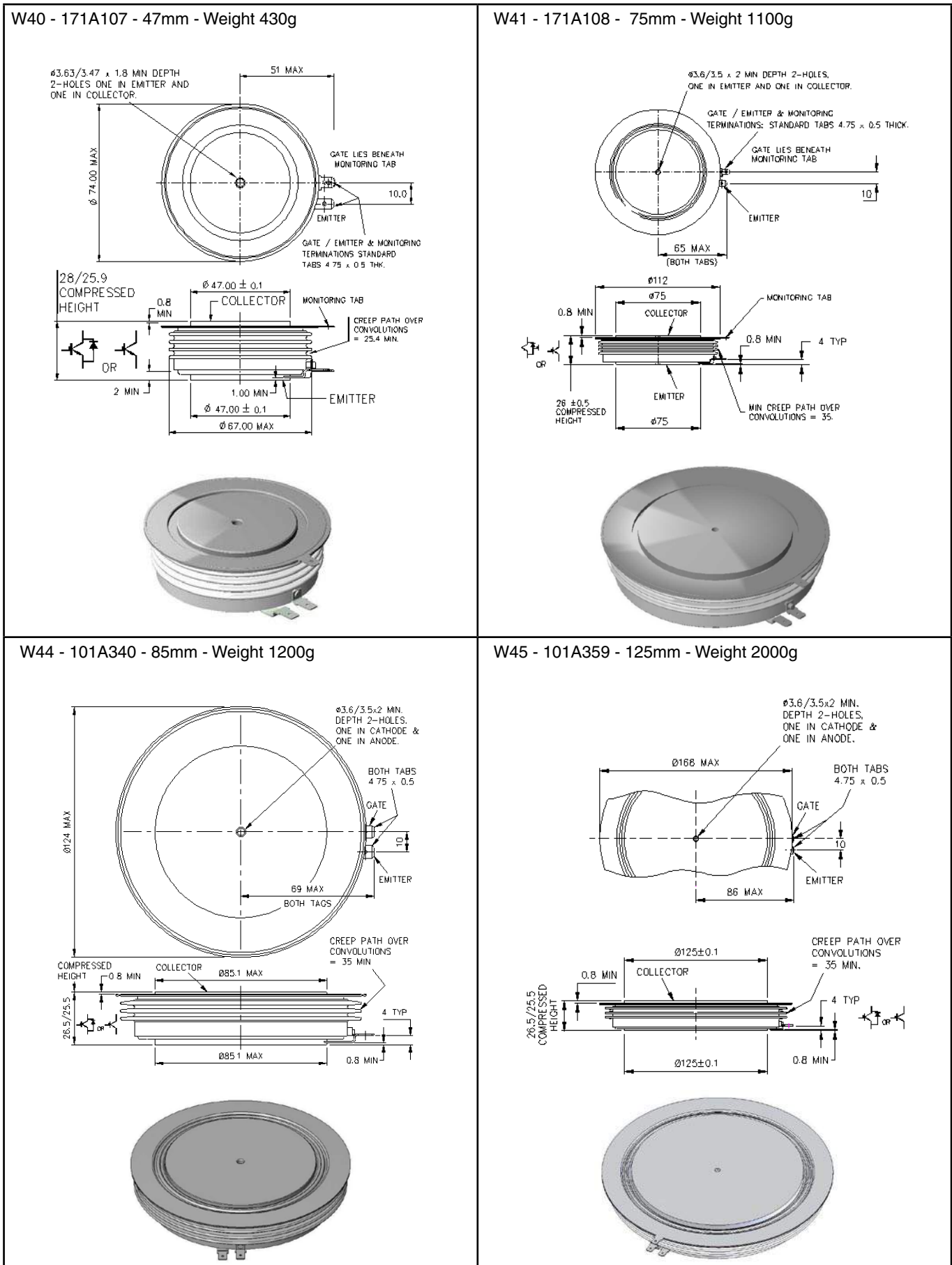
X134 E10-Pack



X135 E11-Pack



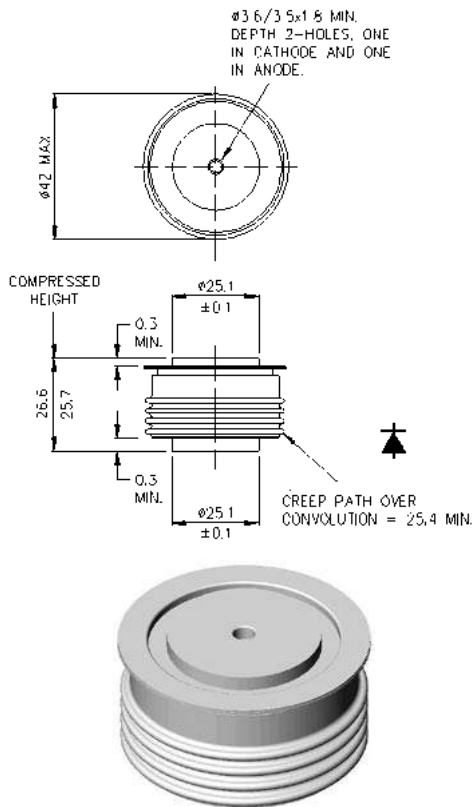
Press-Pack IGBTs - Outlines



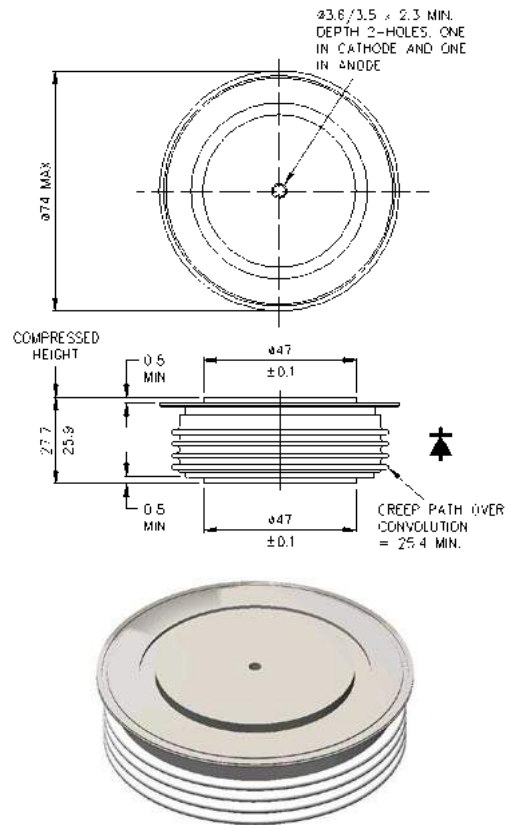
HP Sonic-FRD - Outlines



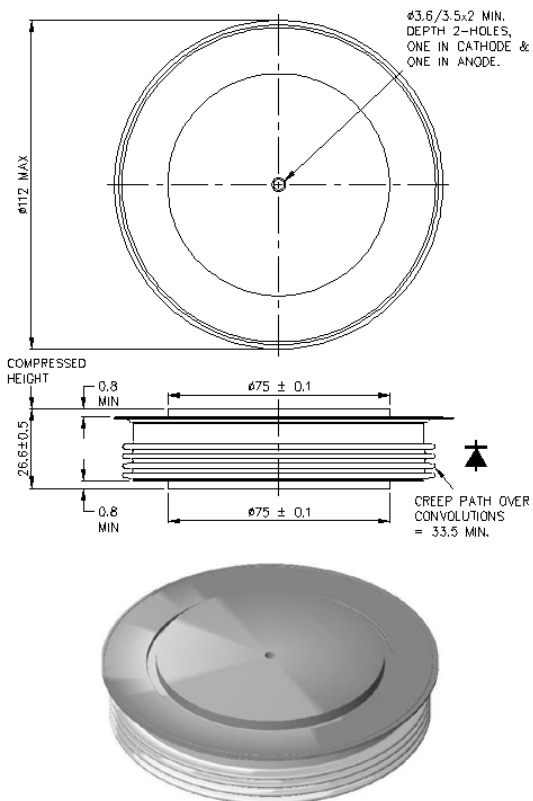
W3 - 100A317 - 25mm - Weight 140g



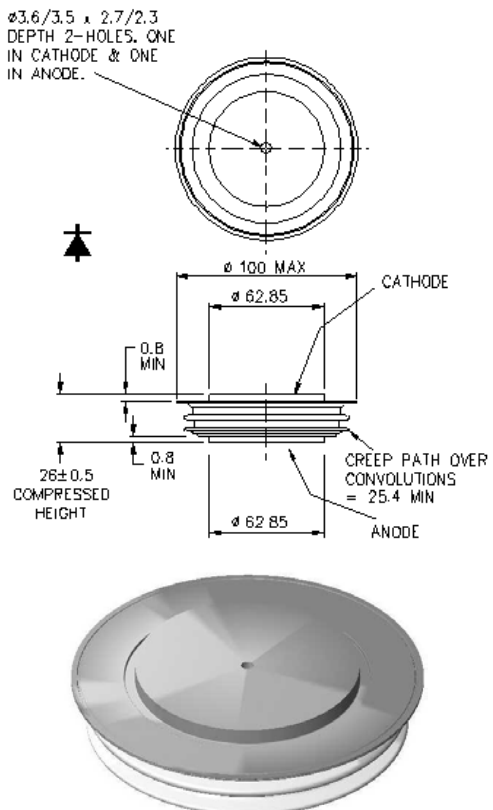
W5 - 100A249 - 47mm - Weight 510g



W28 - 100A330 - 73mm - Weight 1240g



W43 - 100A320 - 63mm - Weight 1000g



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tel.+375 29 758 47 80 МТС

Мы не работаем с частными (физическими) лицами.

Мы работаем только с юридическими лицами(организациями) и ИП и только по безналичному расчёту.
каталог, описание, технические, характеристики, datasheet, параметры, маркировка,габариты, фото , мост, выпрямитель



Выпрямитель, Минск

Электронные компоненты, радиодетали

где и как купить в Минске?