Модуль, igbt, semikron купить в Минске

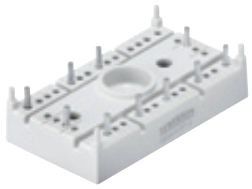
www.fotorele.net www.tiristor.by радиодетали, электронные компоненты
email minsk17@tut.by tel.mob +375 44 758 47 80 velcom **+375 29 758 47 80** мтс

подробно смотрите ниже: описание, технические характеристики, datasheet , фото, каталог
QR код

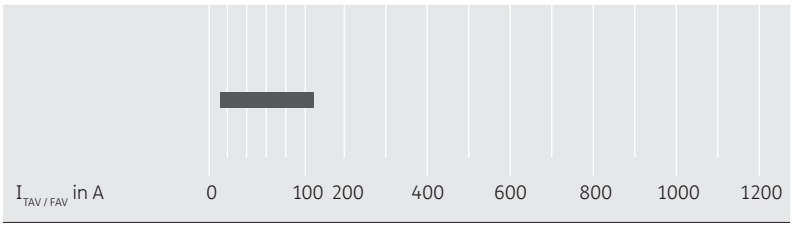
Thyristor / Diode Modules

SEMITOP®1/2/3

W1C, WT, W3C
single switch



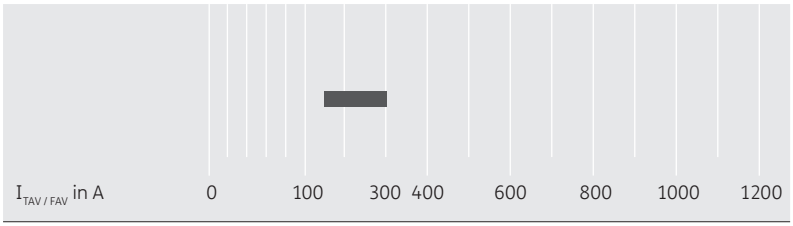
800V up to 1600V



SEMiX®1/2

half bridge

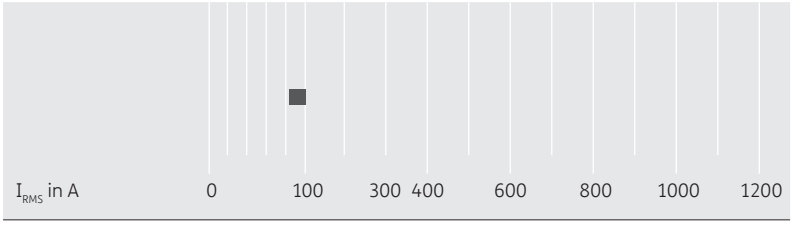
1600V



SEMIPONT®5

W3C

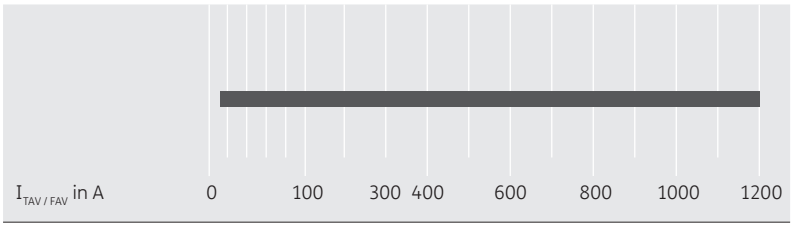
1200V up to 1600V



SEMIPACK®0/1/2/3/4/5/6

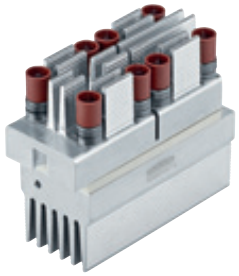
single switch
half bridge

200V up to 2200V

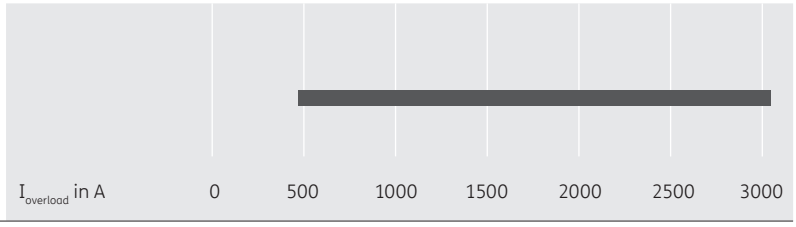


SEMiSTART®

W1C

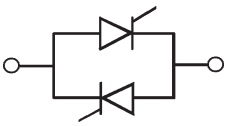
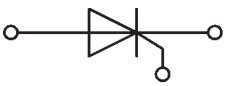
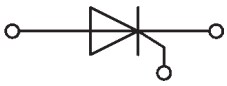
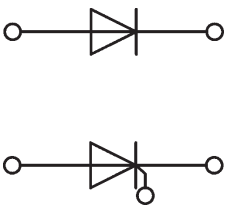
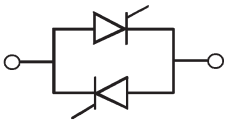
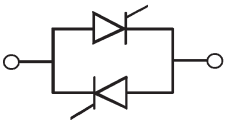
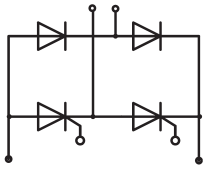
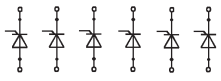
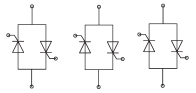
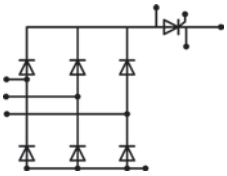


1400V up to 1800V



4

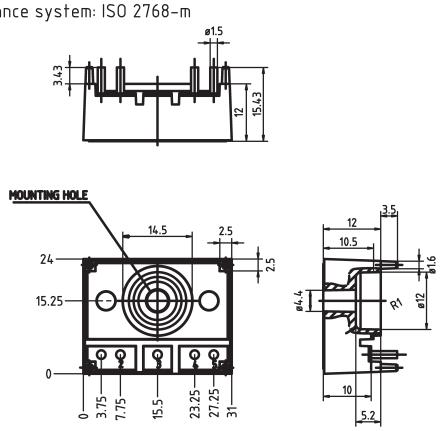
Thyristor / Diode Modules / SEMITOP

Type	V_{RRM} V_{DRM}	I_{TAV} I_{FAV} @ T_S	T_S	I_{TSM} I_{FSM} @ T_{jmax}	$V_{T(TO)}$ @ T_{jmax}	r_T @ T_{jmax}	$R_{th(j-s)}$ per chip	T_j	Case	Circuit
	V	A	°C	A	V	mΩ	K/W	°C		
SK 25 KQ	800-1600	29	85	280	1.1	20.00	1.7	-40 ... +125	1	
SK 45 KQ	800-1600	47	85	380	1	10.00	1.2	-40 ... +125	1	
SK 70 KQ	800-1600	72	85	900	1	6.00	0.8	-40 ... +125	1	
SK 100 KQ	800-1600	101	85	1350	0.9	4.50	0.6	-40 ... +125	2	
SK 120 KQ	800-1600	134	85	1800	0.9	3.50	0.45	-40 ... +125	2	
SK 35 TAA	800-1600	35	80	380	0.85	9.10	1.2	-40 ... +130	2	
SK 55 TAA	800-1600	55	80	900	0.85	5.70	0.8	-40 ... +130	2	
SK 75 TAA	800-1600	75	80	1500	0.9	4.50	0.6	-40 ... +130	2	
SK 100 TAA	800-1600	100	80	2000	0.9	3.50	0.45	-40 ... +130	2	
SK 75 TAE 12	1200	75	80	1250	0.85	4.40	0.6	-40 ... +130	2	
SK 25 WT	800-1600	29	85	280	1.1	20.00	1.7	-40 ... +125	2	
SK 45 WT	800-1600	47	85	380	1	10.00	1.2	-40 ... +125	2	
SK 70 WT	800-1600	72	85	900	1	6.00	0.8	-40 ... +125	3	
SK 100 WT	800-1600	101	85	1350	0.9	4.50	0.6	-40 ... +125	3	
SK 35 BZ	800-1600	35	80	270	0.85	14.00	1.7	-40 ... +125	2	
SK 45 STA	800-1600	47	75	380	1	10.00	1.2	-40 ... +125	3	
SK 25 UT	800-1600	29	85	280	1.1	20.00	1.7	-40 ... +125	3	
SK 45 UT	800-1600	47	85	380	1	10.00	1.2	-40 ... +125	3	
SK 30 DTA	800-1600	25	80	900	1	6.00	1.7	-40 ... +150	3	
SK 60 DTA	800-1600	61	80	1350	0.9	0.60	0.6	-40 ... +125	3	
SK 80 DTA	800-1600	65	80	1800	0.9	3.50	1	-40 ... +150	3	

Cases

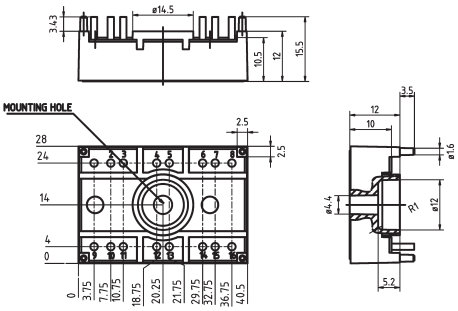
SEMITOP 1

dimensions in mm
tolerance system: ISO 2768-m



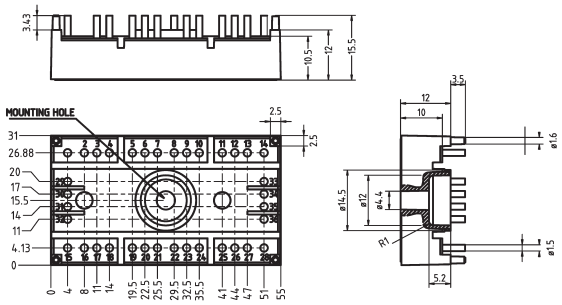
SEMITOP 2

dimensions in mm
tolerance system: ISO 2768-m



SEMITOP 3

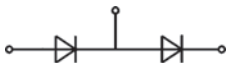
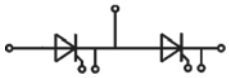
dimensions in mm
tolerance system: ISO 2768-m



Dimensions in mm

Thyristor / Diode Modules / SEMiX

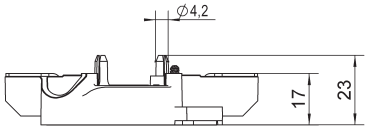
Type

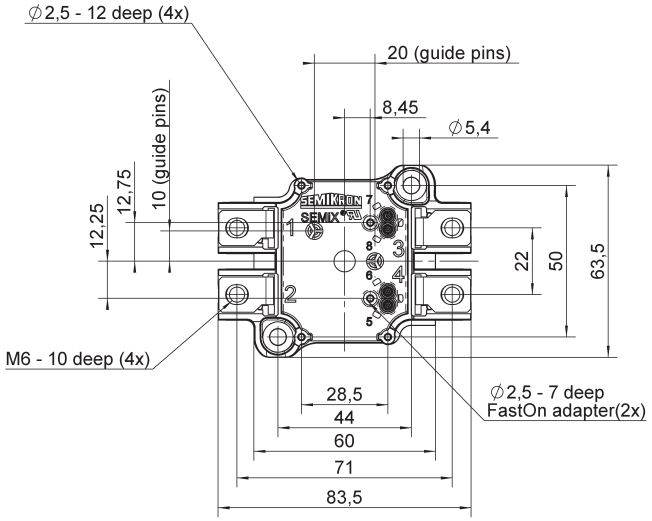
	V_{RRM} V_{DRM} V	I_{TAV} I_{FAV} @ T_C A	T_C °C	I_{TSM} I_{FSM} @ T_{jmax} A	$V_{T(TO)}$ @ T_{jmax} V	r_T @ T_{jmax} mΩ	$R_{th(j-c)}$ per chip K/W	$R_{th(c-s)}$ K/W	T_j °C	Case	Circuit
SEMiX191KD16s	1600	190	85	5000	0.85	0.95	0.18	0.075	-40 ... +130	1s	
SEMiX302KD16s	1600	300	85	7500	0.85	1.1	0.091	0.045	-40 ... +130	2s	
SEMiX171KH16s	1600	170	85	4800	0.85	1.5	0.18	0.075	-40 ... +130	1s	
SEMiX302KH16s	1600	300	85	8000	0.85	1.1	0.091	0.045	-40 ... +130	2s	
SEMiX141KT16s	1600	140	85	3000	0.85	2.1	0.21	0.075	-40 ... +130	1s	
SEMiX302KT16s	1600	300	85	8000	0.85	1.7	0.091	0.045	-40 ... +130	2s	

4

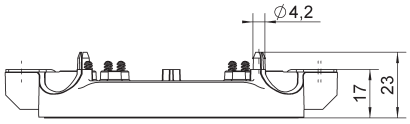
Cases

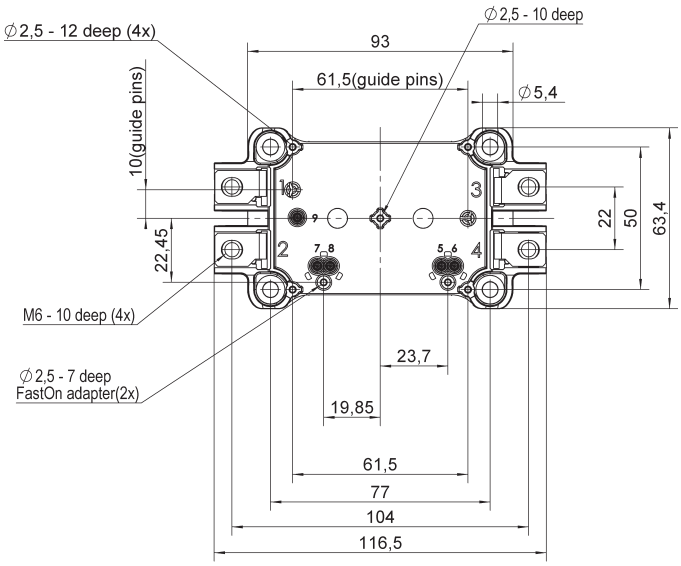
SEMiX 1s





SEMiX 2s

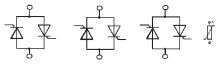


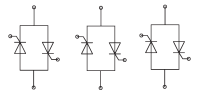


Dimensions in mm

Thyristor / Diode Modules / SEMIPONT

Type	V_{RRM} V_{DRM}	I_{TAV} I_{FAV} @ T_S	T_S	I_{TSM} I_{FSM} @ T_{jmax}	$V_{T(TO)}$ @ T_{jmax}	r_T @ T_{jmax}	$R_{th(j-s)}$ cont. per chip	T_j	Case	Circuit
	V	A	°C	A	V	mΩ	K/W	°C		
SKUT 85/16 T V2[1)]	1600	94	85	1050	1.1	6.00	-	-40 ... +125	5	
SKUT 85/12 T V2[1)]	1200	94	85	1050	1.1	6.00	-	-40 ... +125	5	
SKUT 115/16T V2[1)]	1600	127	85	1250	0.9	5	-	-40 ... +125	5	
SKUT 115/12T V2[1)]	1200	127	85	1250	0.9	5	-	-40 ... +125	5	
SKUT 85/12 V2 [1)]	1200	85	85	1050	1.1	6.00	0.85	-40 ... +125	5	
SKUT 85/12	1200	85	85	1050	1.1	6.00	0.85	-40 ... +125	5	
SKUT 85/16 V2 [1)]	1600	85	85	1050	1.1	6.00	0.85	-40 ... +125	5	
SKUT 115/12 V2[1)]	1200	105	85	1250	0.9	5.00	0.63	-40 ... +125	5	
SKUT 115/16 V2[1)]	1600	105	85	1250	0.9	5.00	0.63	-40 ... +125	5	

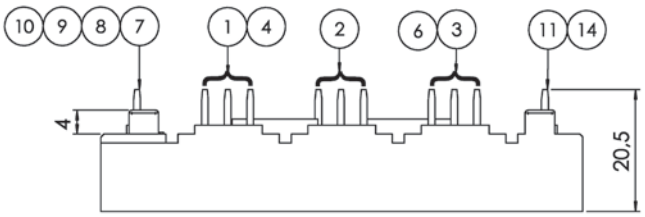


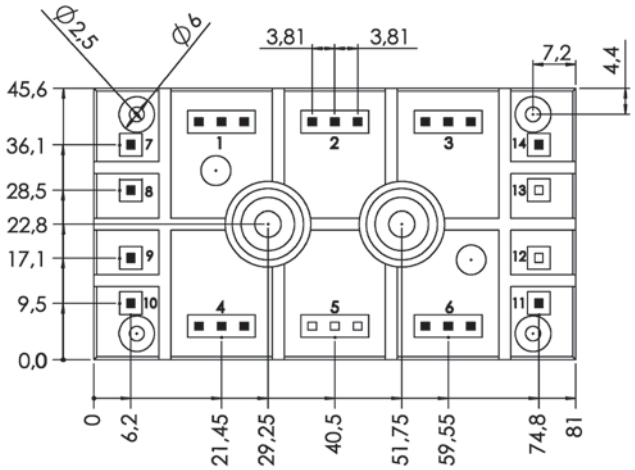


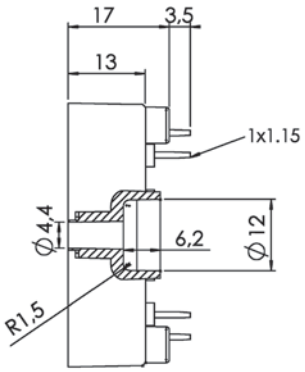
Footnotes: 1) New product

Cases

SEMIPONT 5





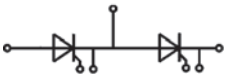


Dimensions in mm

Thyristor / Diode Modules / SEMIPACK

Type	V_{RRM} V_{DRM}	I_{TAV} I_{FAV} @ T_C	T_C	I_{TSM} I_{FSM} @ T_{jmax}	$V_{T(TO)}$ @ T_{jmax}	r_T @ T_{jmax}	$R_{th(j-c)}$ cont. per chip	$R_{th(c-s)}$ per chip	T_j	Case	Circuit
	V	A	°C	A	V	mΩ	K/W	K/W	°C		
SKET 330	800-2200	295	85	8000	1.2	0.55	0.09	0.02	-40 ... +130	4	
SKET 400	800-1800	392	85	12000	0.92	0.30	0.09	0.02	-40 ... +130	4	
SKET 741/22 E	2200	740	85	26500	0.9	0.21	0.0405	0.01	-40 ... +125	6	
SKET 801/18 E	1800	800	85	30000	0.85	0.17	0.0405	0.01	-40 ... +125	6	
SKKE 15	600-1600	14	85	280	0.85	15	2	0.2	-40 ... +125	0	
SKKE 81	400-2200	82	85	1750	0.85	1.80	0.4	0.2	-40 ... +125	1	
SKKE 162	800-1800	195	85	5000	0.85	1.20	0.18	0.1	-40 ... +135	2	
SKKE 380	1200-1600	380	100	10000	0.8	0.35	0.11	0.04	-40 ... +150	3	
SKKE 600	1200-2200	600	100	18000	0.75	0.25	0.07	0.02	-40 ... +150	4	
SKKE 1201/22	2200	1360	85	35000	0.75	0.07	0.047	0.015	-40 ... +125	6	
SKKL 92	800-1800	95	85	1750	0.9	2.00	0.28	0.2	-40 ... +125	1	
SKMT 92	800-1800	95	85	1750	0.9	2.00	0.28	0.2	-40 ... +125	1	
SKKD 15	600-1600	14	85	280	0.85	15	2	0.2	-40 ... +125	0	
SKKD 26	1200-1600	31	85	480	0.85	6.00	1	0.2	-40 ... +125	1	
SKKD 46	400-1800	47	85	600	0.85	5.00	0.6	0.2	-40 ... +125	1	
SKKD 81	400-1800	82	85	1750	0.85	1.80	0.4	0.2	-40 ... +125	1	
SKKD 81 H4	2000-2200	82	85	1750	0.85	1.80	0.4	0.2	-40 ... +125	1	
SKKD 100	400-1800	100	85	2000	0.85	1.30	0.35	0.2	-40 ... +125	1	
SKKD 101/16	1600	134	85	2000	0.87	2.45	0.19	0.22	-40 ... +130	1	
SKKD 152/16	1600	171	85	4500	0.82	1.35	0.2	0.1	-40 ... +125	2	
SKKD 162	800-2200	195	85	5000	0.85	1.20	0.18	0.1	-40 ... +135	2	
SKKD 212	1200-1800	212	85	5500	0.75	1.05	0.18	0.1	-40 ... +135	2	
SKKD 260	800-2200	260	85	10000	0.9	0.37	0.14	0.04	-40 ... +130	3	
SKKD 353	1200-1800	350	85	9500	0.84	0.75	0.091	0.08	-40 ... +125	3	
SKKD 380	800-2200	380	100	10000	0.8	0.35	0.11	0.04	-40 ... +150	3	
SKKD 701	1200-2200	701	100	22500	0.7	0.28	0.069	0.02	-40 ... +160	5	
SKKH 15	600-1600	13.5	85	280	1.1	20.00	1.6	0.2	-40 ... +125	0	
SKKH 27	800-1800	25	85	480	0.9	12.00	0.9	0.2	-40 ... +125	1	
SKKH 42	800-1800	40	85	850	1	4.50	0.65	0.2	-40 ... +125	1	
SKKH 57	800-1800	50	85	1250	0.9	3.50	0.57	0.2	-40 ... +125	1	
SKKH 57 H4	2000-2200	50	85	1250	0.9	3.50	0.57	0.2	-40 ... +125	1	
SKKH 58/16 E	1600	55	85	1200	1	4.80	0.47	0.22	-40 ... +130	1	
SKKH 72	800-1800	70	85	1450	0.9	3.50	0.35	0.2	-40 ... +125	1	
SKKH 72 H4	2000-2200	70	85	1450	0.9	3.50	0.35	0.2	-40 ... +125	1	
SKKH 92	800-1800	95	85	1750	0.9	2.00	0.28	0.2	-40 ... +125	1	
SKKH 106	800-1800	106	85	1900	0.9	2.00	0.28	0.2	-40 ... +130	1	
SKKH 107/16 E	1600	119	85	1900	0.9	3.35	0.19	0.22	-40 ... +130	1	
SKKH 122	800-1800	129	85	3200	0.85	2.00	0.2	0.13	-40 ... +125	2	
SKKH 132	800-1800	137	85	4000	1	1.60	0.18	0.1	-40 ... +125	2	
SKKH 132 H4	2000-2200	128	85	3800	1.1	2.00	0.17	0.1	-40 ... +125	2	
SKKH 162	800-1800	156	85	5000	0.85	1.50	0.17	0.1	-40 ... +125	2	
SKKH 162 H4	2000-2200	143	85	4800	0.95	2.00	0.16	0.1	-40 ... +125	2	
SKKH 172	1600	175	85	5000	0.83	1.30	0.155	0.1	-40 ... +125	2	
SKKH 250	1200-1800	250	85	8000	0.925	0.45	0.14	0.04	-40 ... +130	3	
SKKH 273	1200-1800	273	85	8000	0.9	0.92	0.104	0.08	-40 ... +130	3	
SKKH 280 H4	2000-2200	252	85	7500	0.9	0.75	0.11	0.04	-40 ... +125	3	
SKKH 323	1200-1600	320	85	8200	0.81	0.85	0.091	0.08	-40 ... +130	3	
SKKH 330	800-1800	305	85	8000	0.8	0.60	0.11	0.04	-40 ... +130	3	
SKKH 460	1600-2200	460	85	15500	0.88	0.45	0.072	0.02	-40 ... +130	5	
SKKH 570	1600-1800	570	85	15500	0.78	0.32	0.069	0.02	-40 ... +135	5	

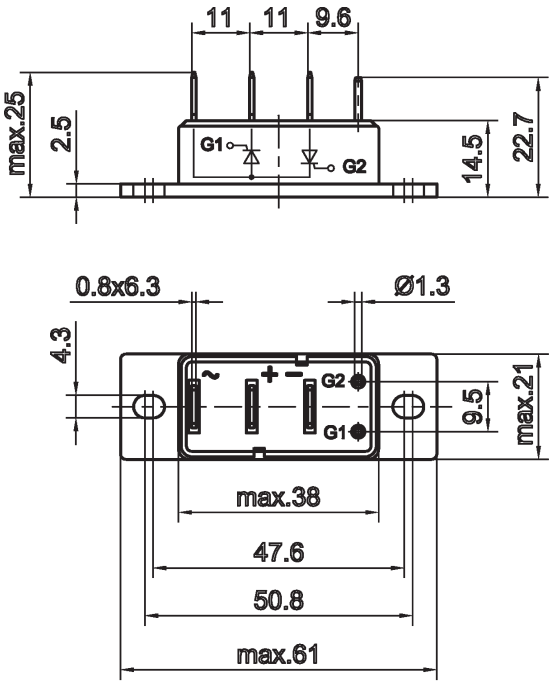
Thyristor / Diode Modules / SEMIPACK

Type	V_{RRM} V_{DRM}	I_{TAV} I_{FAV} @ T_C	T_C	I_{TSM} I_{FSM} @ T_{jmax}	$V_{T(TO)}$ @ T_{jmax}	r_T @ T_{jmax}	$R_{th(j-c)}$ cont. per chip	$R_{th(c-s)}$ per chip	T_j	Case	Circuit
	V	A	°C	A	V	mΩ	K/W	K/W	°C		
SKKT 15	600-1600	13.5	85	280	1.1	20.00	1.6	0.2	-40 ... +125	0	
SKKT 20	800-1600	18	85	280	1	16.00	1.2	0.2	-40 ... +125	1	
SKKT 20B	800-1600	18	85	280	1	16.00	1.2	0.2	-40 ... +125	1	
SKKT 27	800-1600	25	85	480	0.9	12.00	0.9	0.2	-40 ... +125	1	
SKKT 27B	800-1600	25	85	480	0.9	12.00	0.9	0.2	-40 ... +125	1	
SKKT 42	800-1800	40	85	850	1	4.50	0.65	0.2	-40 ... +125	1	
SKKT 42B	800-1800	40	85	850	1	4.50	0.65	0.2	-40 ... +125	1	
SKKT 57	800-1800	50	85	1250	0.9	3.50	0.57	0.2	-40 ... +125	1	
SKKT 57B	800-1800	50	85	1250	0.9	3.50	0.57	0.2	-40 ... +125	1	
SKKT 57 H4	2000-2200	50	85	1250	0.9	3.50	0.57	0.2	-40 ... +125	1	
SKKT 58/16 E	1600	55	85	1200	1	4.80	0.47	0.22	-40 ... +130	1	
SKKT 58B16 E	1600	55	85	1200	1	4.80	0.47	0.22	-40 ... +130	1	
SKKT 72	800-1800	70	85	1450	0.9	3.50	0.35	0.2	-40 ... +125	1	
SKKT 72B	800-1800	70	85	1450	0.9	3.50	0.35	0.2	-40 ... +125	1	
SKKT 72 H4	2000-2200	70	85	1450	0.9	3.50	0.35	0.2	-40 ... +125	1	
SKKT 92	800-1800	95	85	1750	0.9	2.00	0.28	0.2	-40 ... +125	1	
SKKT 92B	800-1800	95	85	1750	0.9	2.00	0.28	0.2	-40 ... +125	1	
SKKT 106	800-1800	106	85	1900	0.9	2.00	0.28	0.2	-40 ... +130	1	
SKKT 106B	800-1800	106	85	1900	0.9	2.00	0.28	0.2	-40 ... +130	1	
SKKT 107/16 E	1600	119	85	1900	0.9	3.35	0.19	0.22	-40 ... +130	1	
SKKT 107B16 E	1600	119	85	1900	0.9	3.35	0.19	0.22	-40 ... +130	1	
SKKT 122	800-1800	129	85	3200	0.85	2.00	0.2	0.13	-40 ... +125	2	
SKKT 132	800-1800	137	85	4000	1	1.60	0.18	0.1	-40 ... +125	2	
SKKT 132 H4	2000-2200	128	85	3800	1.1	2.00	0.17	0.1	-40 ... +125	2	
SKKT 162	800-1800	156	85	5000	0.85	1.50	0.17	0.1	-40 ... +125	2	
SKKT 162 H4	2000-2200	143	85	4800	0.95	2.00	0.16	0.1	-40 ... +125	2	
SKKT 172	1400-1800	175	85	5000	0.83	1.30	0.155	0.1	-40 ... +125	2	
SKKT 250	800-1800	250	85	8000	0.925	0.45	0.14	0.04	-40 ... +130	3	
SKKT 273	1200-1800	273	85	8000	0.9	0.92	0.104	0.08	-40 ... +130	3	
SKKT 280 H4	2000-2200	252	85	7500	0.9	0.75	0.11	0.04	-40 ... +125	3	
SKKT 330	800-1800	305	85	8000	0.8	0.60	0.11	0.04	-40 ... +130	3	
SKKT 323	1200-1600	320	85	8200	0.81	0.85	0.091	0.08	-40 ... +130	3	
SKKT 460	1600	460	85	15500	0.88	0.45	0.072	0.02	-40 ... +130	5	
SKKT 460 H4	2200	460	85	15500	0.88	0.45	0.072	0.02	-40 ... +130	5	
SKKT 570	1200-1800	570	85	15500	0.78	0.32	0.069	0.02	-40 ... +135	5	

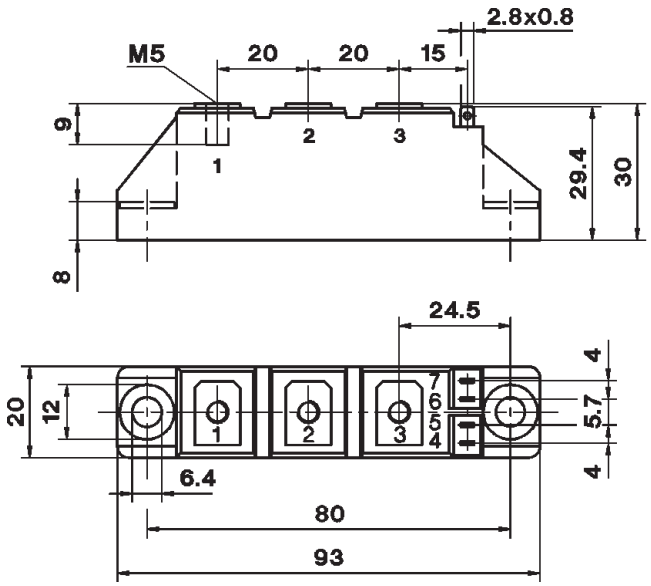
Thyristor / Diode Modules / SEMIPACK

Cases

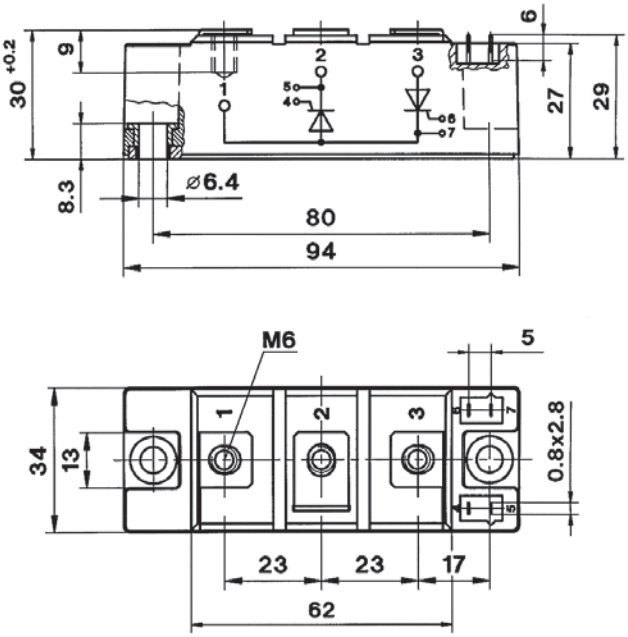
SEMIPACK 0



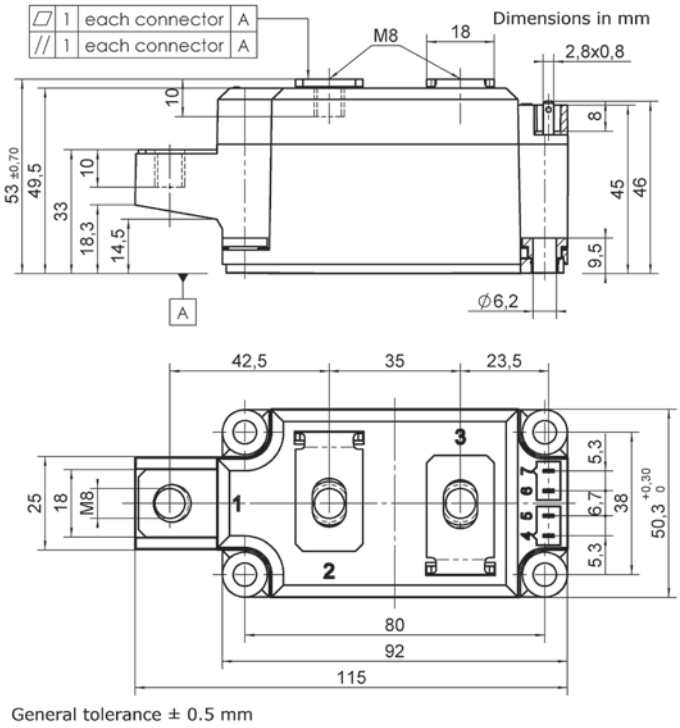
SEMIPACK 1



SEMIPACK 2



SEMIPACK 3

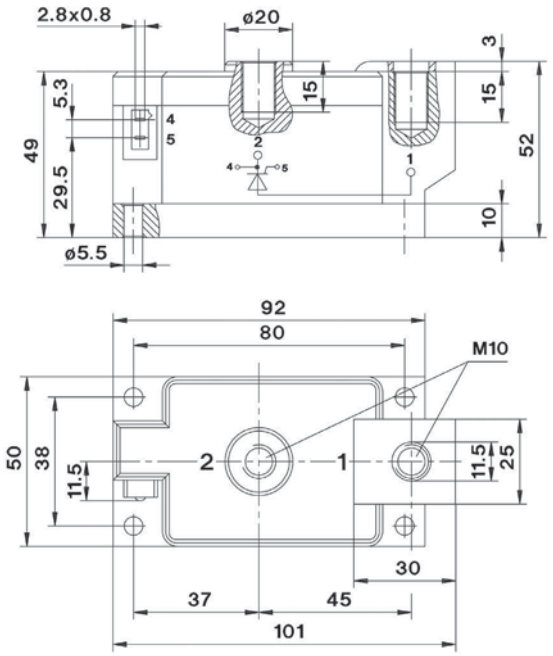


General tolerance ± 0.5 mm

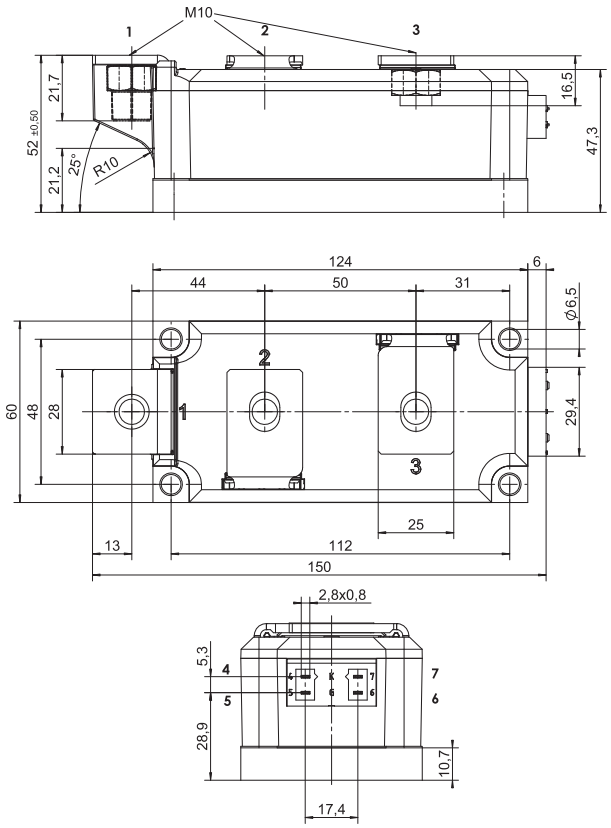
Dimensions in mm

Cases

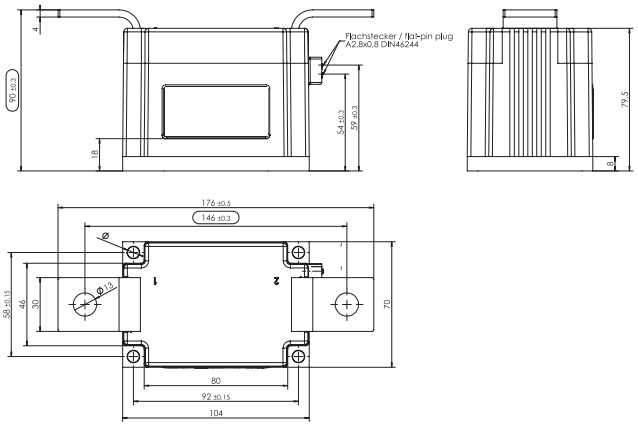
SEMIPACK 4



SEMIPACK 5



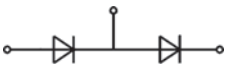
SEMIPACK 6

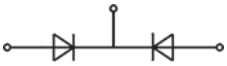


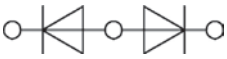
Dimensions in mm

Thyristor / Diode Modules / SEMIPACK FAST

Type	V_{RRM} V_{DRM}	I_{TAV} I_{FAV} @ T_C	T_C	I_{FSM} @ T_{jmax}	$V_{T(TO)}$ @ T_{jmax}	r_T @ T_{jmax}	$R_{th(j-c)}$ per chip	$R_{th(c-s)}$	T_j	Case	Circuit
	V	A	°C	A	V	mΩ	K/W	K/W	°C		
SKKE 120F	1700	120	82	1800	1.5	4.5	0.2	0.05	-40 ... +150	2	
SKKE 290F	600	290	109	6000	0.9	1.2	0.08	0.05	-40 ... +150	2	
SKKE 301F	1200	300	43	3600	1.2	2.75	0.11	0.05	-40 ... +150	2	
SKKE 310F	1200	310	84	5500	1.2	1.9	0.08	0.05	-40 ... +150	2	
SKKE 330F[3)]	1700	330	70	5200	1.5	1.9	0.079	-	-40 ... +150	4	
SKKE 600F[3)]	1200	600	85	5800	1.2	1.9	0.062	-	-40 ... +150	4	
SKKD 40F	600-1000	40	80	940	1.2	4	0.7	0.2	-40 ... +125	1	
SKKD 42F	1200-1400	42	85	1100	1	5	0.7	0.2	-40 ... +130	1	
SKKD 60F	1700	60	83	900	1.5	9	0.4	0.1	-40 ... +150	2	
SKKD 75F12	1200	75	55	900	1.2	11	0.4	0.1	-40 ... +150	2	
SKKD 150F	1200	150	54	1800	1.2	5.5	0.2	0.1	-40 ... +150	2	
SKKD 170F	1200	170	85	2300	1.2	3.5	0.14	0.1	-40 ... +150	2	
SKKD 205F	600	205	87	3000	0.9	2	0.16	0.1	-40 ... +150	2	
SKMD 150F12	1200	150	54	1800	1.2	5.5	0.2	0.1	-40 ... +150	2	
SKMD 202E	200-300	202	87	2800	0.8	1.5	0.2	0.1	-40 ... +150	2	
SKND 150F	1200	150	54	1800	1.2	5.5	0.2	0.1	-40 ... +150	2	
SKND 202E	200-300	202	87	2800	0.8	1.5	0.2	0.1	-40 ... +150	2	
SKND 205F	600	205	87	3000	0.9	2	0.16	0.1	-40 ... +150	2	



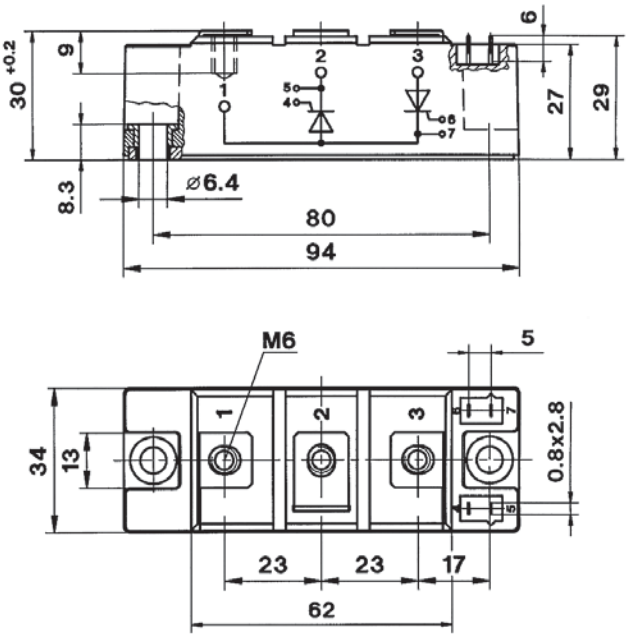




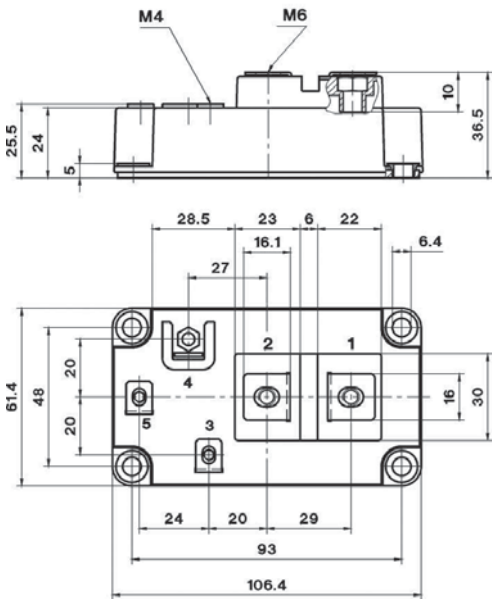
Footnotes: 3) SEMIPACK Fast in SEMITRANS 4 case

Cases

SEMIPACK 2



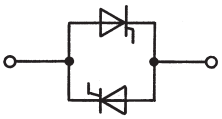
SEMIPACK Fast in SEMITRANS 4



Dimensions in mm

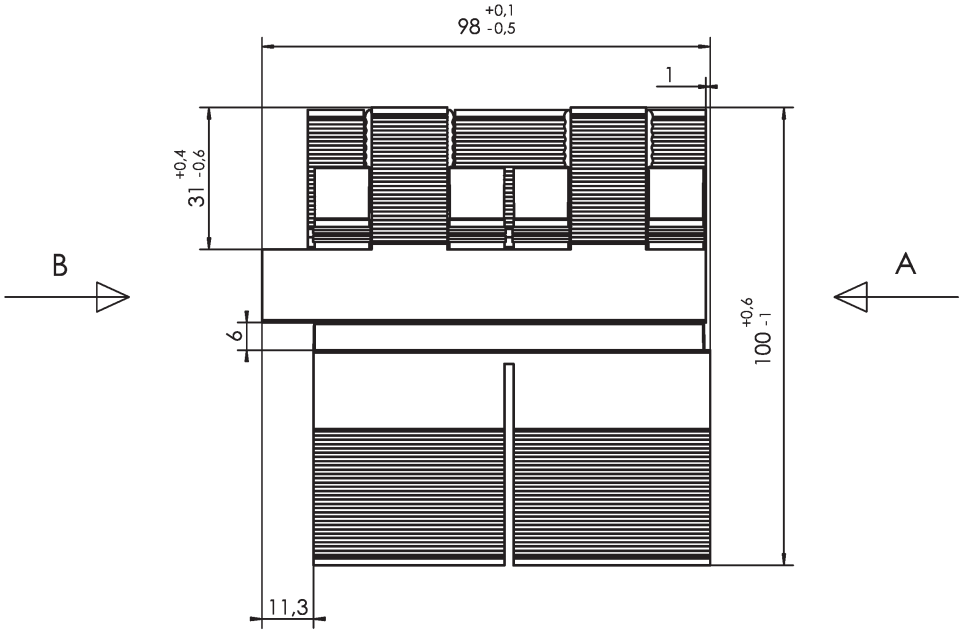
Thyristor Modules / SEMiSTART

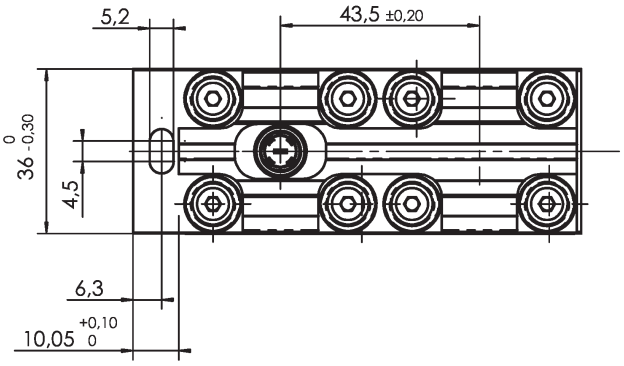
Type

	V_{RRM} V_{DRM}	$I_{overload}$ W1C (for 20s)	T_C	I_{TSM} @ T_j = 125°C	$V_{T(TO)}$ @ T_{jmax} =125°C	r_T @ T_{jmax} =125°C	$R_{th(j-r)}$ cont. per chip	T_{jmax} (for 20s)	Case	
	V	A	°C	A	V	mΩ	K/W	°C		Circuit
SKKQ 560	1400-1800	560	150	5200	0.9	0.9	0.106	150	1	
SKKQ 800	1400-1800	800	150	5200	0.9	0.8	0.106	150	2	
SKKQ 1200	1400-1800	1225	150	8000	0.9	0.5	0.066	150	2	
SKKQ 1500	1400-1800	1500	150	15000	0.85	0.3	0.037	150	2	
SKKQ 3000	1400-1800	3080	150	25500	0.95	0.18	0.026	150	3	

Cases

SEMiSTART 1

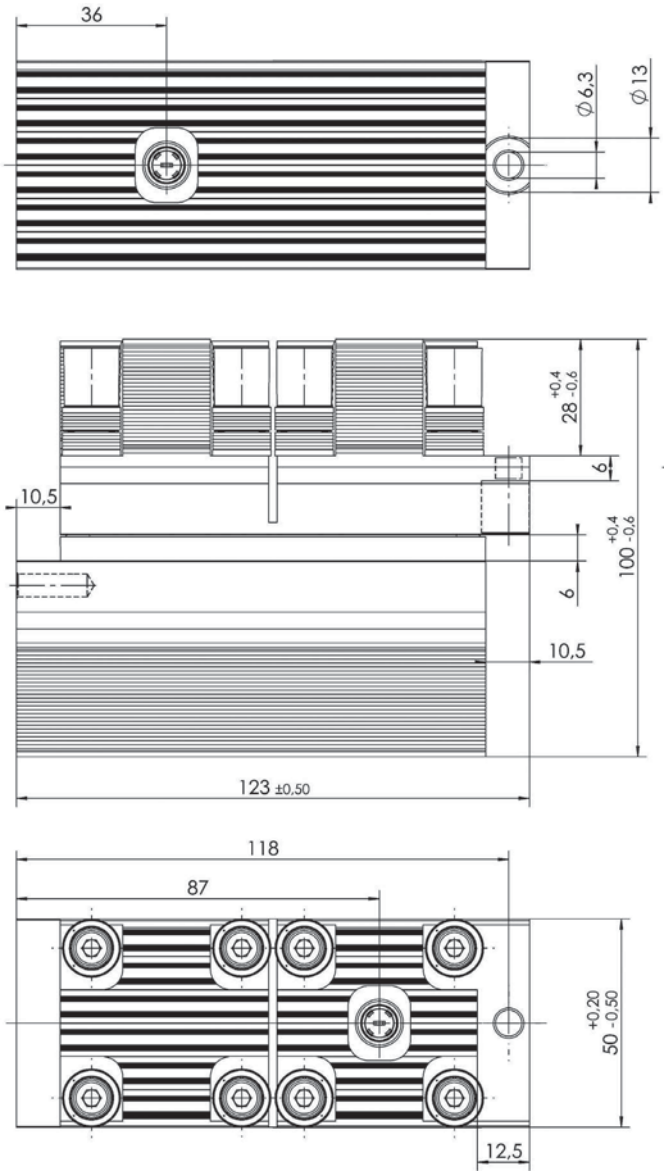




Dimensions in mm

Cases

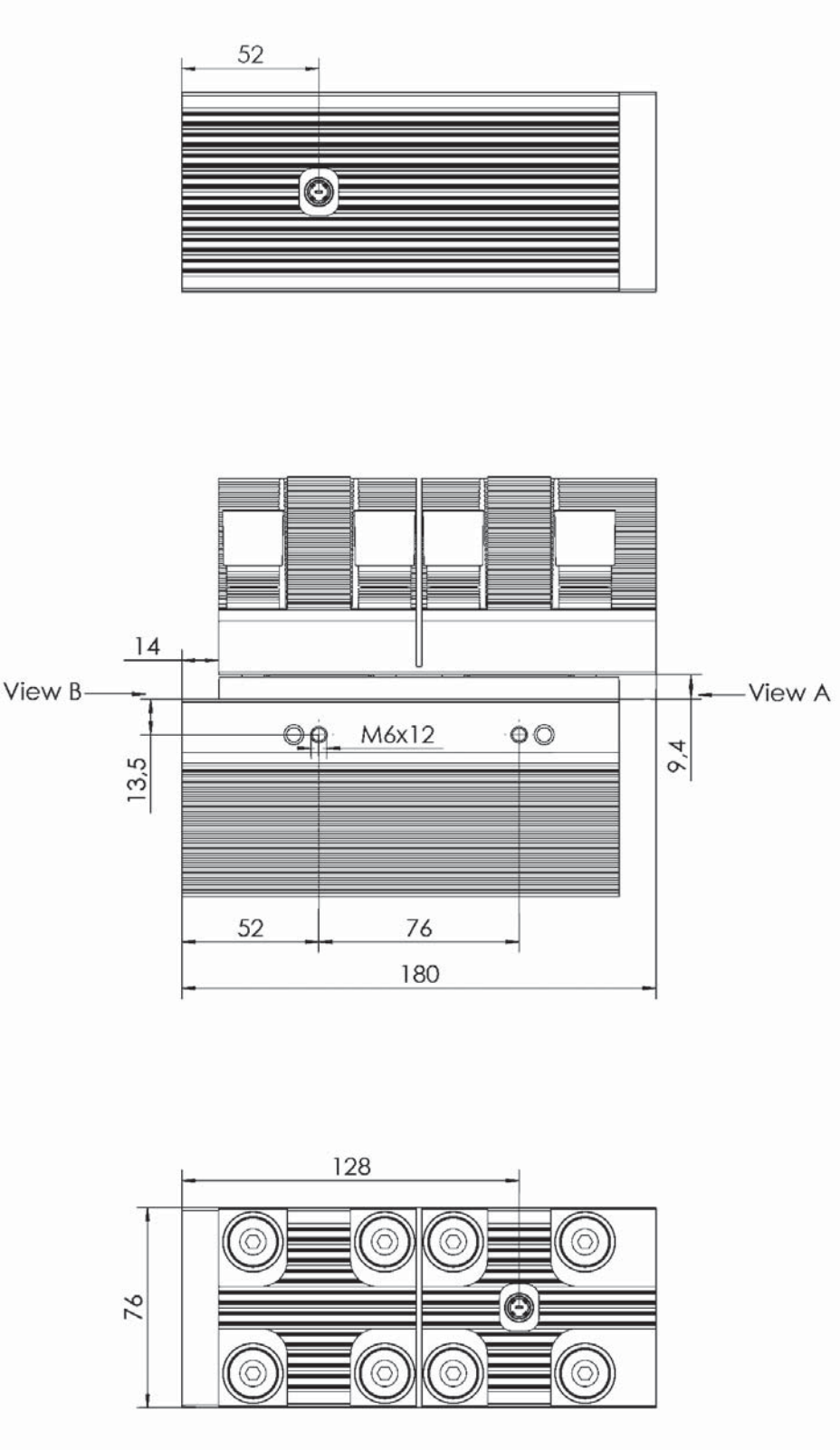
SEMiSTART 2



Dimensions in mm

Cases

SEMiSTART 3



Dimensions in mm

Bridge Rectifier Modules for Reliable Inverter Design

Bridge rectifiers are components which have every branch of a rectifier circuit in a single, compact case. Bridge rectifiers exist from a few amps to several hundred amps in different package types.

SEMIKRON offers bridge rectifier modules in single phase or 3-phase topology with or without brake chopper. The bridge rectifier modules are available in different package like SEMiX, SEMITOP, SEMIPONT, Power Bridge and MiniSKiiP.

5

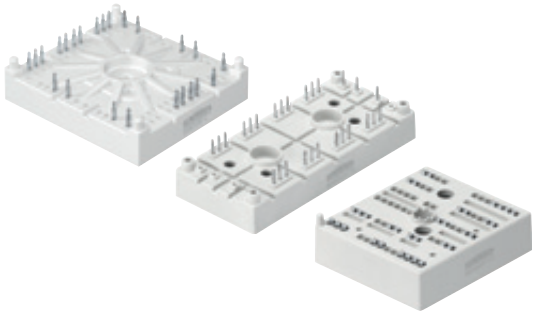
For detailed information
please refer data sheets.

Further information:
www.semikron.com/bridge-rectifier-modules

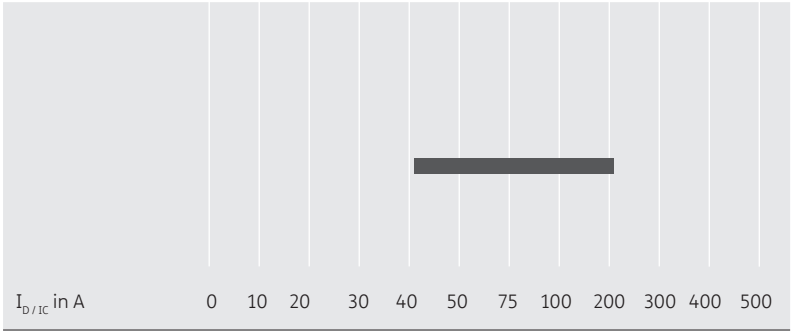
Bridge Rectifier Modules

SEMITOP®/SEMIPONT®/MiniSKiiP®

rectifier with brake chopper



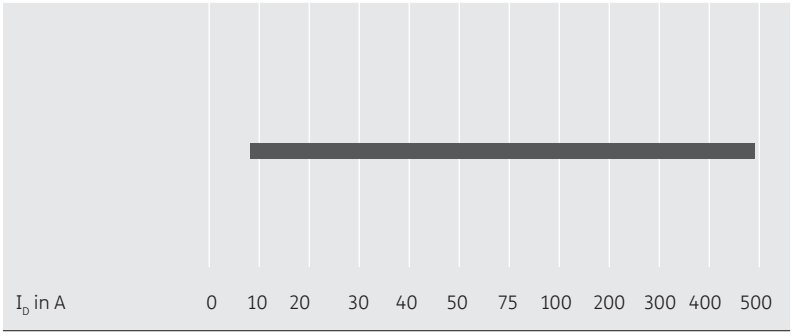
600V up to 1800V



SEMITOP®/SEMIPONT®/SEMiX®/ Power Bridge

three phase

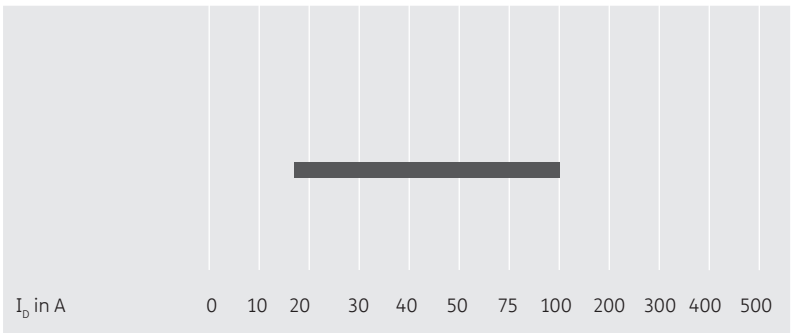
400V up to 1800V



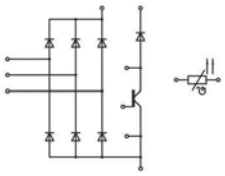
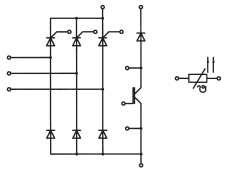
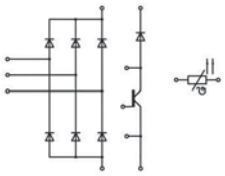
SEMIPONT®/SEMITOP®/ Power Bridge

single phase

400V up to 1800V



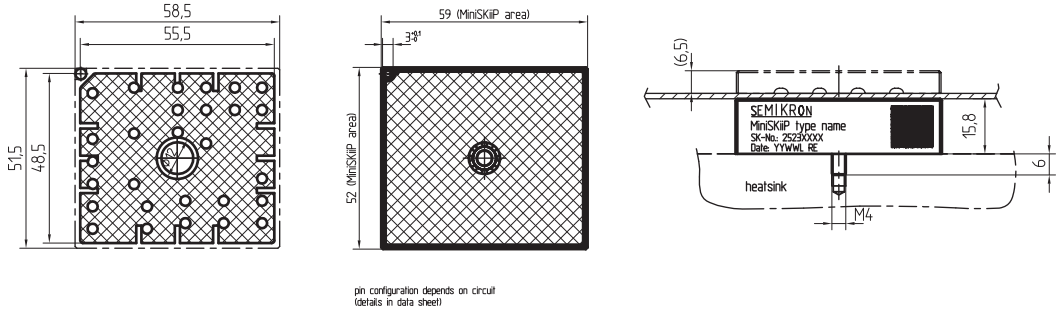
Bridge Rectifier Modules / MiniSKiiP

Type	IGBT						Diode				Rectifier		Module		
	I_C@T_S=25°C	I_{Cnom}	$V_{CE(sat)}$@T_J=25°C typ.	E_{on}	E_{off}	$R_{th(j-s)}$	I_F@T_S=25°C	V_F@T_J=25°C typ.	E_{rr}	$R_{th(j-s)}$	$R_{th(j-s)}$	I_{FSM}@T_S=25°C	Case	$R_{th(c-s)}$	Circuit
	A	A	V	mJ	mJ	K/W	A	V	mJ	K/W	K/W	A		K/W	
1200V - IGBT3 (Trench)															
SKiiP 28ANB16V1	1000	83	1.70	13.1	13	0.4	118	1.60	11.2	0.55	0.7	1000	II 2	-	
SKiiP 39ANB16V1	1600	124	1.70	19.9	17.2	0.3	167	1.50	16.2	0.4	0.5	1600	II 3	-	
SKiiP 28AHB16V1	1000	82	1.70	14.4	13.3	0.4	118	1.60	10.8	0.55	0.7	1000	II 2	-	
SKiiP 39AHB16V1	1250	121	1.70	19.9	17.3	0.3	167	1.50	16.2	0.4	0.5	1250	II 3	-	
1700V - IGBT3 (Trench)															
SKiiP 28ANB18V3[1)]	1000	98	2.00	23	32.7	0.33	119	1.8	26.4	0.58	0.64	1000	II 2	-	

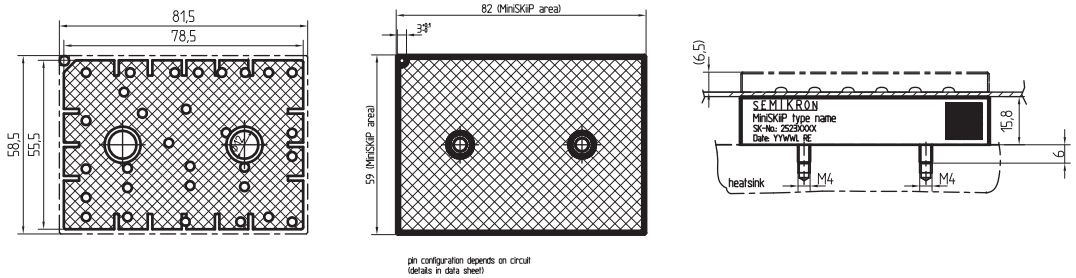
Footnotes: 1) New product

Cases

MiniSKiiP II 2

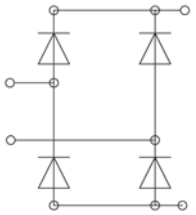
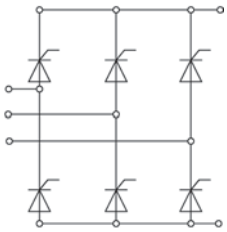
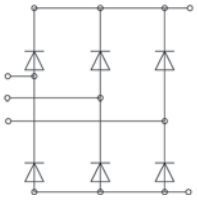
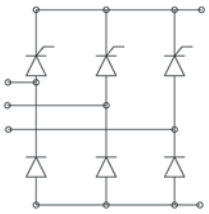
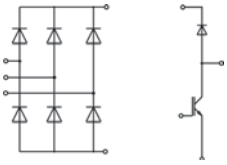
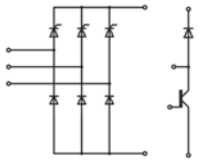


MiniSKiiP II 3



Dimensions in mm

Bridge Rectifier Modules / SEMITOP

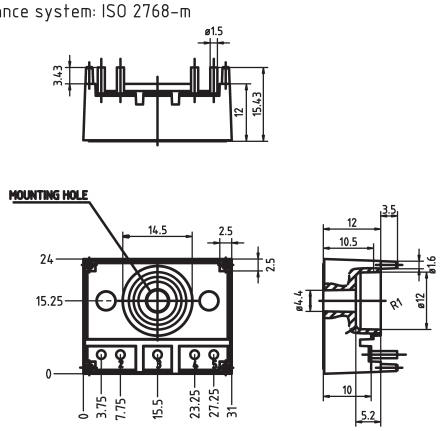
Type	V_{RRM} V_{DRM} V	I_D @ T_S A	T_S °C	I_{TSM} I_{FSM}@T_{jmax} A	$V_{T(TO)}$@T_{jmax} V	r_T@T_{jmax} mΩ	$R_{th(j-s)}$ per chip K/W	T_j °C	Case	Circuit
1 and 3 phase										
SK 50 B 06 UF	600	46	80	400	0.8	11.00	0.45	-40 ... +150	2	
SK 50 B	800-1600	51	80	270	0.8	13.00	1.7	-40 ... +150	2	
SK 55 B 06 F	600	54	80	440	0.9	16.00	1.2	-40 ... +150	2	
SK 55 B 12 F	1200	57	80	550	1.2	22.00	0.9	-40 ... +150	2	
SK 70 B	800-1600	68	80	560	0.8	11.00	1.2	-40 ... +150	2	
SK 100 B	800-1600	100	80	890	0.83	3.90	1	-40 ... +150	2	
SK 40 DT	800-1600	42	80	280	1.1	20.00	1.7	-40 ... +125	3	
SK 70 DT	800-1600	68	80	380	1	10.00	1.2	-40 ... +125	3	
SK 55 D	800-1600	55	80	200	0.8	13.00	2.15	-40 ... +150	2	
SK 70 D	800-1600	70	80	270	0.8	13.00	1.7	-40 ... +150	2	
SK 80 D 12F	1200	80	80	550	1.2	22.00	0.9	-40 ... +150	3	
SK 95 D	800-1600	95	80	560	0.8	11.00	1.2	-40 ... +150	2	
SK 95 D 16p[8)]	1600	95	80	560	0.8	11.00	1.2	-40 ... +150	2p	
SK 40 DH	800-1600	42	80	270	1.1	20.00	1.7	-40 ... +150	3	
SK 70 DH	800-1600	68	80	270	1	10.00	1.2	-40 ... +125	3	
SK 55 DGL 126	1200	55	80	370	0.8	13.00	2	-40 ... +150	3	
SK 95 DGL 126	1600	96	80	700	0.8	11.00	1.2	-40 ... +150	3	
SK 170 DHL 126	1200	170	70	1000	0.8	7.00	0.51	-40 ... +150	4	
SK 200 DHL 066	600	210	70	1250	0.8	4.00	0.52	-40 ... +150	4	

Footnotes: 8) Target data

Cases

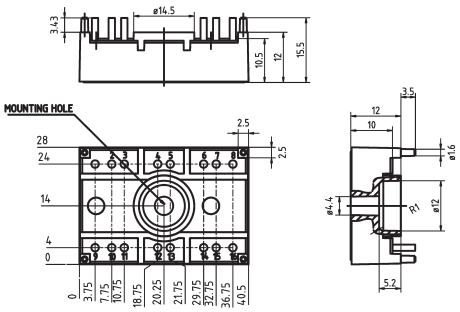
SEMITOP 1

dimensions in mm
tolerance system: ISO 2768-m

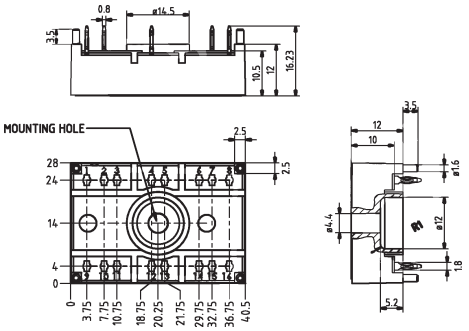


SEMITOP 2

dimensions in mm
tolerance system: ISO 2768-m

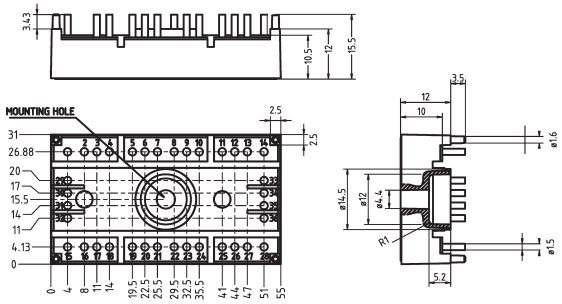


SEMITOP 2 Press-Fit



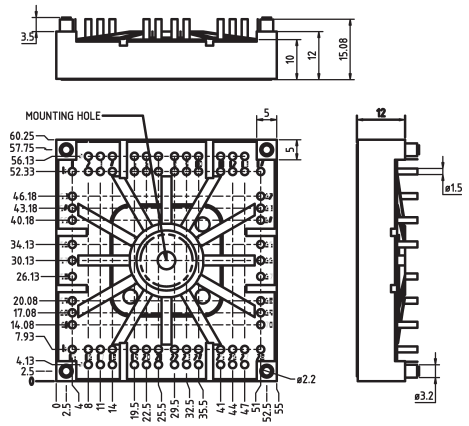
SEMITOP 3

dimensions in mm
tolerance system: ISO 2768-m



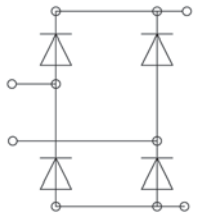
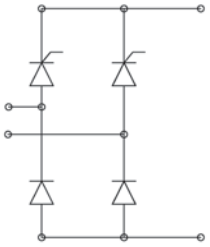
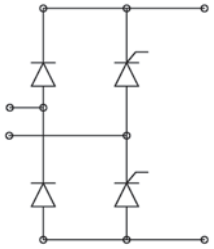
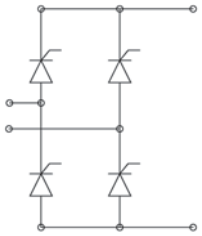
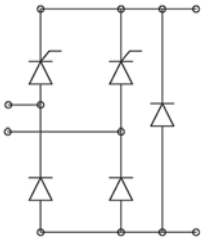
SEMITOP 4

dimensions in mm
tolerance system: ISO 2768-m

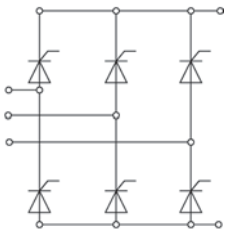
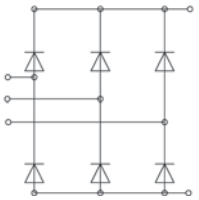
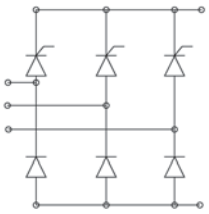
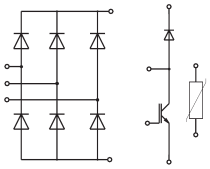
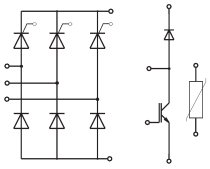


Dimensions in mm

Bridge Rectifier Modules / SEMIPONT

Type	V_{RRM} V_{DRM} V	I_D @ T_C A	T_C °C	I_{TSM} I_{FSM}@T_{jmax} A	$V_{T(TO)}$@T_{jmax} V	r_T@T_{jmax} mΩ	$R_{th(j-c)}$ cont. per chip K/W	T_j °C	Case	Circuit
1 and 3 phase										
SKB 52	400-1800	50	99	425	0.85	8	1.5	-40 ... +150	3	
SKB 60	400-1600	60	88	850	0.85	5	1	-40 ... +125	2	
SKB 72	400-1800	70	101	640	0.85	5	1.1	-40 ... +150	3	
SKBH 28	600-1400	28	89	280	1	16	1.8	-40 ... +125	1	
SKBZ 28	400-1400	28	89	280	1	16	1.8	-40 ... +125	1	
SKBT 28	600-1400	28	89	280	1	16	1.8	-40 ... +125	1	
SKBT 40	800-1400	40	92	400	1	16	1	-40 ... +125	2	
SKCH 28	400-1400	28	89	280	1	16	1.8	-40 ... +125	1	
SKCH 40	400-1600	40	92	400	1	16	1	-40 ... +125	2	

Bridge Rectifier Modules / SEMIPONT

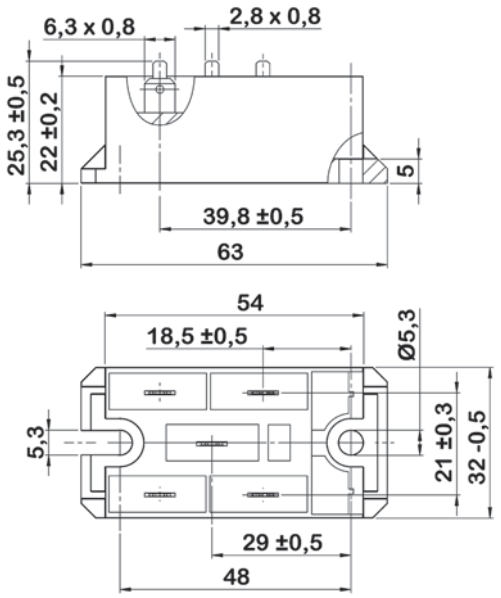
Type	V_{RRM} V_{DRM} V	I_D @ T_C A	T_C °C	I_{TSM} I_{FSM}@T_{jmax} A	$V_{T(TO)}$@T_{jmax} V	r_T@T_{jmax} mΩ	$R_{th(j-c)}$ cont. per chip K/W	T_j °C	Case	Circuit
1 and 3 phase										
SKDT 60	400-1400	60	86	400	1	16	1	-40 ... +125	2	
SKDT 115	1200-1600	110	80	950	1.1	6.00	0.84	-40 ... +125	5	
SKDT 145	1200-1600	145	80	1250	0.9	5.00	0.6	-40 ... +125	5	
SKD 31	200-1600	31	100	320	0.85	12	2	-40 ... +125	1	
SKD 60	400-1600	60	102	850	0.85	5	1	-40 ... +125	2	
SKD 62	400-1800	60	110	425	0.85	8	1.5	-40 ... +150	3	
SKD 82	400-1800	80	110	640	0.85	5	1.1	-40 ... +150	3	
SKD 100	400-1600	100	93	1000	0.85	5	0.85	-40 ... +125	2	
SKD 110	800-1800	110	100	1000	0.85	4	0.9	-40 ... +150	4	
SKD 115	1200-1800	110	85	1150	0.8	7.00	1	-40 ... +150	5	
SKD 145	1200-1800	145	85	1700	0.8	4.00	0.8	-40 ... +150	5	
SKD 160	800-1800	205	100	1500	0.85	3	0.65	-40 ... +150	4	
SKD 210	900-1800	207	99	1600	0.85	3	0.5	-40 ... +150	4	
SKDH 100	800-1400	100	84	850	1	4.5	0.85	-40 ... +125	2	
SKDH 115	1200-1600	110	80	950	1.1	6.00	0.84	-40 ... +125	5	
SKDH 145	1200-1600	145	80	1250	0.9	5.00	0.63	-40 ... +125	5	
3 phase with brake chopper										
SKD 146/..-L105	1200-1600	140	85	1250	0.8	4	0.8	-40 ... +125	6	
SKD146/..-L140T4	1200-1600	140	85	1250	0.8	4	0.8	-40 ... +125	6	
SKD 116/18-L 75	1800	110	85	1050	0.8	7.00	0.8	-40 ... +125	6	
SKD 116/..-L105	1200-1600	110	85	1050	0.8	7	1	-40 ... +125	6	
SKD 116/..-L140	1200-1600	110	85	1050	0.8	7	1	-40 ... +125	6	
SKDH116/..L105	1200-1600	110	85	1000	0.8	7	1	-40 ... +125	6	
SKDH116/..L140	1200-1600	110	85	1000	0.8	7	1	-40 ... +125	6	
SKDH146/..-L105	1200-1600	140	85	1250	0.8	4	0.8	-40 ... +125	6	
SKDH146/..-L140	1200-1600	140	85	1250	0.8	4	0.8	-40 ... +125	6	

5

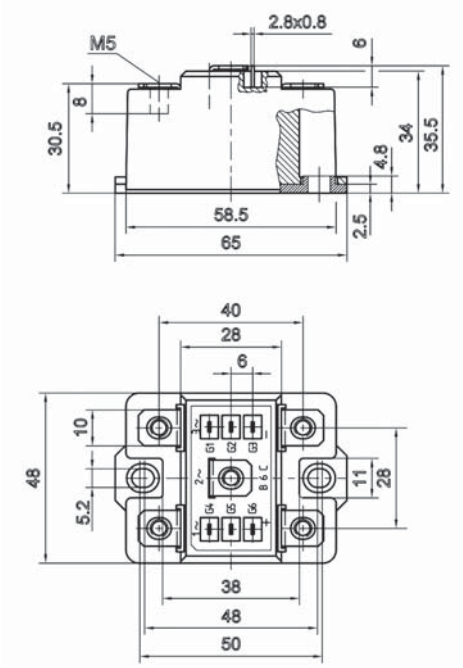
Bridge Rectifier Modules / SEMIPONT

Cases

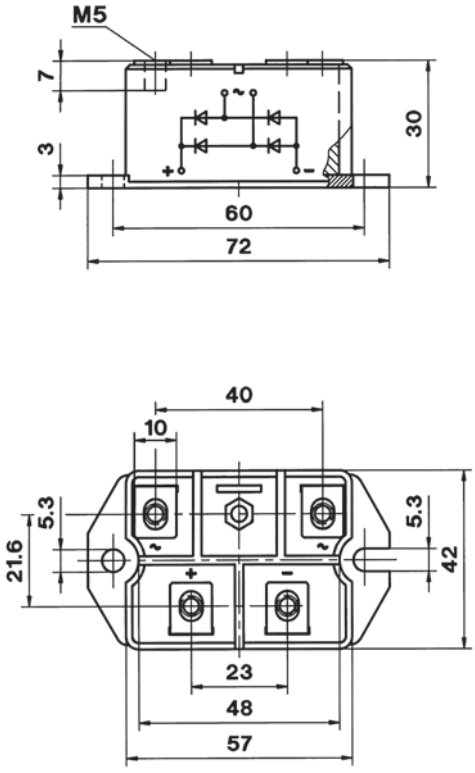
SEMIPONT 1



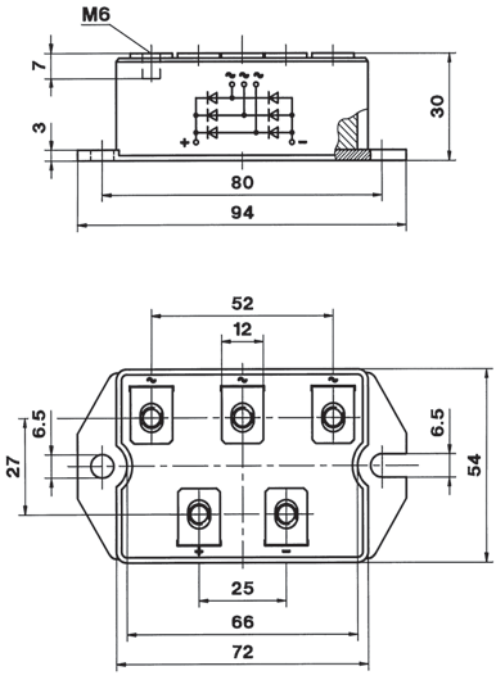
SEMIPONT 2



SEMIPONT 3



SEMIPONT 4

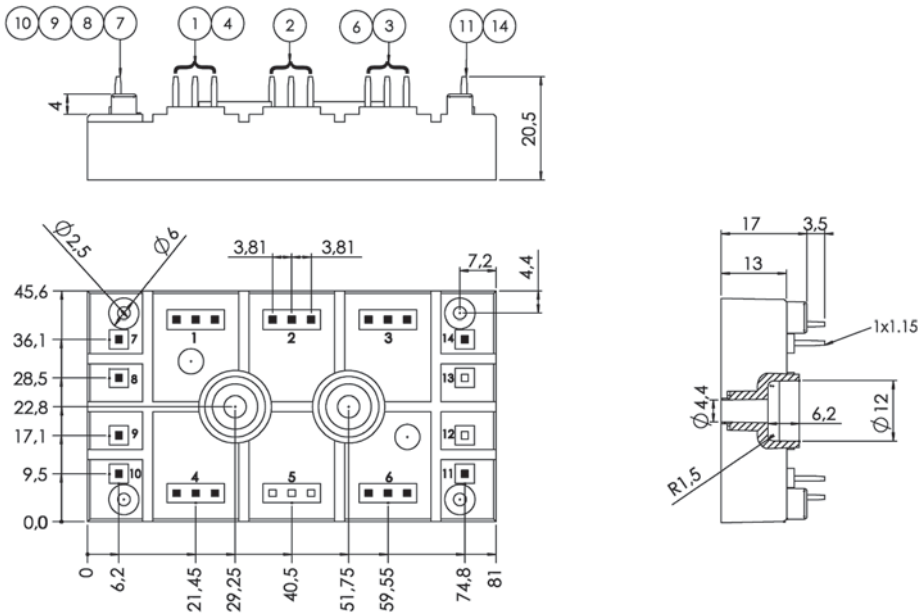


Dimensions in mm

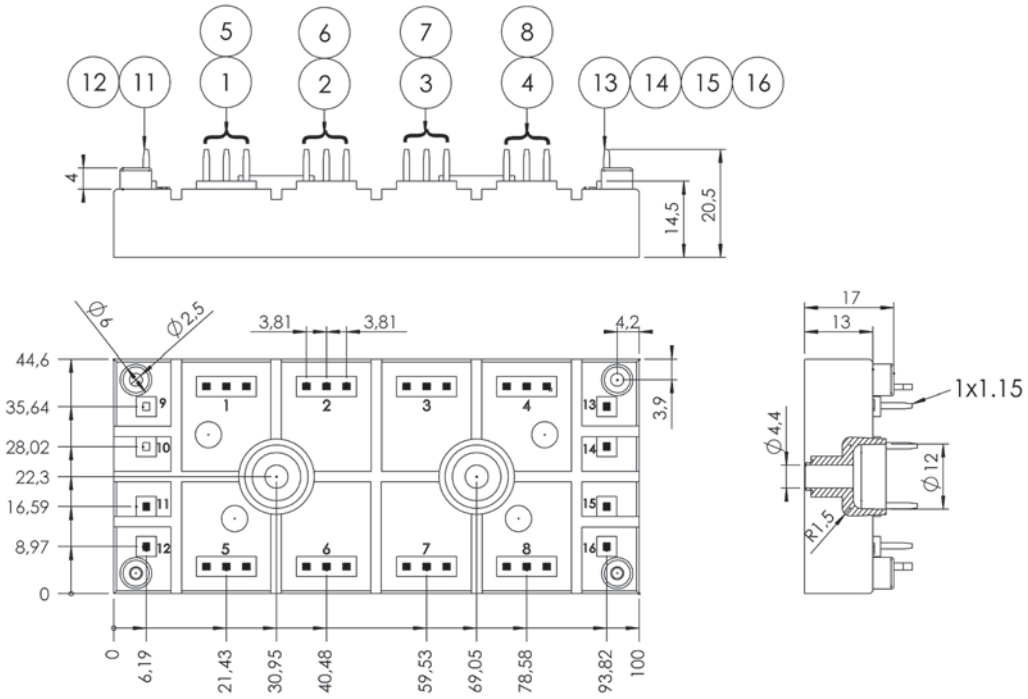
Bridge Rectifier Modules / SEMIPONT

Cases

SEMIPONT 5

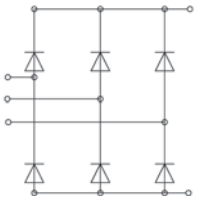
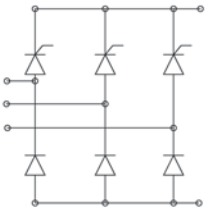


SEMIPONT 6



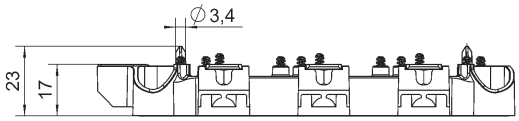
Dimensions in mm

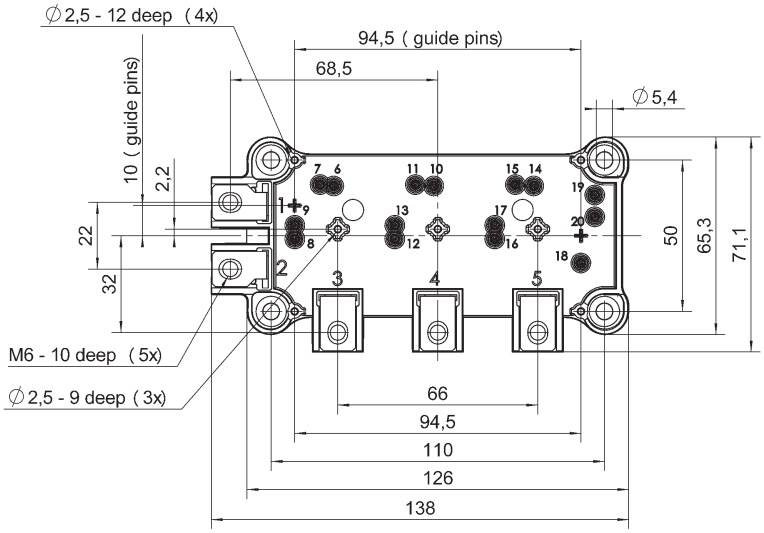
Bridge Rectifier Modules / SEMiX

Type	V_{RRM} V_{DRM} V	I_D @ T_C A	T_C °C	I_{TSM} I_{FSM}@T_{jmax} A	$V_{T(TO)}$@T_{jmax} V	r_T@T_{jmax} mΩ	$R_{th(j-c)}$ per chip K/W	$R_{th(c-s)}$ K/W	T_j °C	Case	Circuit
3 phase											
SEMiX251D12Fs	1200	250	85	1330	1.2	7	0.26	0.04	-40 ... +150	13	
SEMiX291D16s	1600	290	85	1380	0.83	4.6	0.45	0.04	-40 ... +150	13	
SEMiX341D16s	1600	340	85	2000	0.9	2.7	0.22	0.04	-40 ... +130	13	
SEMiX501D17Fs	1700	489	85	2140	1.1	2.7	0.165	0.04	-40 ... +150	13	
SEMiX241DH16s	1600	240	85	1900	0.85	4	0.32	0.04	-40 ... +130	13	

Cases

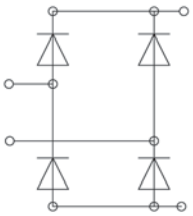
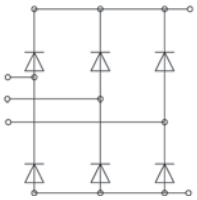
SEMiX 13





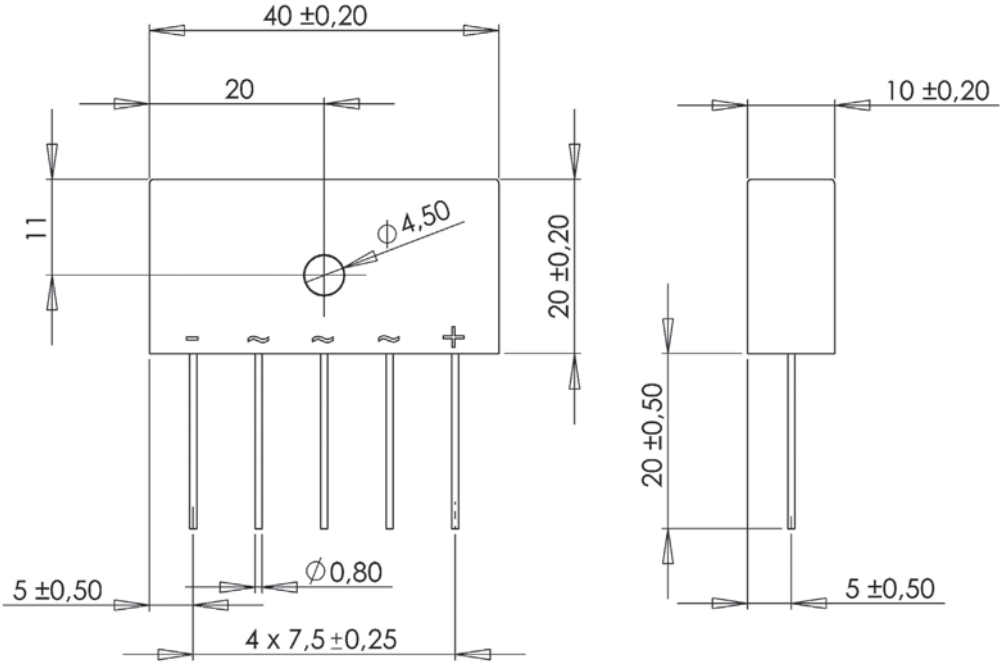
Dimensions in mm

Bridge Rectifier Modules / Power Bridge

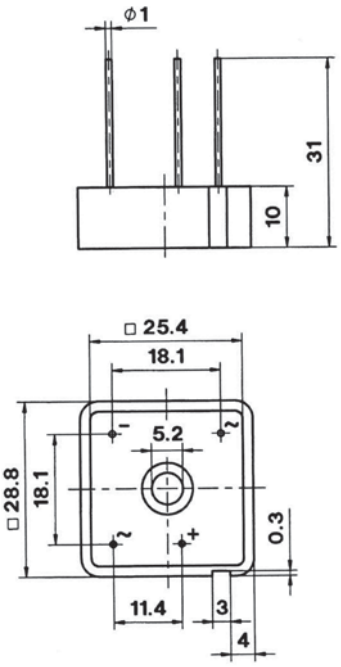
Type	V_{RRM} V_{DRM}	I_D @ $T_{C/S}$	$T_{C/S}$	I_{FSM}@T_{jmax}	$V_{T(TO)}$@T_{jmax}	r_T@T_{jmax}	$R_{th(j-s)}$ cont. per chip	T_j	Case	Circuit
	V	A	°C	A	V	mΩ	K/W	°C		
1 phase										
SKB 25	100-1600	17	75	320	0.85	12.00	8.6	-40 ... +150	G 10b, G 11b	
SKB 26	200-1600	18	75	320	0.85	12.00	8.2	-40 ... +150	G 50a	
SKB 30	200-1600	30	94	320	0.85	12.00	3.2	-40 ... +150	G 12, G 13	
3 phase										
DBI 6	200-1600	9	90	150	0.85	30.00	18.9	-40 ... +150	DBI	
DBI 15	200-1600	15	75	210	0.85	12.00	15.3	-40 ... +150	DBI	
DBI 25	200-1600	25	32	310	0.85	9.00	14.1	-40 ... +150	DBI	
SKD 25	200-1600	20	73	320	0.85	12.00	11.4	-40 ... +150	G 10b, G 11b	
SKD 30	200-1600	30	98	320	0.85	12.00	4.8	-40 ... +150	G 12, G 13	
SKD 33	400-1800	33	110	240	0.8	18.00	2.5	-40 ... +150	G55	
SKD 51	400-1800	50	127	700	0.8	8.50	1.2	-40 ... +150	G51	
SKD 53	400-1800	53	100	270	0.8	13.00	1.9	-40 ... +150	G55	
SKD 83	400-1800	83	95	560	0.8	7.50	1.4	-40 ... +150	G55	

Cases

DBI



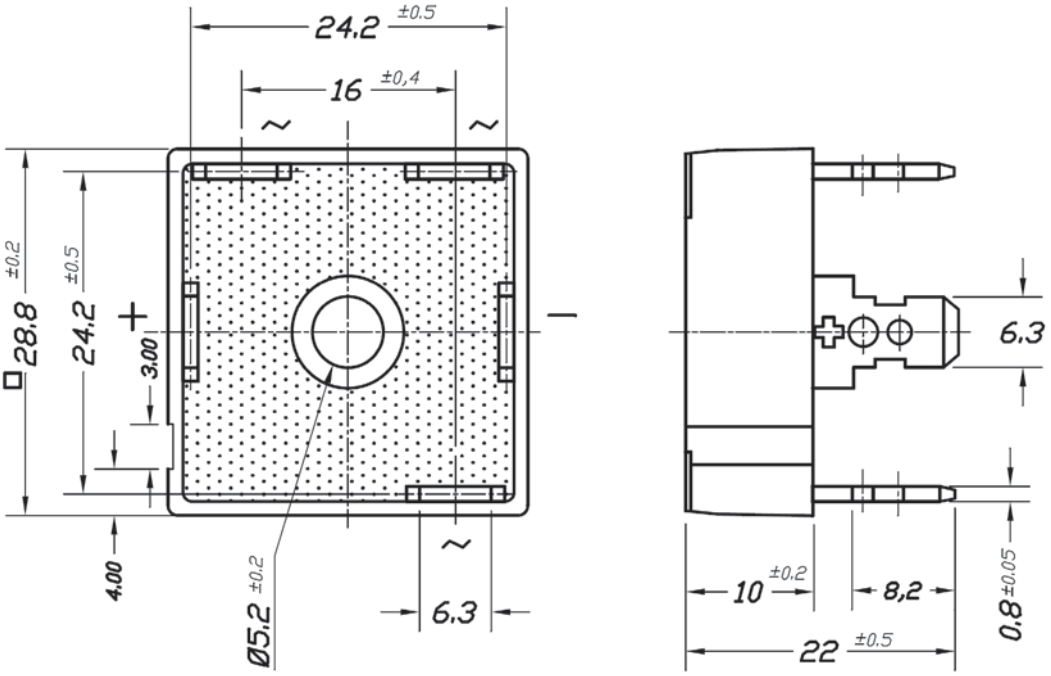
G 50a



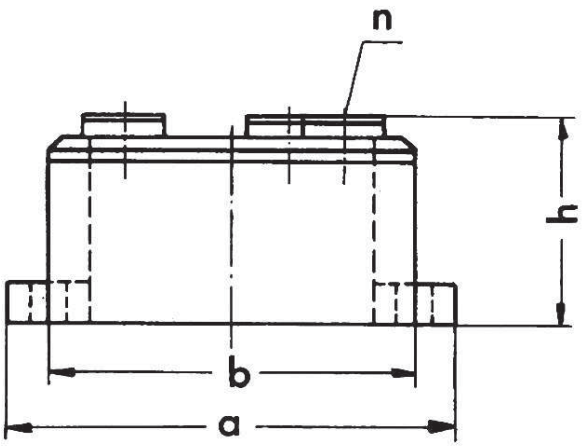
Dimensions in mm

Cases

G 10b, G 11b



G 12, G 13

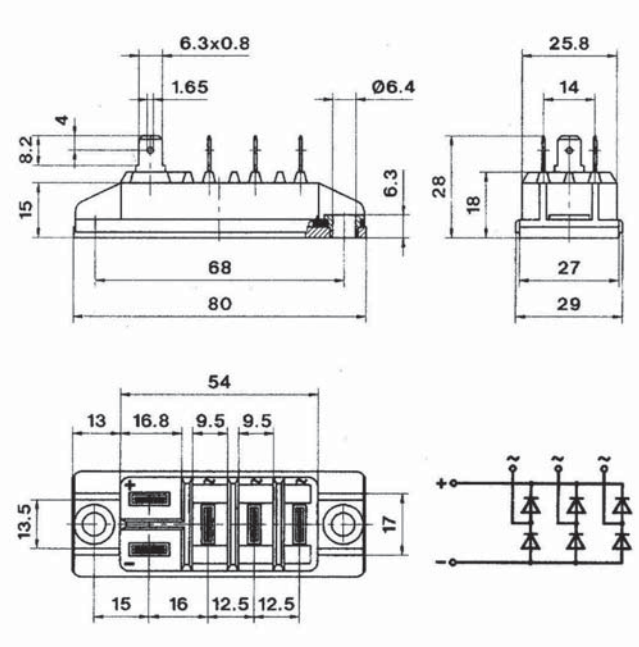


Cases	a	b	h	n
G 12, 13	55	45	24	M 4

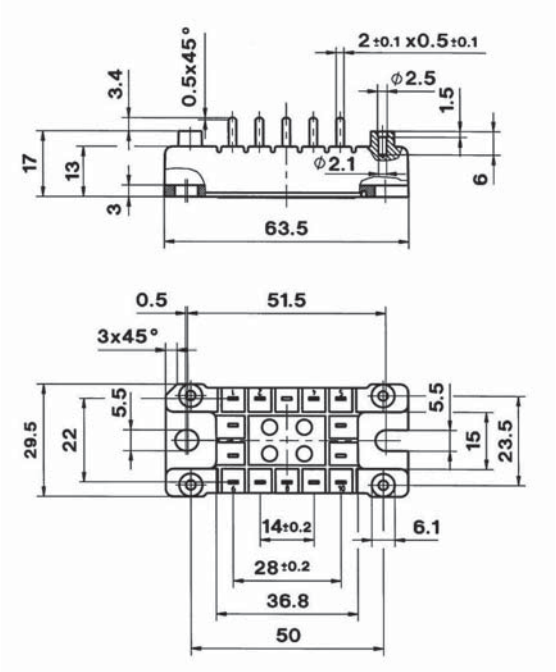
Dimensions in mm

Cases

G 51



G 55



Dimensions in mm

IPM
SEMIKRON Offers Highly Integrated IPMs

The SkiiP IPMs represent the benchmark for regenerative inverter solutions up to 5MW.

For detailed information
please refer data sheets.

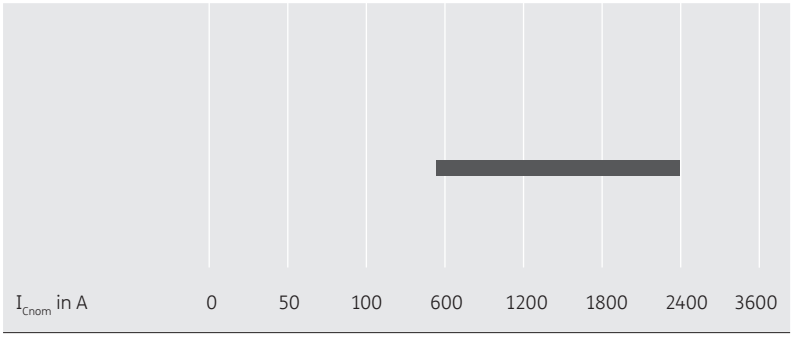
Further information:
www.semikron.com/ipm

IPM

SKiiP®3

6-pack
half bridge

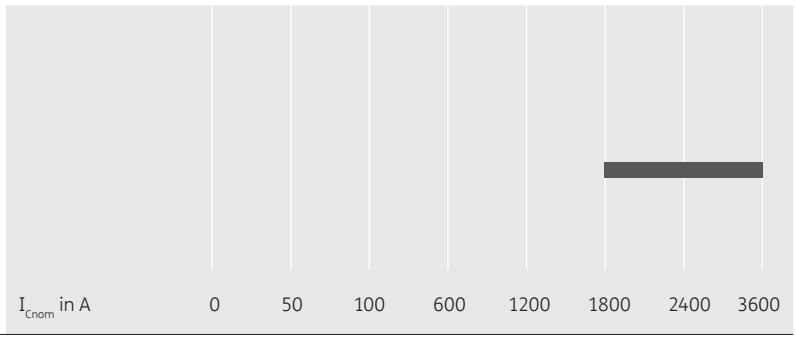
1200V up to 1700V



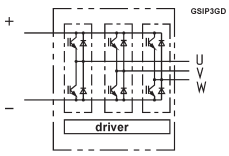
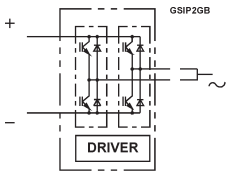
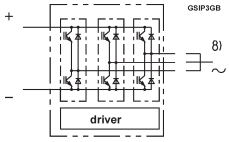
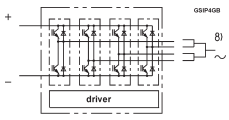
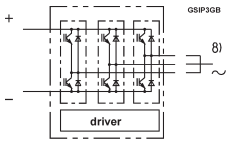
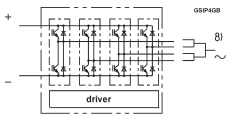
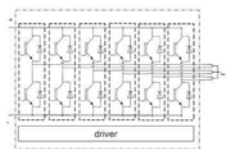
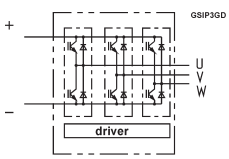
SKiiP®4

half bridge

1200V up to 1700V

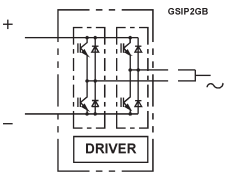
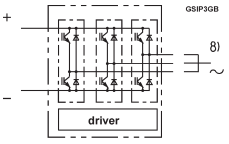
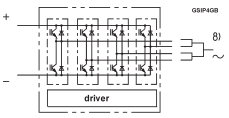
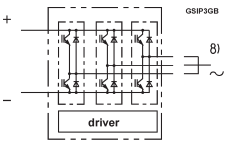
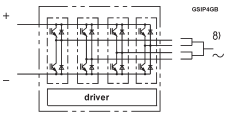
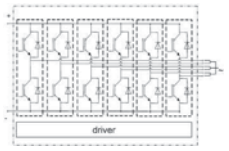


IPM / SKiiP

Type	IGBT				Diode			Module		
	I_C @ T_S = 25°C	I_{nom}	$V_{CE(sat)}$ @ T_j = 25°C typ.	E_{on} + E_{off}	I_F @ T_S = 25°C	V_F @ T_j = 25°C typ.	E_{rr}	Options F=F-Option U=U-Option S=SKiFace Adapter	Case	Circuit
	A	A	V	mJ	A	V	mJ			
1200V - IGBT 3 (Trench) - SKiiP3										
SKiiP 603 GD123-3DUL V3	627	600	1.7	195	508	1.50	28	-	S33	
SKiiP 603 GD123-3DUW V3	627	600	1.7	195	508	1.50	28	-	S33	
SKiiP 613 GD123-3DUL V3	577	600	1.7	195	466	1.50	28	-	S33	
SKiiP 613 GD123-3DUW V3	577	600	1.7	195	466	1.50	28	-	S33	
SKiiP 1213 GB123-2DL V3	1145	1200	1.7	390	925	1.50	56	F	S23	
SKiiP 1213 GB123-2DW V3	1145	1200	1.7	390	925	1.50	56	F	S23	
SKiiP 1813 GB123-3DL V3	1695	1800	1.7	585	1411	1.50	84	F,U	S33	
SKiiP 1813 GB123-3DW V3	1695	1800	1.7	585	1411	1.50	84	F,U	S33	
SKiiP 2413 GB123-4DL V3	2280	2400	1.7	780	1807	1.50	112	F,U	S43	
SKiiP 2413 GB123-4DW V3	2280	2400	1.7	780	1807	1.50	112	F,U	S43	
1200V - IGBT 4 (Trench) - SKiiP4										
SKiiP 1814 GB12E4-3DUL	2345	1800	2.01	1260	1776	2.33	150	F,S	S34	
SKiiP 1814 GB12E4-3DUW	2345	1800	2.01	1260	1776	2.33	150	F,S	S34	
SKiiP 1814 GB12E4-3DUSL	2345	1800	2.01	1260	1776	2.33	150	F,S	S34	
SKiiP 2414 GB12E4-4DUL	3109	2400	2.01	1680	2369	2.33	200	F,S	S44	
SKiiP 2414 GB12E4-4DUW	3109	2400	2.01	1680	2369	2.33	200	F,S	S44	
SKiiP 2414 GB12E4-4DUSL	3109	2400	2.01	1680	2369	2.33	200	F,S	S44	
SKiiP 3614 GB12E4-6DUL	4664	3600	2.01	2520	3558	2.33	300	F,S	S64	
SKiiP 3614 GB12E4-6DUW	4664	3600	2.01	2520	3558	2.33	300	F,S	S64	
SKiiP 3614 GB12E4-6DULR	4664	3600	2.01	2520	3558	2.33	300	F,S	S64	
SKiiP 3614 GB12E4-6DUSL	4664	3600	2.01	2520	3558	2.33	300	F,S	S64	
1700V - IGBT 3 (Trench) - SKiiP3										
SKiiP 513 GD172-3DUL V3	540	500	1.9	288	438	2.00	43	-	S33	
SKiiP 513 GD172-3DUW V3	540	500	1.9	288	438	2.00	43	-	S33	
SKiiP 603 GD172-3DUL V3	587	570	1.9	288	476	2.00	43	-	S33	
SKiiP 603 GD172-3DUW V3	570	570	1.9	288	476	2.00	43	-	S33	

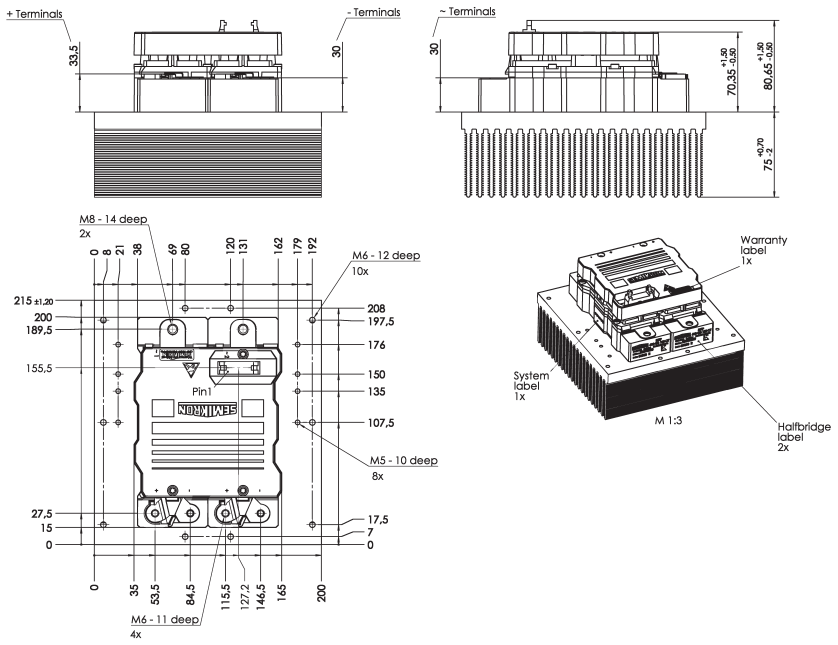
6

IPM / SKiiP

Type	IGBT				Diode			Module		
	I_C @ T_S = 25°C	I_{nom}	$V_{CE(sat)}$ @ T_j = 25°C typ.	E_{on} + E_{off}	I_F @ T_S = 25°C	V_F @ T_j = 25°C typ.	E_{rr}	Options F=F-Option U=U-Option S=SKiFace Adapter	Case	Circuit
	A	A	V	mJ	A	V	mJ			
1700V - IGBT 3 (Trench) - SKiiP3										
SKiiP 1013 GB172-2DL V3	1072	1000	1.9	575	879	2.00	86	F	S23	
SKiiP 1013 GB172-2DW V3	1072	1000	1.9	575	879	2.00	86	F	S23	
SKiiP 1203 GB172-2DL V3	1159	1200	1.9	575	961	2.00	86	F	S23	
SKiiP 1203 GB172-2DW V3	1159	1200	1.9	575	961	2.00	86	F	S23	
SKiiP 1513 GB172-3DL V3	1589	1500	1.9	863	1336	2.00	128	F,U	S33	
SKiiP 1513 GB172-3DW V3	1589	1500	1.9	863	1336	2.00	128	F,U	S33	
SKiiP 1803 GB172-3DL V3	1744	1800	1.9	863	1454	2.00	128	F,U	S33	
SKiiP 1803 GB172-3DW V3	1744	1800	1.9	863	1454	2.00	128	F,U	S33	
SKiiP 2013 GB172-4DL V3	2102	2000	1.9	1150	1758	2.00	171	F,U	S43	
SKiiP 2013 GB172-4DW V3	2102	2000	1.9	1150	1758	2.00	171	F,U	S43	
SKiiP 2403 GB172-4DL V3	2282	2400	1.9	1150	1921	2.00	171	F,U	S43	
SKiiP 2403 GB172-4DW V3	2282	2400	1.9	1150	1921	2.00	171	F,U	S43	
1700V - IGBT 4 (Trench) - SKiiP4										
SKiiP 1814 GB17E4-3DUL	2547	1800	2.12	2130	1771	2.02	498	F,S	S34	
SKiiP 1814 GB17E4-3DUW	2547	1800	2.12	2130	1771	2.02	498	F,S	S34	
SKiiP 2414 GB17E4-4DUL	3385	2400	2.12	2840	2362	2.02	664	F,S	S44	
SKiiP 2414 GB17E4-4DUW	3385	2400	2.12	2840	2362	2.02	664	F,S	S44	
SKiiP 3614 GB17E4-6DUL	5078	3600	2.12	6840	3547	2.02	996	F,S	S64	
SKiiP 3614 GB17E4-6DUW	5078	3600	2.12	6840	3547	2.02	996	F,S	S64	
SKiiP 3614 GB17E4-6DULR	5078	3600	2.12	6840	3547	2.02	996	F,S	S64	

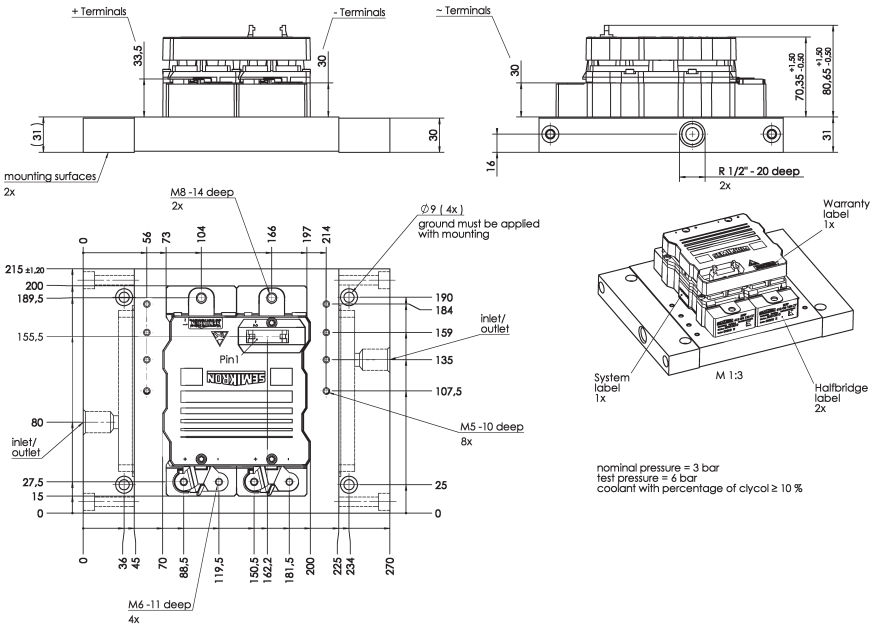
SKiiP 3

Case S 23 mounted on P3016 heat sink



Weight without heat sink:	1,7 kg
P3016:	4,4 kg

Case S 23 mounted on liquid cooled heat sink NWK 40

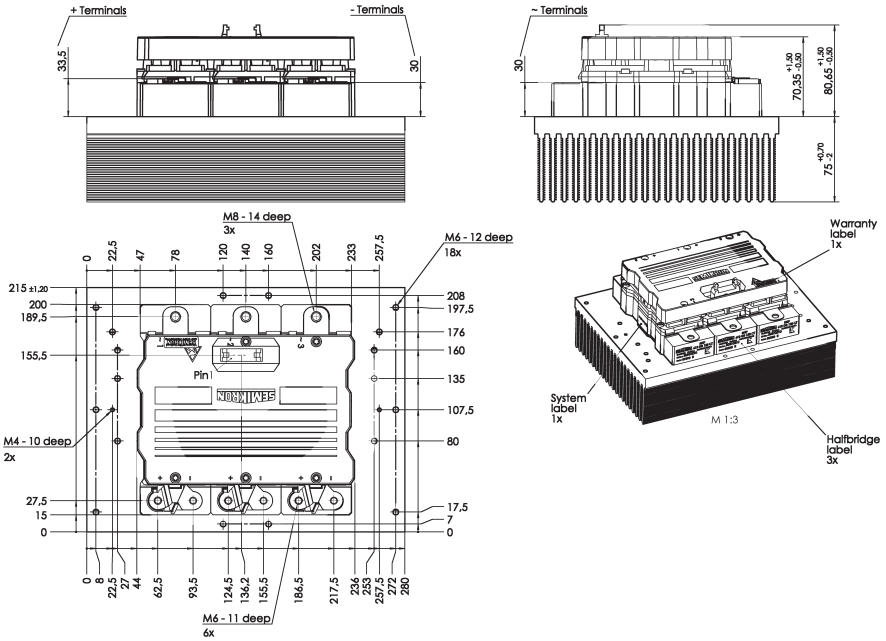


NWK 40:	2,8 kg

Dimensions in mm

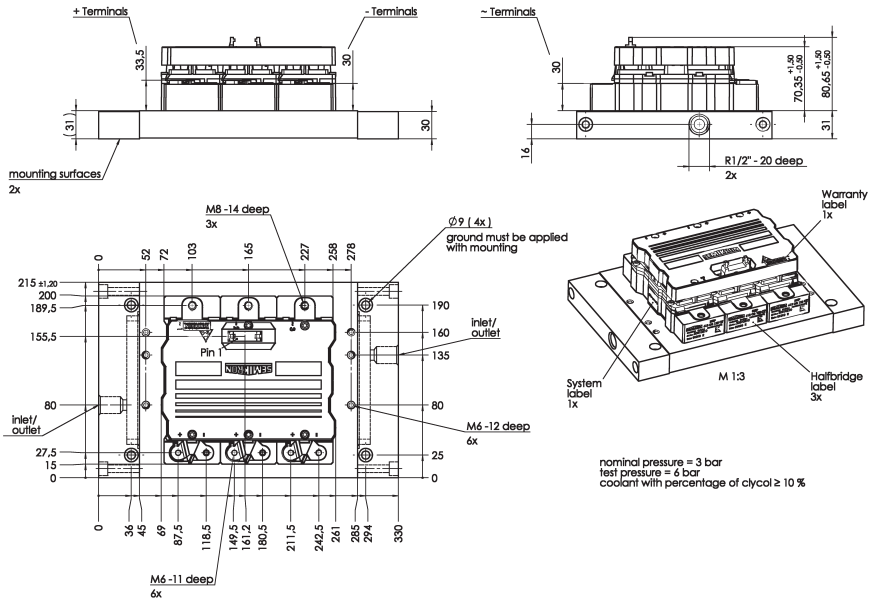
SKiiP 3

Case S 33 mounted on P3016 heat sink



Weight without heat sink:	2,4 kg
P3016:	6,2 kg

Case S 33 mounted on liquid cooled heat sink NWK 40

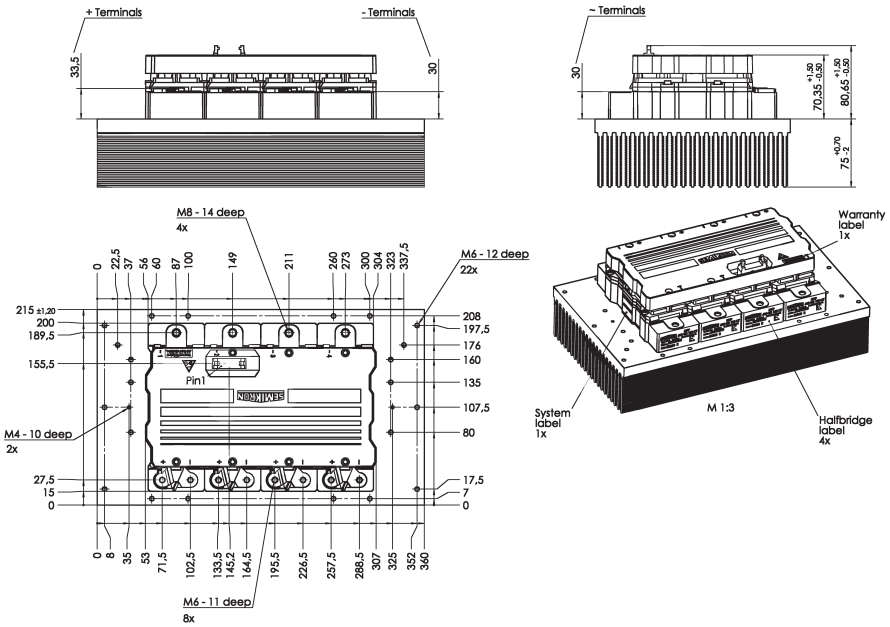


NWK 40:	5,2 kg

Dimensions in mm

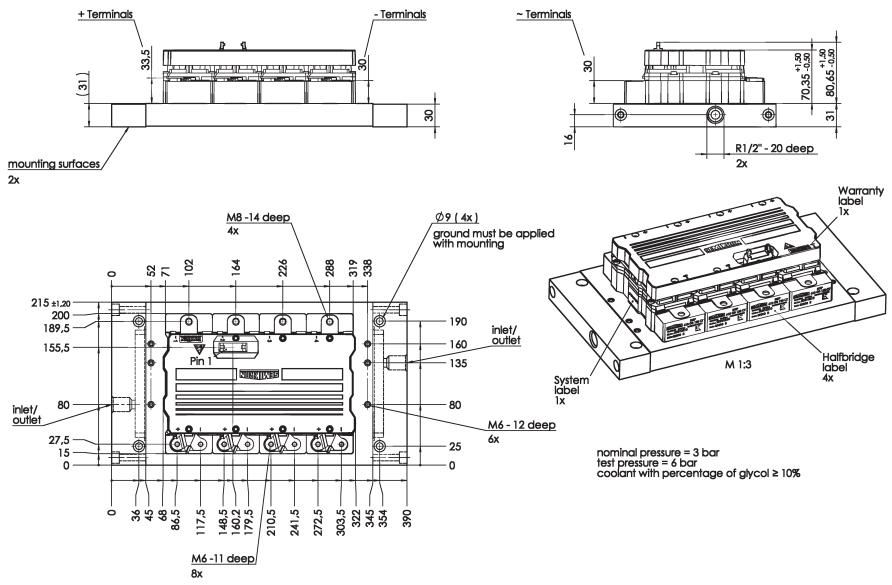
SKiiP 3

Case S 43 mounted on P3016 heat sink



Weight without heat sink:	3,1 kg
P3016:	8,0 kg

Case S 43 mounted on liquid cooled heat sink NWK 40

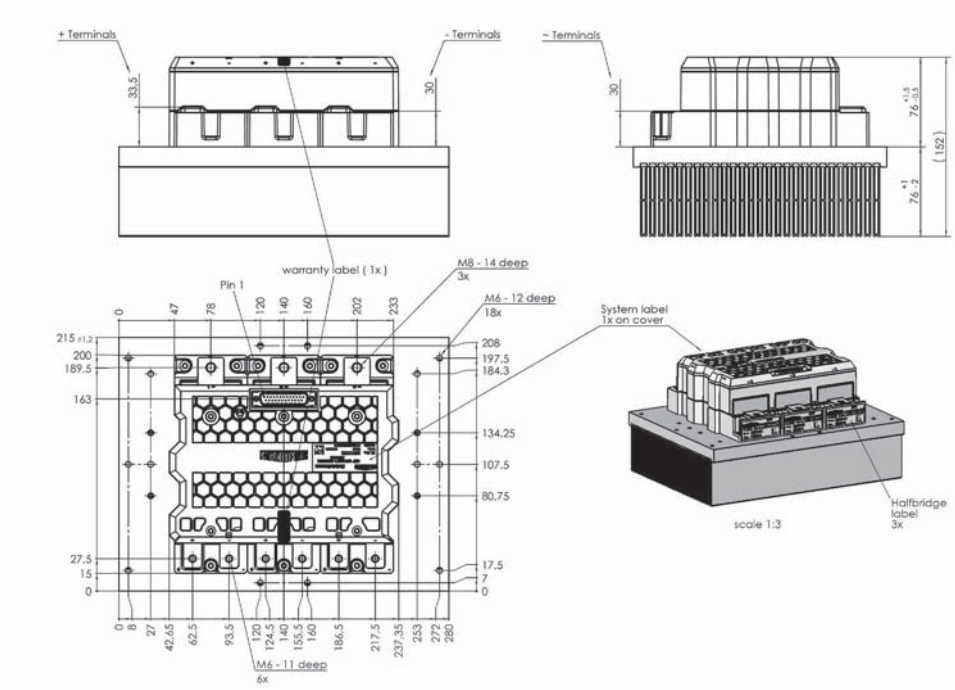


NWK 40:	6,2 kg

Dimensions in mm

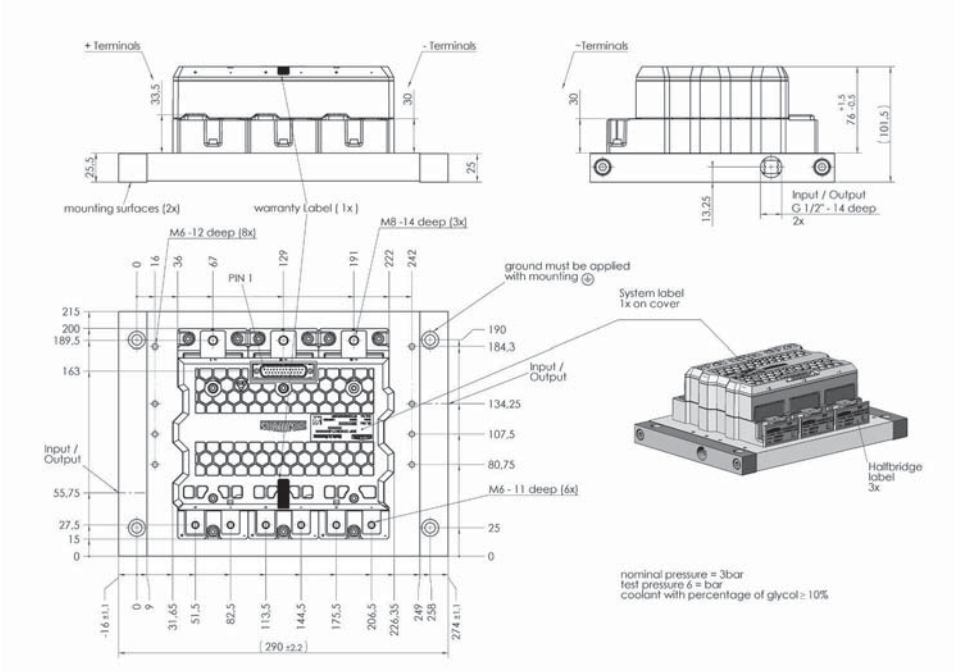
SKiiP 4

Case S 34 mounted on P4016 heat sink



Weight without heat sink:	2,48 kg
P4016:	5,9 kg

Case S 34 mounted on liquid cooled heat sink NHC

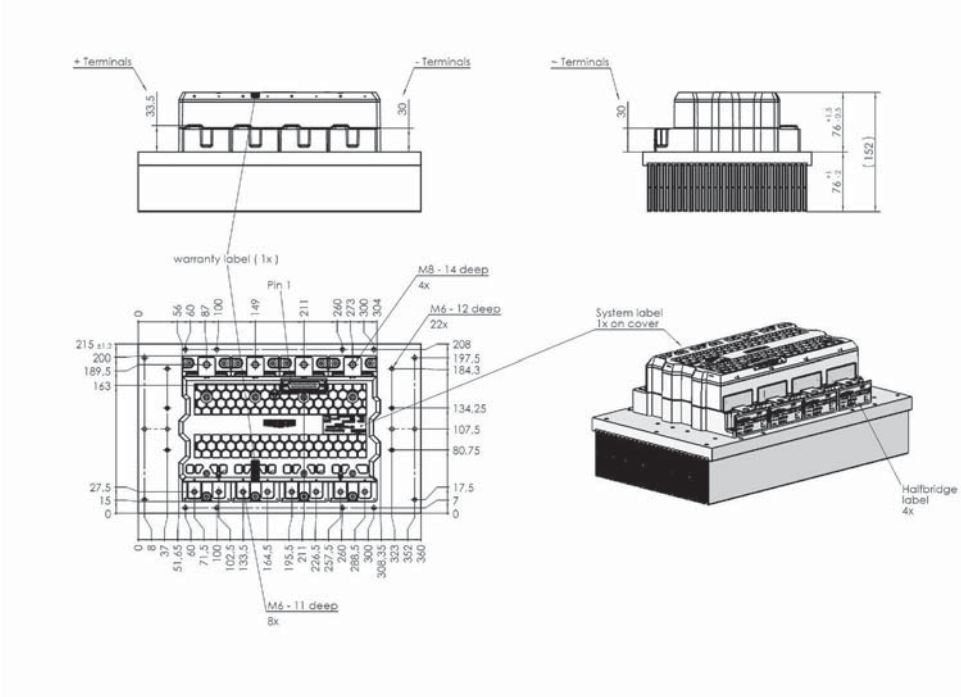


NHC:	3,49 kg

Dimensions in mm

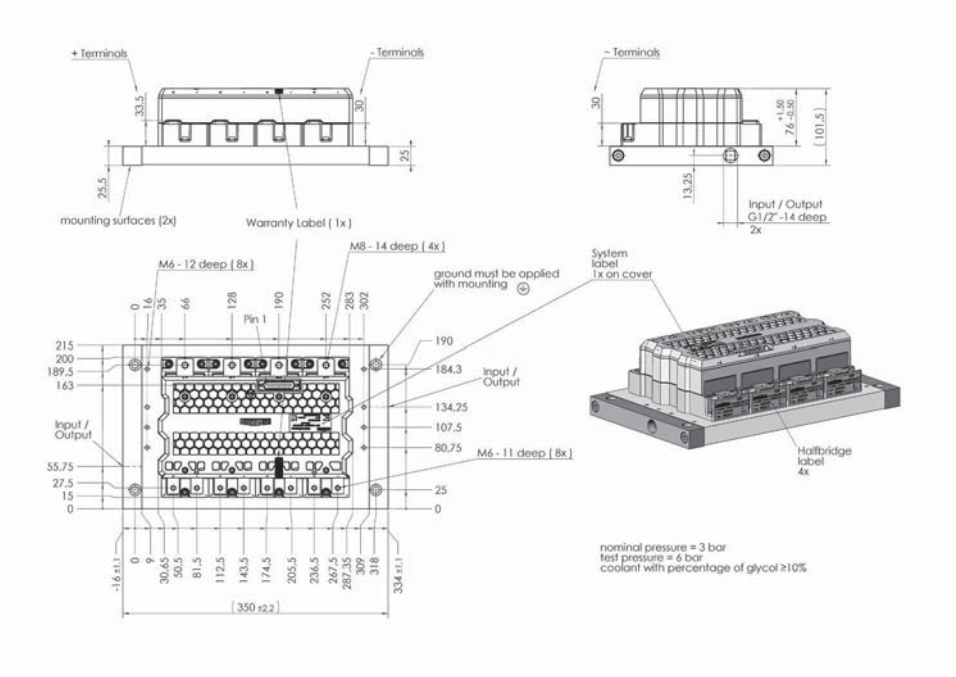
SKiiP 4

Case S 44 mounted on P4016 heat sink



Weight without heat sink:	3,22 kg
P4016:	7,55 kg

Case S 44 mounted on liquid cooled heat sink NHC

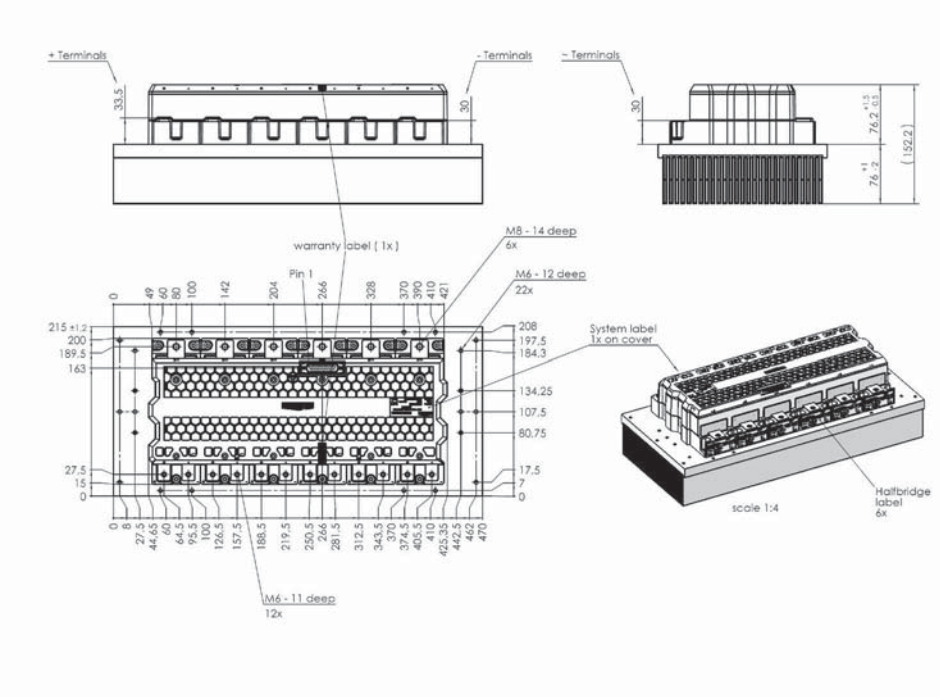


NHC:	4,25 kg

Dimensions in mm

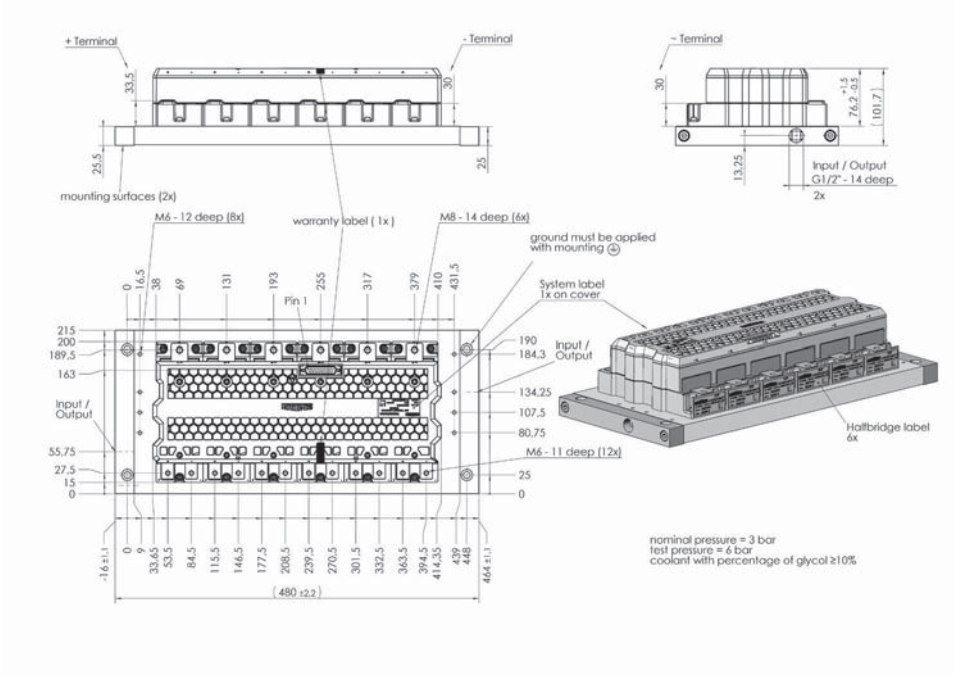
SKiiP 4

Case S 64 mounted on P4016 heat sink



Weight without heat sink:	4,84 kg
P4016:	9,9 kg

Case S 64 mounted on liquid cooled heat sink NHC

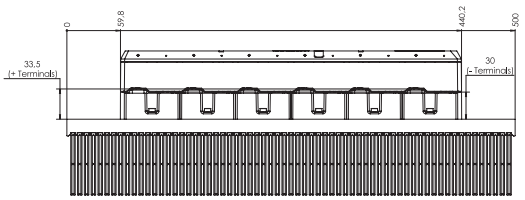


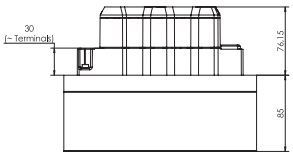
NHC:	5,77 kg

Dimensions in mm

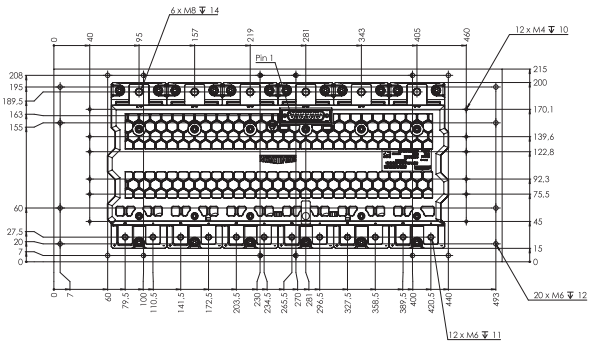
SKiiP 4

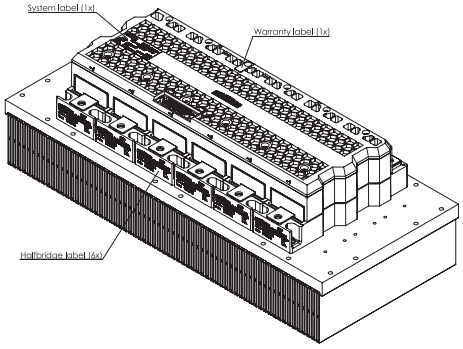
Case S 64 mounted on P4016 heat sink with 90° rotated fins





All dimensions in mm!





Weight without heat sink:	4,84 kg
P4016:	9,9 kg

Dimensions in mm

6

IPM / SKiiP Accessories

Type	
F-Option SKiiP4	
SKiiP4 F-Option	Fiber optic control board for SKiiP4
SKiiP4 F-Option with D-Sub connector	Fiber optic control board for SKiiP4
SKiiP3 Parallel Board	
SKiiP3 Parallel Board 4-fold	Board for paralleling of 4 SKiiP3, F-Option usage possible
SKiiP3 Parallel Board 3-fold	Board for paralleling of 3 SKiiP3, F-Option usage possible
SKiiP3 Parallel Board 2-fold	Board for paralleling of 2 SKiiP3, F-Option usage possible
SKiiP 4 Parallel Board	
SKiiP4 Parallel Board 4-fold without F-Option	Board for paralleling of 4 SKiiP4, F-Option usage not possible
SKiiP4 Parallel Board 4-fold F-Option	Board for paralleling of 4 SKiiP4, F-Option usage possible
SKiiP4 Parallel Board 3-fold without F-Option	Board for paralleling of 3 SKiiP4, F-Option usage not possible
SKiiP4 Parallel Board 3-fold F-Option	Board for paralleling of 3 SKiiP4, F-Option usage possible
SKiiP4 Parallel Board 2-fold without F-Option	Board for paralleling of 2 SKiiP4, F-Option usage not possible
SKiiP4 Parallel Board 2-fold F-Option	Board for paralleling of 2 SKiiP4, F-Option usage possible
SKiFace Adapter Board	
SKiiP4 SKiFace Adapter UZK	Adapter board to connect SKiiP4 to SKiiP3 controller with DC-Link voltage measurement function
SKiiP4 SKiFace Adapter Temp	Adapter board to connect SKiiP4 to SKiiP3 controller with temperatur measurement function
SKiiP Accessories	
SKiiP3 F-Option	Fiber optic control board for SKiiP3

IGBT Driver
SEMIKRON IGBT Driver Family

SEMIKRON offers two different IGBT driver families for each application. Driver cores of the SKHI and SKYPER family can be optimized by using adapterboards to each module type. Driver like the SKYPER Prime offer a fully qualified Plug & Play solution saving time and costs in the application. The SKYPER family with 1W to 10W output power per channel, cover the whole range between 30kW and 2MW inverters. The high integration of SEMIKRON's new ASIC chipset provide for safe IGBT gate control over the whole lifecycle. Short circuits are managed very fast by separate error channels.

SoftOff and over voltage feedback avoid dangerous over voltages. The mixed signal ASICs guarantee lowest tolerances over the full temperature range. MLI or paralleled IGBT topologies are managed by the adjustable error handling. With an optimized interface and the adjustable filter setting the SKYPER family operates safely in noisy environments. The SEMIKRON's adapter boards allow to build up fast a broad range of inverter platforms based on various different types of IGBT modules.

7

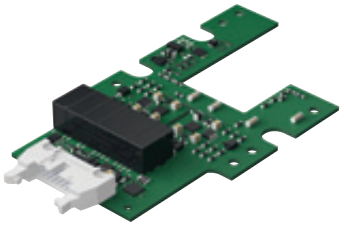
For detailed information
please refer data sheets.

Further information:
www.semikron.com/driver

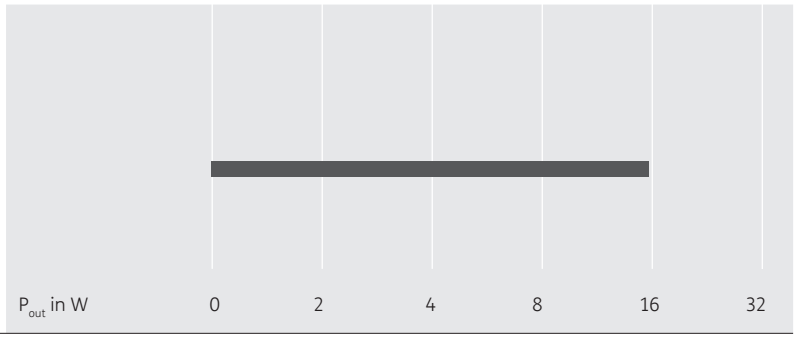
IGBT Driver

SKYPER®

Driver

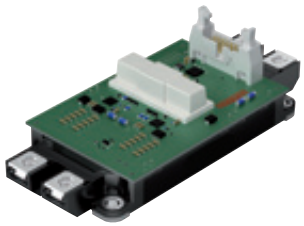


600V up to 1700V

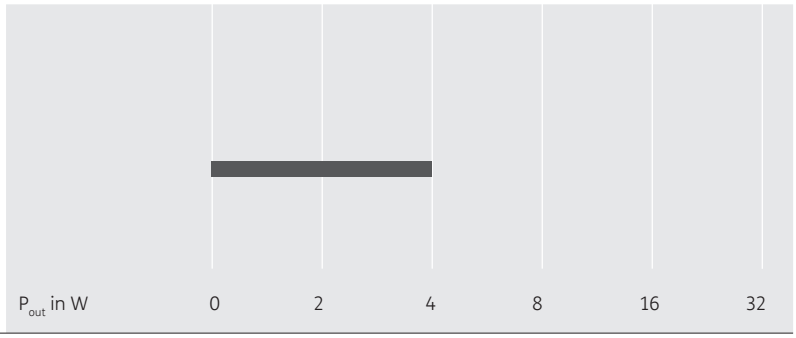


SKYPER® & SKHI

Driver Cores

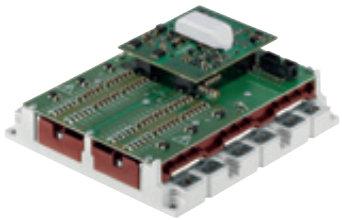


900V up to 1700V

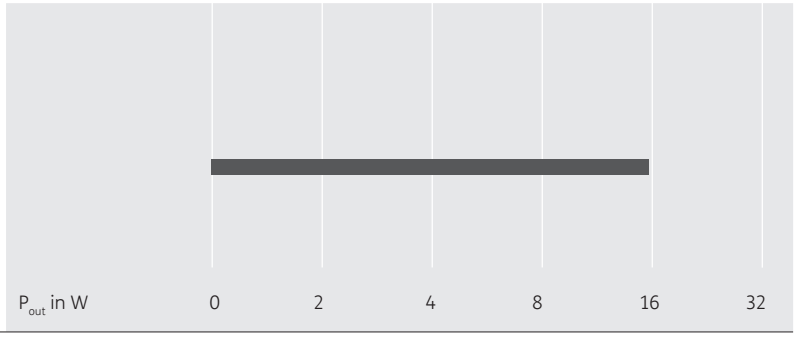


SKYPER® & SKHI

Adapterboards



1200V up to 1700V



IGBT Driver

Type	Channels	V_{CE} V	$V_{G(on)}$ V	$V_{G(off)}$ V	$I_{outPEAK}$ A	$Q_{out/pulse}$ µC	f_{max} kHz	VisoIIO kV	dv/dt kV/µs
Driver									
SKHI 10/12 R	1	1200	15	-8	8	9.6	100	2500	75
SKHI 10/17 R	1	1700	15	-8	8	9.6	100	4000	75
SKHI 23/12 R	2	1200	15	-8	8	4.8	100	2500	75
SKHI 23/17 R	2	1700	15	-8	8	4.8	100	4000	75
SKHIT 01 R[5)]	3	528	-	-	-	-	10	2500	-
SKYPER 12 press-fit 300 A	2	1700	15	-9	14	6	20	4000	50
SKYPER 12 press-fit 450A	2	1700	15	-9	14	6	13	4000	50
SKYPER 12 press-fit 600A	2	1700	15	-9	14	6	10	4000	50
SKYPER 12 press-fit C 300 A	2	1700	15	-9	14	6	20	4000	50
SKYPER 12 press-fit C 450A	2	1700	15	-9	14	6	13	4000	50
SKYPER 12 press-fit C 600A	2	1700	15	-9	14	6	10	4000	50
SKYPER PRIME 1000A	2	1700	15	-9	14	17	10	4000	50
Driver Core									
SKHI 21A R[6)]	2	1200	15	0	8	4	50	2500	50
SKHI 22 A/B H4 R	2	1700	15	-7	8	4	50	4000	50
SKHI 22 A/B R	2	1200	15	-7	8	4	50	2500	50
SKHI 24 R	2	1700	15	-8	15	5	50	4000	50
SKYPER 32 R	2	1700	15	-7	15	2.5	50	4000	50
SKYPER 32 PRO R	2	1700	15	-7	15	6.3	50	4000	50
SKYPER 42 R	2	1700	15	-8	30	50	100	4000	100
SKYPER 42 LJ R	2	1700	14.8	-8	20	20	100	4000	100
SKHI 61 R	6	900	14.9	-6.5	2	1	50	2500	15
SKHI 71 R	7	900	14.9	-6.5	2	1	50	2500	15
Adapter Board									
Board 1 SKYPER 32 R	2	1700	15	-7	15	2.5	50	4000	50
Board 1 SKYPER 32PRO R	2	1700	15	-7	15	6.3	50	4000	50
Board 2 // 4S SKYPER 42 R	2	1200	15	-8	30	50	100	4000	100
Board 2 generic SKYPER 42 R	2	1700	15	-8	30	50	100	4000	100
Board 2//3S SKYPER 42 R	2	1700	15	-8	30	50	100	4000	100
Board 2S SKYPER 32 PRO R Gold	2	1700	15	-7	15	6.3	50	4000	50
Board 2S SKYPER 32 R Gold	2	1700	15	-7	15	2.5	50	4000	50
Board 3S SKYPER 32 PRO R Gold	2	1700	15	-7	15	6.3	50	4000	50
Board 3S SKYPER 32 R Gold	2	1700	15	-7	15	2.5	50	4000	50
Board 4S SKYPER 32 PRO R Gold	2	1700	15	-7	15	6.3	50	4000	50
Board 4S SKYPER 32 R Gold	2	1700	15	-7	15	2.5	50	4000	50
Board 63 GB SKYPER 42 R	2	1700	15	-8	30	50	100	4000	100
Board 93 GB SKYPER 42 R	2	1700	15	-8	30	50	100	4000	100

Footnotes: 5) Thyristor Driver / 6) MOSFET Driver

Stacks
Fully Qualified Inverter Assemblies Tailored to Your Specific Needs

In addition to standard semiconductor components, SEMIKRON has developed a full range of power converter assemblies.

Solution center application engineers are available to offer specific power solutions by adapting present platforms or by designing fully customized converters.

For detailed information please refer data sheets.

Further information:
www.semikron.com/stacks

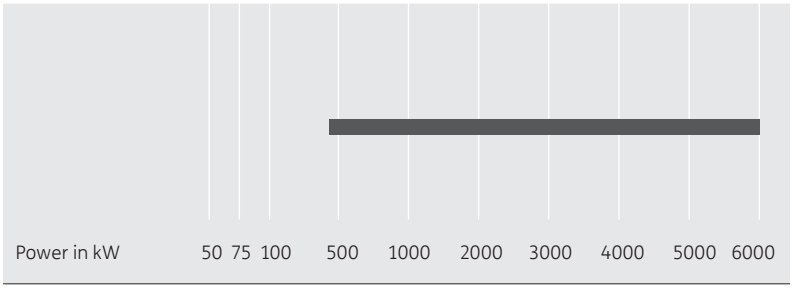
Stacks

Water cooled

SEMISTACK® RE

Synchronus wind generators

Double-fed wind generators
Solar inverters

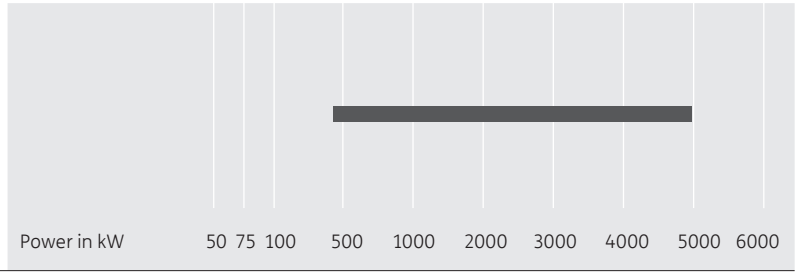


SKiiPRACK®

Synchronus wind generators

Double-fed wind generators

High power AC drives

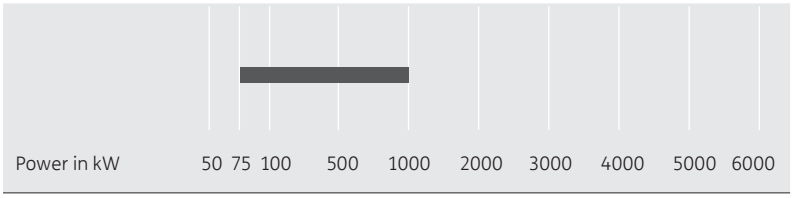


Air cooled

SEMIKUBE®

Solar inverters

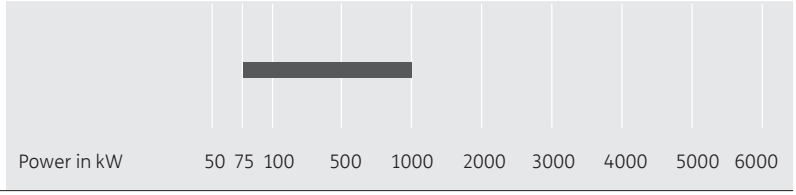
Pump and compressor drives



SEMIKUBE® SlimLine

Solar inverters

AC drives and servos



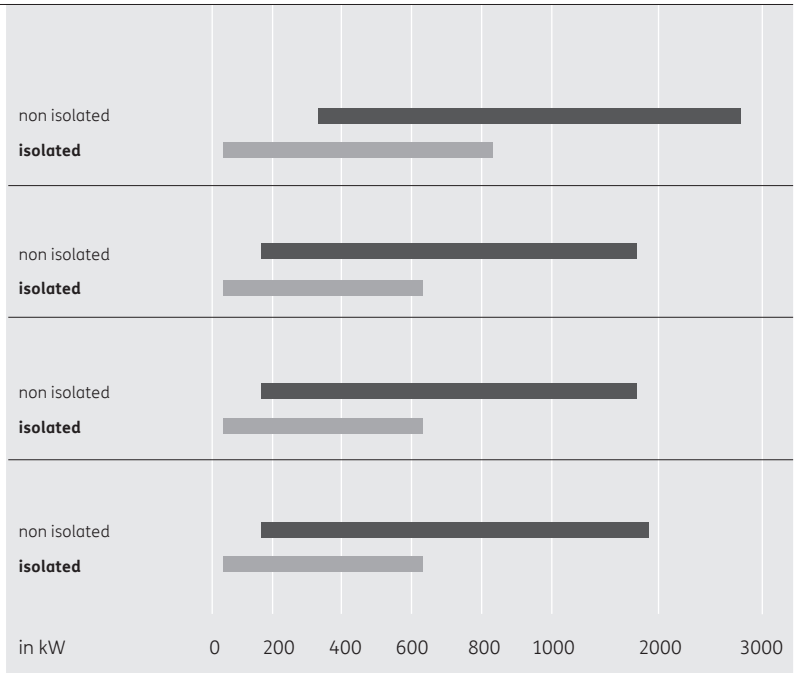
SEMISTACK® CLASSICS

B6U
3-phase uncontrolled rectifier

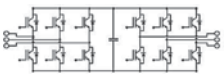
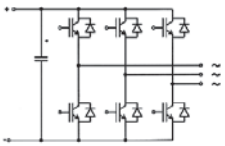
B6HK
3-phase half controlled rectifier

B6C
3-phase fully controlled rectifier

W3C
3-phase reverse parallel thyristor converter

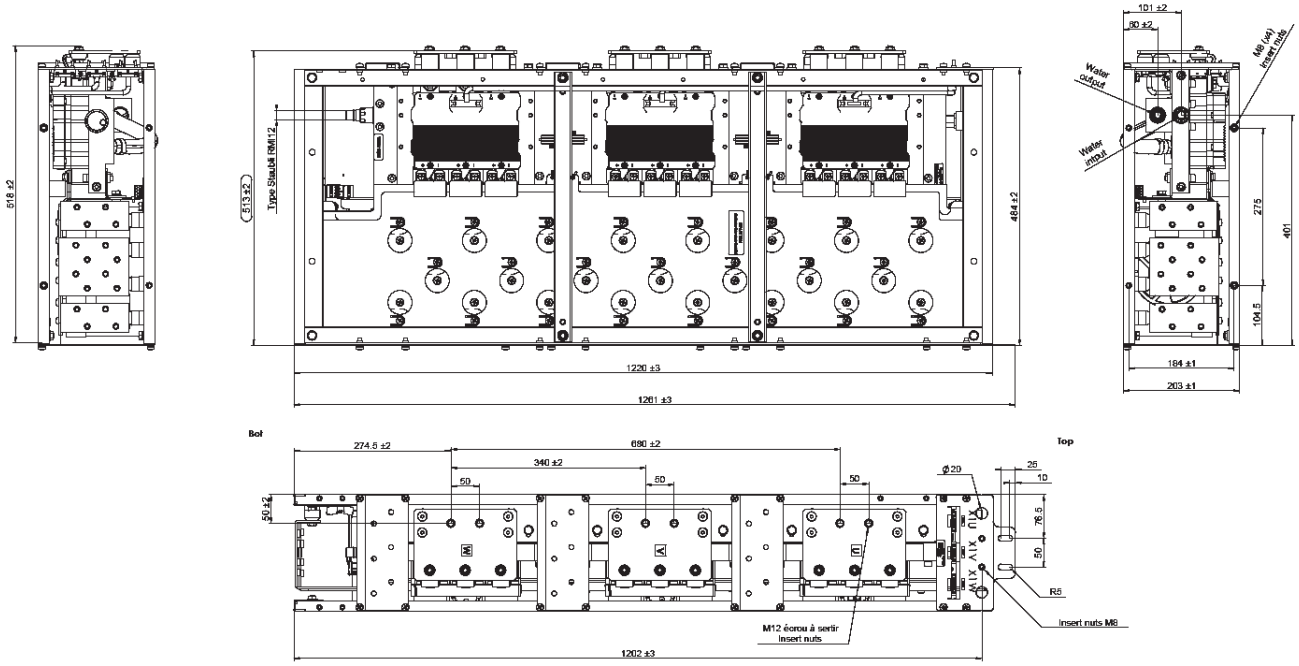


Stacks / SEMISTACK RE

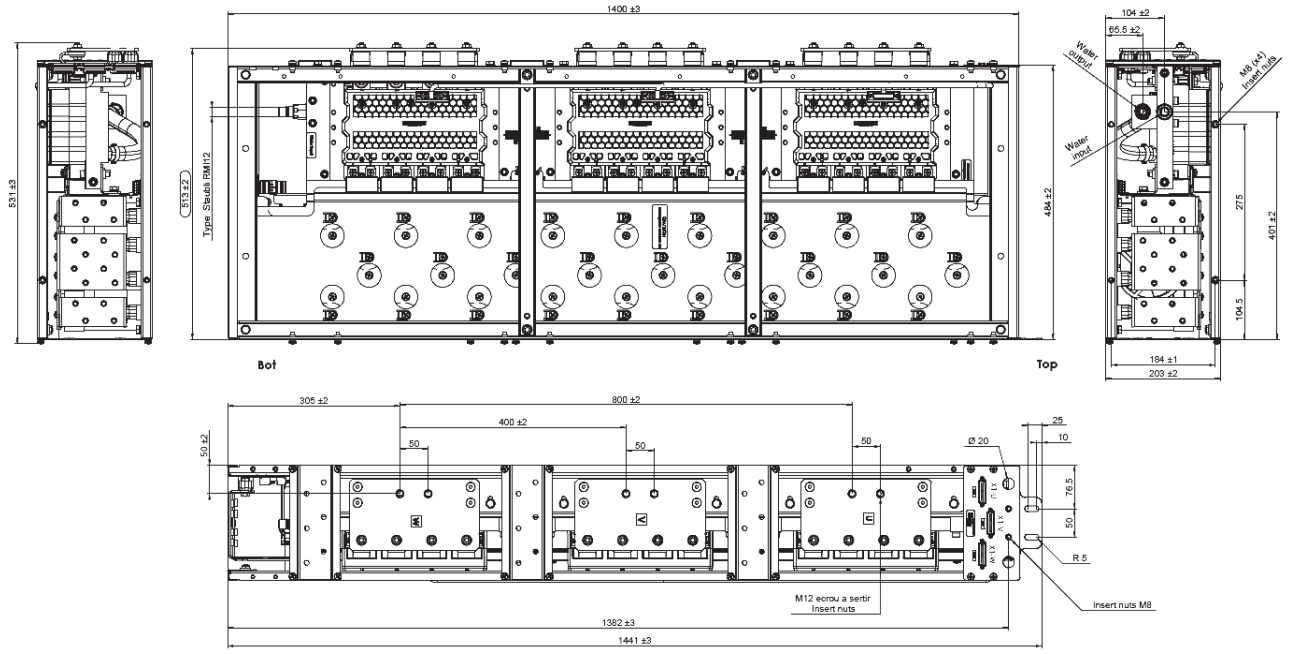
Type	V_{AC} V	V_{DC} V	Current A	Component Family	Cooling	Heatsink profile	Isolated	Circuit
4-Quadrant converter								
SKS B2 120 GDD 69/11 - A11 MA PB	690	1100	1200	SKiiP 3	Water/Glycol	-	yes	
SKS B2 140 GDD 69/12 U - A11 MA PB	690	1250	1400	SKiiP 4	Water/Glycol	-	yes	
3-phase inverter								
SKS B1 090 GD 69/11 - MA PB	690	1100	900	SKiiP 3	Water/Glycol	-	yes	
SKS B2 100 GD 69/11 - MA PB	690	1100	1000	SKiiP 3	Water/Glycol	-	yes	
SKS B2 120 GD 69/11 - MA PB	690	1100	1200	SKiiP 3	Water/Glycol	-	yes	
SKS B2 140 GD 69/12 U - MA PB	690	1250	1400	SKiiP 4	Water/Glycol	-	yes	

Cases

SKS B1 090 GD 69/11 - MA PB

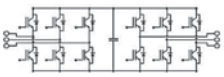


SKS B2 100 GD 69/11 - MA PB, SKS B2 120 GD 69/11 - MA PB, and SKS B2 140 GD 69/12 - MA PB



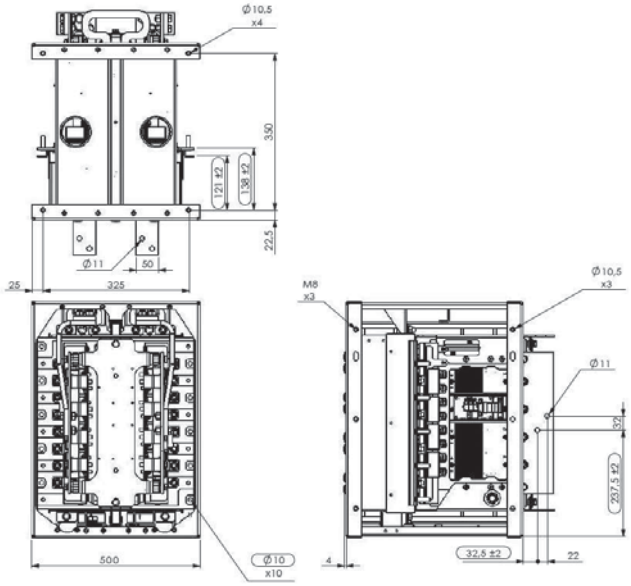
Dimensions in mm

Stacks / SKiiPRACK

Type	V_{AC} V	V_{DC} V	Current A	Component Family	Cooling	Heatsink profile	Isolated	Circuit
4-Quadrant converter								
SKS C 120 GDD 69/11 - A3A WA B1B	690	1100	1200	SKiiP 3	Water/Glycol	-	yes	
SKS C 240 GDD 69/11 - A6A MA B1C	690	1100	2400	SKiiP 3	Water/Glycol	-	yes	

Cases

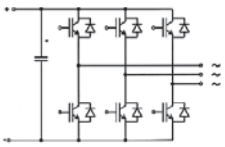
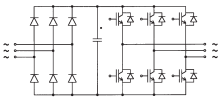
SKiiPRACK basic stack element, the CELL



3-Cell vertical integration

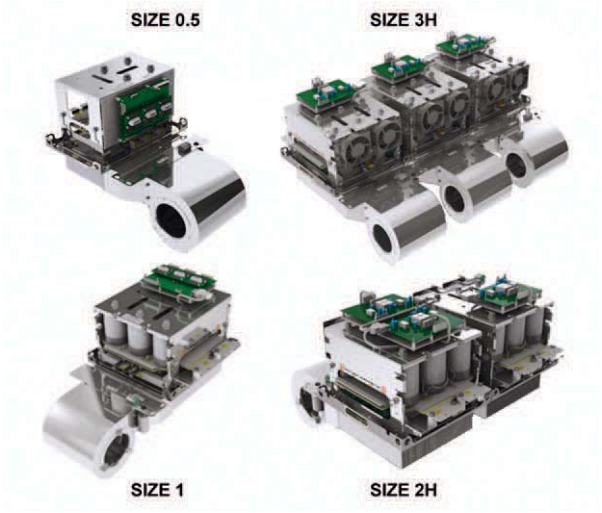
Dimensions in mm

Stacks / SEMIKUBE

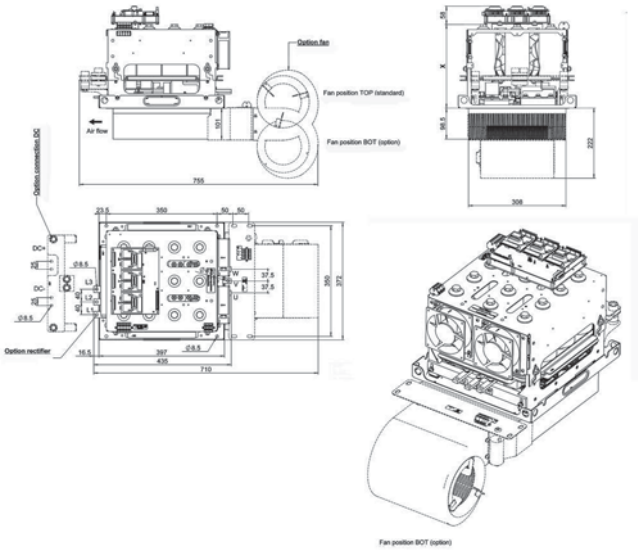
Type	V_{AC} V	V_{DC} V	Current A	Component Family	Cooling	Heatsink profile	Isolated	Circuit
3-phase inverter								
IGD-1-424-P1N4-DL-FA	460	750	200	SEMITRANS	Forced-air cooled	PX 308	yes	
IGD-2-424-P1N6-DH-FA	460	750	350	SEMITRANS	Forced-air cooled	PX 308	yes	
IGD-4-424-P1F7-BL-FA	460	750	750	SEMITRANS	Forced-air cooled	PX 308	yes	
IGD-8-326-E1F12-BH-FA	460	750	1230	SEMITRANS	Forced-air cooled	PX 308	yes	
IGD-8-426-E1F12-BH-FA	460	750	1470	SEMITRANS	Forced-air cooled	PX 308	yes	
IGD-8-424-P1F9-BH-FA	460	750	1470	SEMITRANS	Forced-air cooled	PX 308	yes	
3-phase rectifier and inverter								
IGDD6-1-326-D1616-E1N6-DL-FA	460	750	150	SEMITRANS/SEMIPACK	Forced-air cooled	PX 308	yes	
IGDD6-1-426-D1616-E1N6-DL-FA	460	750	180	SEMITRANS/SEMIPACK	Forced-air cooled	PX 308	yes	
IGDD6-2-326-D1616-E1F12-DH-FA	460	750	280	SEMITRANS/SEMIPACK	Forced-air cooled	PX 308	yes	
IGDD6-2-426-D1616-E1F12-DH-FA	460	750	330	SEMITRANS/SEMIPACK	Forced-air cooled	PX 308	yes	
IGDD6-4-326-D3816-E1F12-BL-FA	460	750	570	SEMITRANS/SEMIPACK	Forced-air cooled	PX 308	yes	
IGDD6-4-426-D3816-E1F12-BL-FA	460	750	680	SEMITRANS/SEMIPACK	Forced-air cooled	PX 308	yes	

Cases

Frames



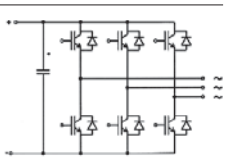
Size 1



Dimensions in mm

Stacks / SEMIKUBE SlimLine

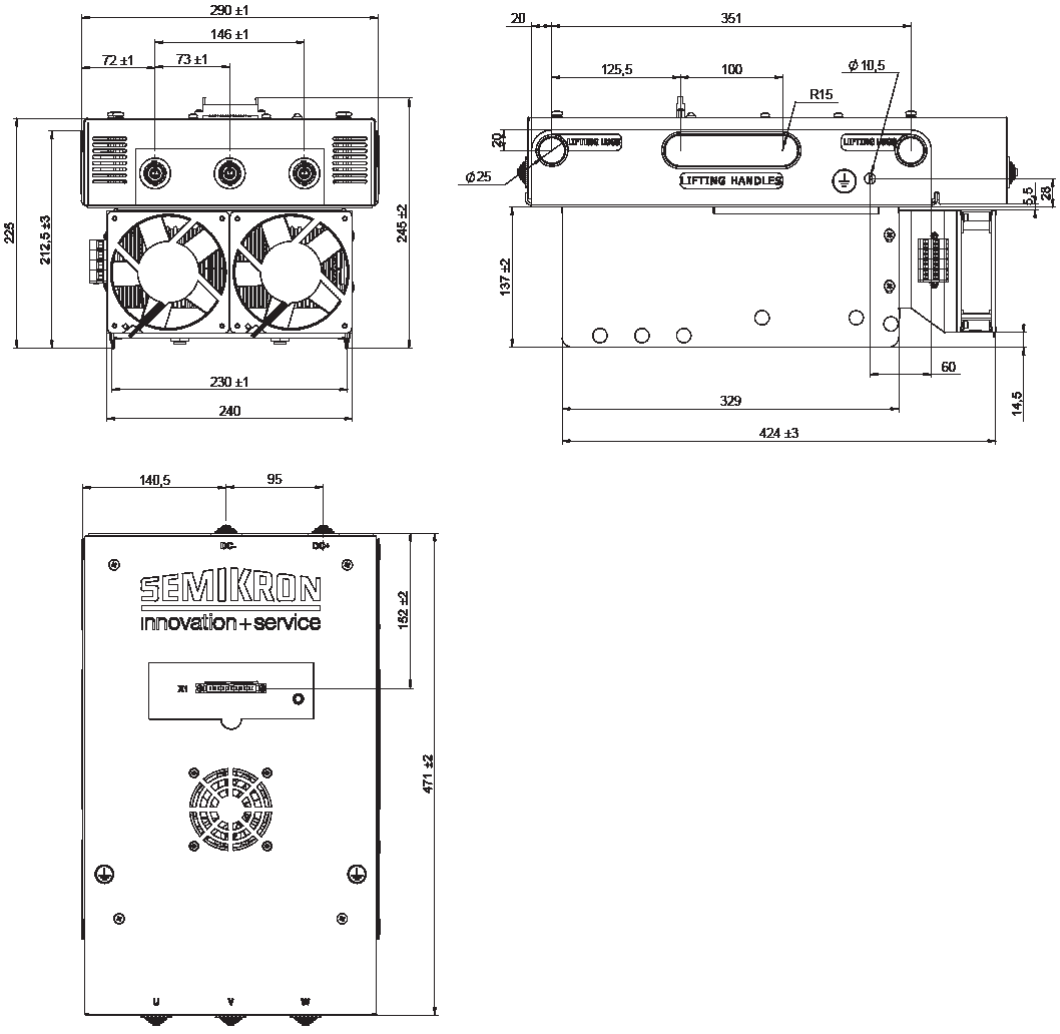
Type

	V_{AC} V	V_{DC} V	Current A	Component Family	Cooling	Frame	Isolated	Circuit
3-phase inverter								
SKS SL 20 GD 50/10 - C E4 P1 AF[1)]	500	1000	230	SEMITRANS	Forced-air cooled	SL20	yes	
SKS SL 40 GD 50/10 - C E4 P1 AF[1)]	500	1000	440	SEMITRANS	Forced-air cooled	SL40	yes	
SKS SL 80 GD 50/10 - C E4 P1 AF[1)]	500	1000	750	SEMITRANS	Forced-air cooled	SL80	yes	
SKS SL 150 GD 50/10 - C E4 P1 AF[1)]	500	1000	1500	SEMITRANS	Forced-air cooled	SL150	yes	

Footnotes: 1) New product

Cases

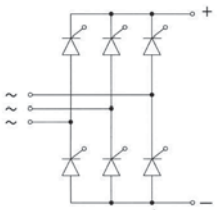
Frame SL20

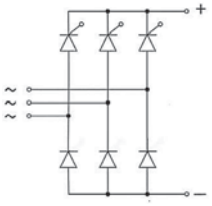


Dimensions in mm

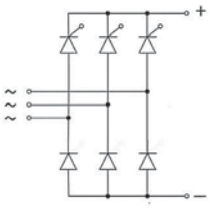
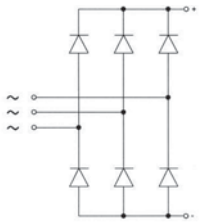
Stacks / SEMISTACK CLASSICS

Type	V_{AC} V	V_{DC} V	DC Current A	Component Family	Cooling	Heatsink profile	Isolated	Circuit
3-phase fully-controlled thyristor bridge rectifier								
SKS 88N B6C 60 V16	500	670	88	SEMIPACK 1	Natural cooled	P3/180	yes	
SKS 88N B6C 60 V16 SU	500	670	88	SEMIPACK 1	Natural cooled	P3/180	yes	
SKS 180F B6C 120 V16	500	670	180	SEMIPACK 1	Forced-air cooled	P3/180	yes	
SKS 180F B6C 120 V16 SU	500	670	180	SEMIPACK 1	Forced-air cooled	P3/180	yes	
SKS 215N B6C 145 V16	500	670	215	Stud devices	Natural cooled	P1/150	no	
SKS 215N B6C 145 V16 SU	500	670	215	Stud devices	Natural cooled	P1/150	no	
SKS 250F B6C 170 V16	500	670	250	SEMIPACK 2	Forced-air cooled	P3/265	yes	
SKS 250F B6C 170 V16 SU	500	670	250	SEMIPACK 2	Forced-air cooled	P3/265	yes	
SKS 355N B6C 240 V16	500	670	355	Stud devices	Natural cooled	P1/200	no	
SKS 355N B6C 240 V16 SU	500	670	355	Stud devices	Natural cooled	P1/200	no	
SKS 365F B6C 245 V16	500	670	365	SEMIPACK 2	Forced-air cooled	P16/200	yes	
SKS 365F B6C 245 V16 SU	500	670	365	SEMIPACK 2	Forced-air cooled	P16/200	yes	
SKS 570F B6C 380 V16	500	670	570	SEMIPACK 3	Forced-air cooled	P16/200	yes	
SKS 570F B6C 380 V16 SU	500	670	570	SEMIPACK 3	Forced-air cooled	P16/200	yes	
SKS 640F B6C 430 V16	500	670	640	SEMIPACK 3	Forced-air cooled	P16/200	yes	
SKS 640F B6C 430 V16 SU	500	670	640	SEMIPACK 3	Forced-air cooled	P16/200	yes	
SKS 700N B6C 470 V16	500	670	700	Capsules	Natural cooled	P11/415	no	
SKS 700N B6C 470 V16 SU	500	670	700	Capsules	Natural cooled	P11/415	no	
SKS 845N B6C 570 V16	500	670	845	Capsules	Natural cooled	U3/515	no	
SKS 845N B6C 570 V16 SU	500	670	845	Capsules	Natural cooled	U3/515	no	
SKS 970F B6C 650 V16	500	670	970	SEMIPACK 5	Forced-air cooled	P16/300	yes	
SKS 970F B6C 650 V16 SU	500	670	970	SEMIPACK 5	Forced-air cooled	P16/300	yes	
SKS 1000N B6C 670 V16	500	670	1000	Capsules	Natural cooled	U3/515	no	
SKS 1000N B6C 670 V16 SU	500	670	1000	Capsules	Natural cooled	U3/515	no	
SKS 1200F B6C 800 V16	500	670	1200	Capsules	Forced-air cooled	P17/130	no	
SKS 1200F B6C 800 V16 SU	500	670	1200	Capsules	Forced-air cooled	P17/130	no	
SKS 1500F B6C 1010 V16	500	670	1500	Capsules	Forced-air cooled	P17/130	no	
SKS 1500F B6C 1010 V16 SU	500	670	1500	Capsules	Forced-air cooled	P17/130	no	
SKS 1890F B6C 1270 V16	500	670	1890	Capsules	Forced-air cooled	P18/180	no	
SKS 1890F B6C 1270 V16 ZU	500	670	1890	Capsules	Forced-air cooled	P18/180	no	
SKS 2580F B6C 1730 V16	500	670	2580	Capsules	Forced-air cooled	N4/250	no	
SKS 2580F B6C 1730 V16 ZU	500	670	2580	Capsules	Forced-air cooled	N4/250	no	
3-phase half-controlled bridge rectifier								
SKS 88N B6HK 60 V16	500	670	88	SEMIPACK 1	Natural cooled	P3/180	yes	
SKS 88N B6HK 60 V16 SU	500	670	88	SEMIPACK 1	Natural cooled	P3/180	yes	
SKS 180F B6HK 120 V16	500	670	180	SEMIPACK 1	Forced-air cooled	P3/180	yes	
SKS 180F B6HK 120 V16 SU	500	670	180	SEMIPACK 1	Forced-air cooled	P3/180	yes	
SKS 215N B6HK 145 V16	500	670	215	Stud devices	Natural cooled	P1/150	no	
SKS 215N B6HK 145 V16 SU	500	670	215	Stud devices	Natural cooled	P1/150	no	
SKS 250F B6HK 170 V16	500	670	250	SEMIPACK 2	Forced-air cooled	P3/265	yes	
SKS 250F B6HK 170 V16 SU	500	670	250	SEMIPACK 2	Forced-air cooled	P3/265	yes	
SKS 355N B6HK 240 V16	500	670	355	Stud devices	Natural cooled	P1/200	no	
SKS 355N B6HK 240 V16 SU	500	670	355	Stud devices	Natural cooled	P1/200	no	
SKS 365F B6HK 245 V16	500	670	365	SEMIPACK 2	Forced-air cooled	P16/200	yes	
SKS 365F B6HK 245 V16 SU	500	670	365	SEMIPACK 2	Forced-air cooled	P16/200	yes	
SKS 570F B6HK 380 V16	500	670	570	SEMIPACK 3	Forced-air cooled	P16/200	yes	
SKS 570F B6HK 380 V16 SU	500	670	570	SEMIPACK 3	Forced-air cooled	P16/200	yes	
SKS 640F B6HK 430 V16	500	670	640	SEMIPACK 3	Forced-air cooled	P16/200	yes	
SKS 640F B6HK 430 V16 SU	500	670	640	SEMIPACK 3	Forced-air cooled	P16/200	yes	
SKS 700N B6HK 470 V16	500	670	700	Capsules	Natural cooled	P11/415	no	
SKS 700N B6HK 470 V16 SU	500	670	700	Capsules	Natural cooled	P11/415	no	
SKS 845N B6HK 570 V16	500	670	845	Capsules	Natural cooled	U3/515	no	
SKS 845N B6HK 570 V16 SU	500	670	845	Capsules	Natural cooled	U3/515	no	
SKS 970F B6HK 650 V16	500	670	970	SEMIPACK 5	Forced-air cooled	P16/300	yes	
SKS 970F B6HK 650 V16 SU	500	670	970	SEMIPACK 5	Forced-air cooled	P16/300	yes	
SKS 1000N B6HK 670 V16	500	670	1000	Capsules	Natural cooled	U3/515	no	



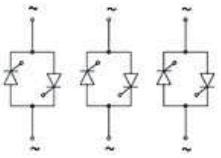


Stacks / SEMISTACK CLASSICS

Type	V_{AC} V	V_{DC} V	DC Current A	Component Family	Cooling	Heatsink profile	Isolated	Circuit
3-phase half-controlled bridge rectifier								
SKS 1000N B6HK 670 V16 SU	500	670	1000	Capsules	Natural cooled	U3/515	no	
SKS 1200F B6HK 800 V16	500	670	1200	Capsules	Forced-air cooled	P17/130	no	
SKS 1200F B6HK 800 V16 SU	500	670	1200	Capsules	Forced-air cooled	P17/130	no	
SKS 1500F B6HK 1010 V16	500	670	1500	Capsules	Forced-air cooled	P17/130	no	
SKS 1500F B6HK 1010 V16 SU	500	670	1500	Capsules	Forced-air cooled	P17/130	no	
SKS 1890F B6HK 1270 V16	500	670	1890	Capsules	Forced-air cooled	P18/180	no	
SKS 1890F B6HK 1270 V16 ZU	500	670	1890	Capsules	Forced-air cooled	P18/180	no	
SKS 2580F B6HK 1730 V16	500	670	2580	Capsules	Forced-air cooled	N4/250	no	
SKS 2580F B6HK 1730 V16 ZU	500	670	2580	Capsules	Forced-air cooled	N4/250	no	
3-phase uncontrolled bridge rectifier								
SKS 91N B6U 60 V16	500	670	91	SEMIPACK 1	Natural cooled	P3/180	yes	
SKS 91N B6U 60 V16 SU	500	670	91	SEMIPACK 1	Natural cooled	P3/180	yes	
SKS 185F B6U 125 V16	500	670	185	SEMIPACK 1	Forced-air cooled	P3/180	yes	
SKS 185F B6U 125 V16 SU	500	670	185	SEMIPACK 1	Forced-air cooled	P3/180	yes	
SKS 290F B6U 195 V16	500	670	290	SEMIPACK 2	Forced-air cooled	P3/265	yes	
SKS 290F B6U 195 V16 SU	500	670	290	SEMIPACK 2	Forced-air cooled	P3/265	yes	
SKS 425N B6U 285 V16	500	670	425	Stud devices	Natural cooled	P1/150	no	
SKS 425N B6U 285 V16 SU	500	670	425	Stud devices	Natural cooled	P1/150	no	
SKS 430F B6U 290 V16	500	670	430	SEMIPACK 2	Forced-air cooled	P16/200	yes	
SKS 430F B6U 290 V16 SU	500	670	430	SEMIPACK 2	Forced-air cooled	P16/200	yes	
SKS 535N B6U 360 V16	500	670	535	Stud devices	Natural cooled	P1/200	no	
SKS 535N B6U 360 V16 SU	500	670	535	Stud devices	Natural cooled	P1/200	no	
SKS 660F B6U 440 V16	500	670	660	SEMIPACK 3	Forced-air cooled	P16/200	yes	
SKS 660F B6U 440 V16 SU	500	670	660	SEMIPACK 3	Forced-air cooled	P16/200	yes	
SKS 850F B6U 570 V16	500	670	850	SEMIPACK 3	Forced-air cooled	P16/200	yes	
SKS 850F B6U 570 V16 SU	500	670	850	SEMIPACK 3	Forced-air cooled	P16/200	yes	
SKS 1185N B6U 795 V16	500	670	1185	Capsules	Natural cooled	P11/415	no	
SKS 1185N B6U 795 V16 SU	500	670	1185	Capsules	Natural cooled	P11/415	no	
SKS 1220F B6U 820 V16	500	670	1220	SEMIPACK 5	Forced-air cooled	P16/300	yes	
SKS 1220F B6U 820 V16 SU	500	670	1220	SEMIPACK 5	Forced-air cooled	P16/300	yes	
SKS 1630N B6U 1090 V16	500	670	1630	Capsules	Natural cooled	U3/515	no	
SKS 1630N B6U 1090 V16 ZU	500	670	1630	Capsules	Natural cooled	U3/515	no	
SKS 1910N B6U 1280 V16	500	670	1910	Capsules	Natural cooled	U3/515	no	
SKS 1910N B6U 1280 V16 ZU	500	670	1910	Capsules	Natural cooled	U3/515	no	
SKS 1950F B6U 1305 V16	500	670	1950	Capsules	Forced-air cooled	P17/130	no	
SKS 1950F B6U 1305 V16 ZU	500	670	1950	Capsules	Forced-air cooled	P17/130	no	
SKS 2300F B6U 1540 V16	500	670	2300	Capsules	Forced-air cooled	P18/180	no	
SKS 2300F B6U 1540 V16 ZU	500	670	2300	Capsules	Forced-air cooled	P18/180	no	
SKS 4015F B6U 2690 V16	500	670	4015	Capsules	Forced-air cooled	N4/250	no	

Stacks / SEMISTACK CLASSICS

Type	V_{AC} V	V_{DC} V	DC Current A	Component Family	Cooling	Heatsink profile	Isolated	Circuit
3-phase reverse parallel thyristor converter								
SKS 67N W3C 60 V16	500	-	67	SEMIPACK 1	Natural cooled	P3/180	yes	
SKS 67N W3C 60 V16 SU	500	-	67	SEMIPACK 1	Natural cooled	P3/180	yes	
SKS 140F W3C 120 V16	500	-	140	SEMIPACK 1	Forced-air cooled	P3/180	yes	
SKS 140F W3C 120 V16 SU	500	-	140	SEMIPACK 1	Forced-air cooled	P3/180	yes	
SKS 170N W3C 150 V16	500	-	170	Stud devices	Natural cooled	P1/150	no	
SKS 170N W3C 150 V16 SU	500	-	170	Stud devices	Natural cooled	P1/150	no	
SKS 195F W3C 170 V16	500	-	195	SEMIPACK 2	Forced-air cooled	P3/265	yes	
SKS 195F W3C 170 V16 SU	500	-	195	SEMIPACK 2	Forced-air cooled	P3/265	yes	
SKS 275N W3C 240 V16	500	-	275	Stud devices	Natural cooled	P1/200	no	
SKS 275N W3C 240 V16 SU	500	-	275	Stud devices	Natural cooled	P1/200	no	
SKS 290F W3C 250 V16	500	-	290	SEMIPACK 2	Forced-air cooled	P16/200	yes	
SKS 290F W3C 250 V16 SU	500	-	290	SEMIPACK 2	Forced-air cooled	P16/200	yes	
SKS 450F W3C 390 V16	500	-	450	SEMIPACK 3	Forced-air cooled	P16/200	yes	
SKS 450F W3C 390 V16 SU	500	-	450	SEMIPACK 3	Forced-air cooled	P16/200	yes	
SKS 520F W3C 450 V16	500	-	520	SEMIPACK 3	Forced-air cooled	P16/200	yes	
SKS 520F W3C 450 V16 SU	500	-	520	SEMIPACK 3	Forced-air cooled	P16/200	yes	
SKS 545N W3C 470 V16	500	-	545	Capsules	Natural cooled	P11/415	no	
SKS 545N W3C 470 V16 SU	500	-	545	Capsules	Natural cooled	P11/415	no	
SKS 650N W3C 560 V16	500	-	650	Capsules	Natural cooled	U3/515	no	
SKS 650N W3C 560 V16 SU	500	-	650	Capsules	Natural cooled	U3/515	no	
SKS 760F W3C 660 V16	500	-	760	SEMIPACK 5	Forced-air cooled	P16/300	yes	
SKS 760F W3C 660 V16 SU	500	-	760	SEMIPACK 5	Forced-air cooled	P16/300	yes	
SKS 780N W3C 675 V16	500	-	780	Capsules	Natural cooled	U3/515	no	
SKS 780N W3C 675 V16 SU	500	-	780	Capsules	Natural cooled	U3/515	no	
SKS 950F W3C 825 V16	500	-	950	Capsules	Forced-air cooled	P17/130	no	
SKS 950F W3C 825 V16 SU	500	-	950	Capsules	Forced-air cooled	P17/130	no	
SKS 1180F W3C 1020 V16	500	-	1180	Capsules	Forced-air cooled	P17/130	no	
SKS 1180F W3C 1020 V16 SU	500	-	1180	Capsules	Forced-air cooled	P17/130	no	
SKS 1540F W3C 1335 V16	500	-	1540	Capsules	Forced-air cooled	P18/180	no	
SKS 1540F W3C 1335 V16 SU	500	-	1540	Capsules	Forced-air cooled	P18/180	no	
SKS 2150F W3C 1860 V16	500	-	2150	Capsules	Forced-air cooled	N4/250	no	
SKS 2150F W3C 1860 V16 ZU	500	-	2150	Capsules	Forced-air cooled	N4/250	no	



Systems
Most Compact Power Electronics System for Utility Vehicles

SEMIKRON's inverter systems are already fully equipped with current sensors, IGBT drivers, DC link capacitors and a fast processor (DSP).

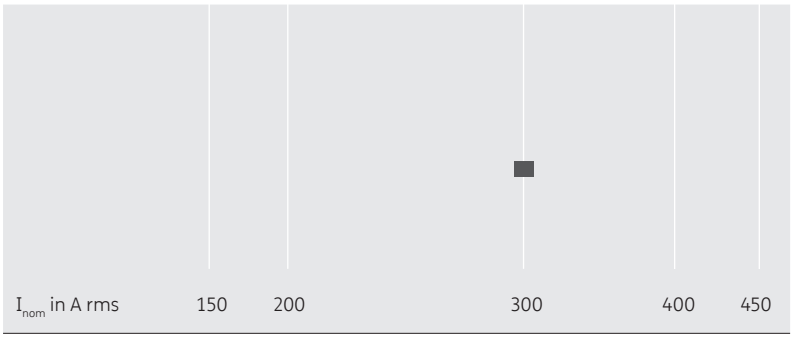
The systems are designed to operate with supply voltages of 24V up to 800V and with output power ratings of up to 250 kVA.

For detailed information please refer data sheets.

Further information:
www.semikron.com/systems

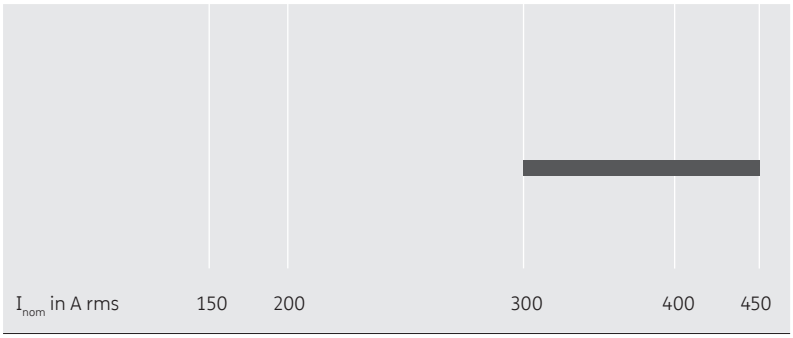
SKAI®2 IGBT Inverter

600V up to 1200V



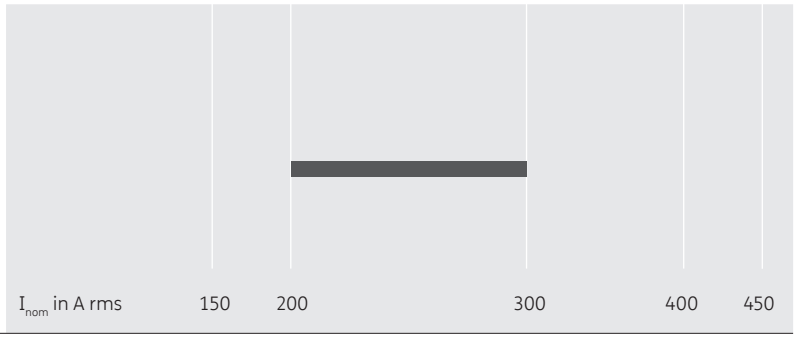
SKAI®2 MOSFET Single Inverter

24V up to 160V

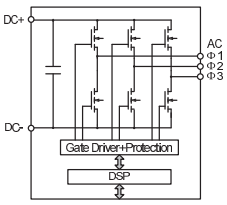
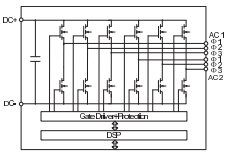
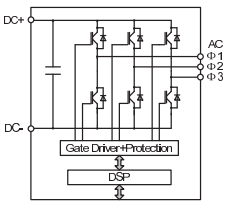
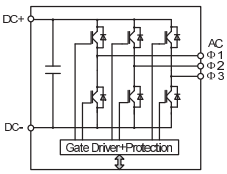


SKAI®2 MOSFET Dual Inverter

24V up to 160V

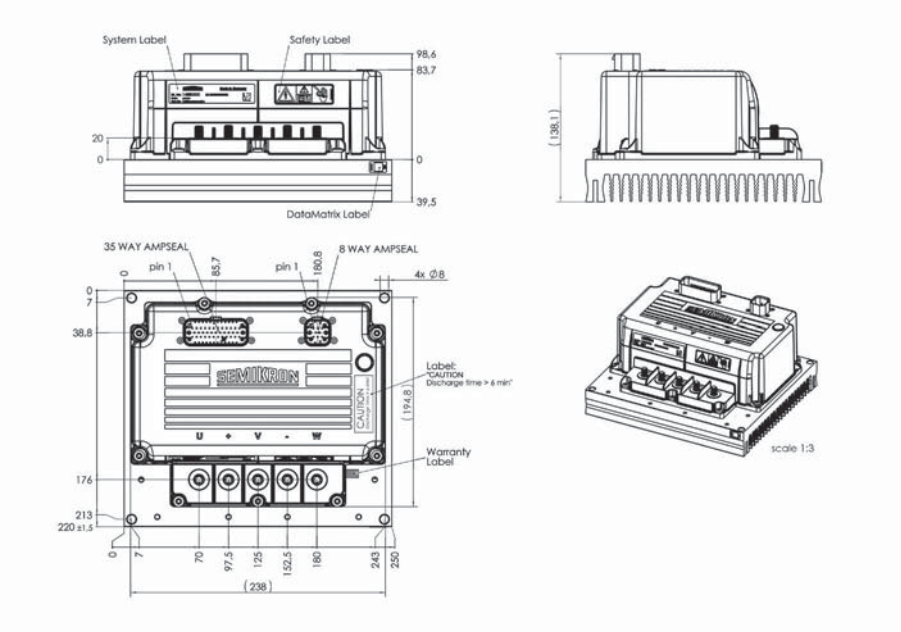


Systems / SKAI2

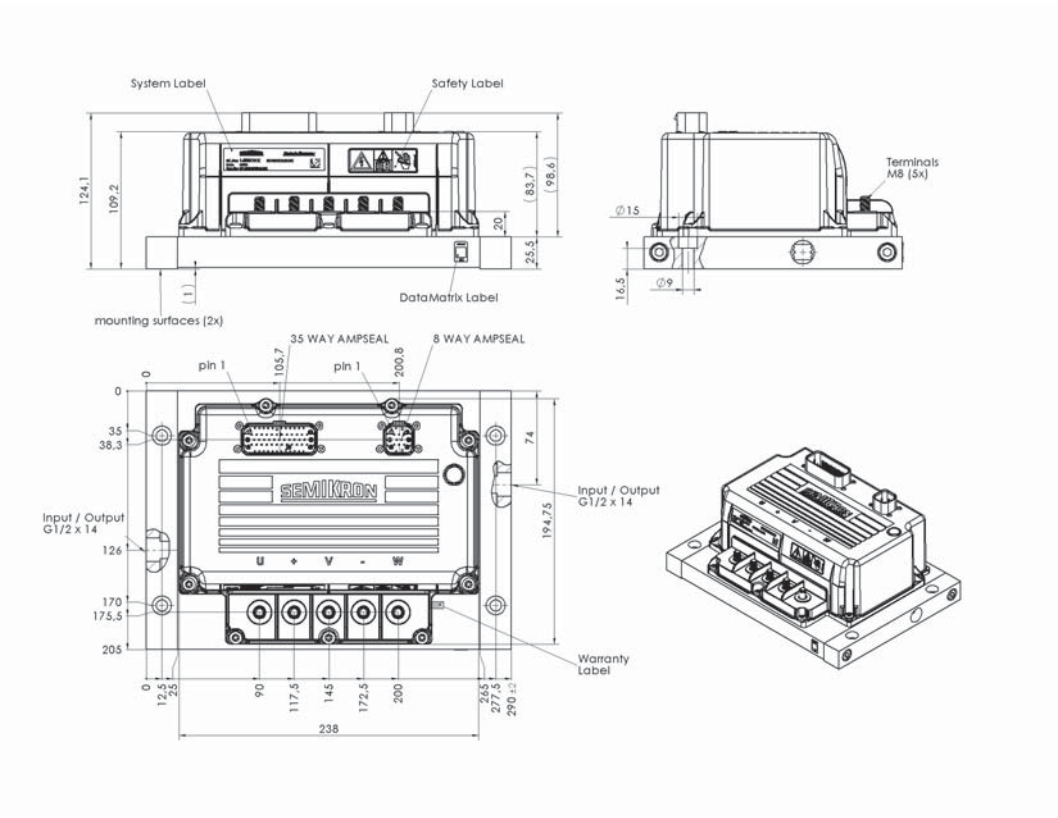
Type	$V_{battery\ (max)}$	I_{nom}	Topology	Cooling	DSP	Case	Circuit
	V	A_{rms}					
MOSFET - Three-phase inverter							
SKAI 60 A2 MD10-P	72	365	3-Phase	Baseplate	Yes	3	
SKAI 70 A2 MD15-W	115	450	3-Phase	Liquid	Yes	2	
SKAI 50 A2 MD20-L	160	300	3-Phase	Forced Air	Yes	1	
SKAI 50 A2 MD20-W	160	350	3-Phase	Liquid	Yes	2	
SKAI 70 A2 MM15-L	115	250	Dual 3-Phase	Forced Air	Yes	4	
SKAI 70 A2 MM15-P	115	250	Dual 3-Phase	Baseplate	Yes	6	
SKAI 70 A2 MM15-W	115	300	Dual 3-Phase	Liquid	Yes	5	
SKAI 50 A2 MM20-L	160	200	Dual 3-Phase	Forced Air	Yes	4	
SKAI 50 A2 MM20-W	160	250	Dual 3-Phase	Liquid	Yes	5	
IGBT - Three-phase inverter							
SKAI 90 A2 GD06-WCI	450	300	3-Phase	Liquid	Yes	7	
SKAI 45 A2 GD12-WCI	800	300	3-Phase	Liquid	Yes	7	
SKAI 90 A2 GD06-WDI	450	300	3-Phase	Liquid	No	7	
SKAI 45 A2 GD12-WDI	800	300	3-Phase	Liquid	No	7	

Cases

Case 1



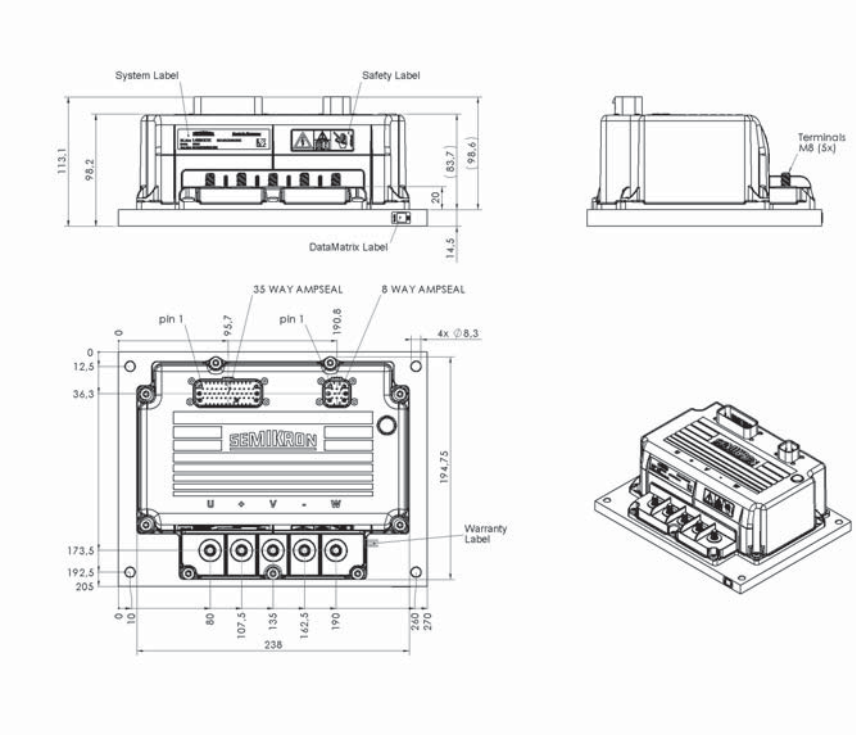
Case 2



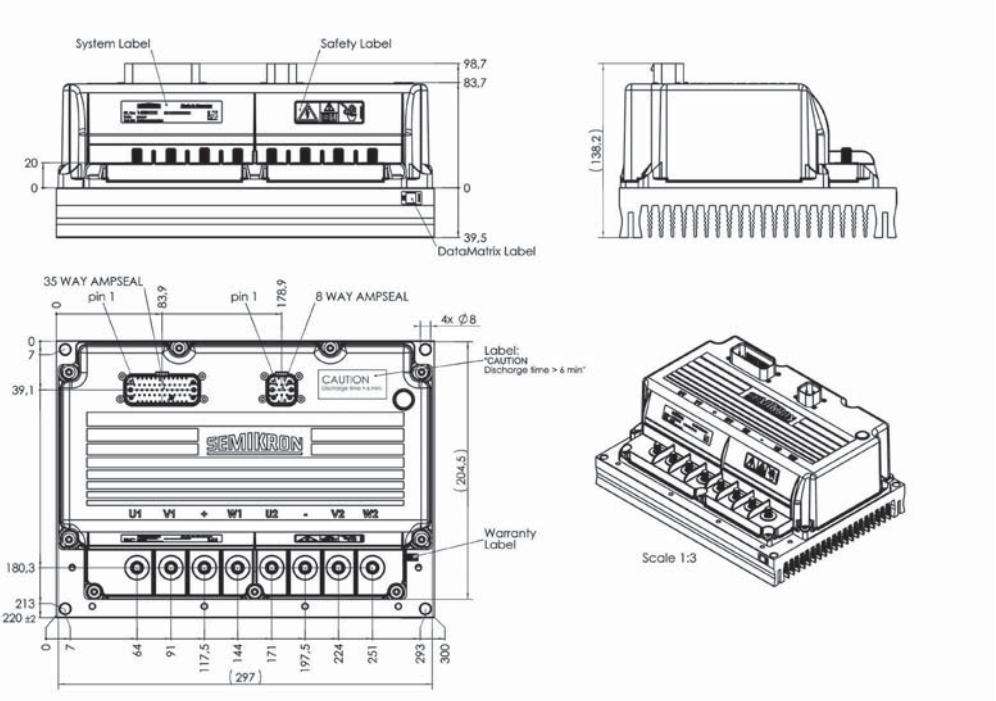
Dimensions in mm

Cases

Case 3



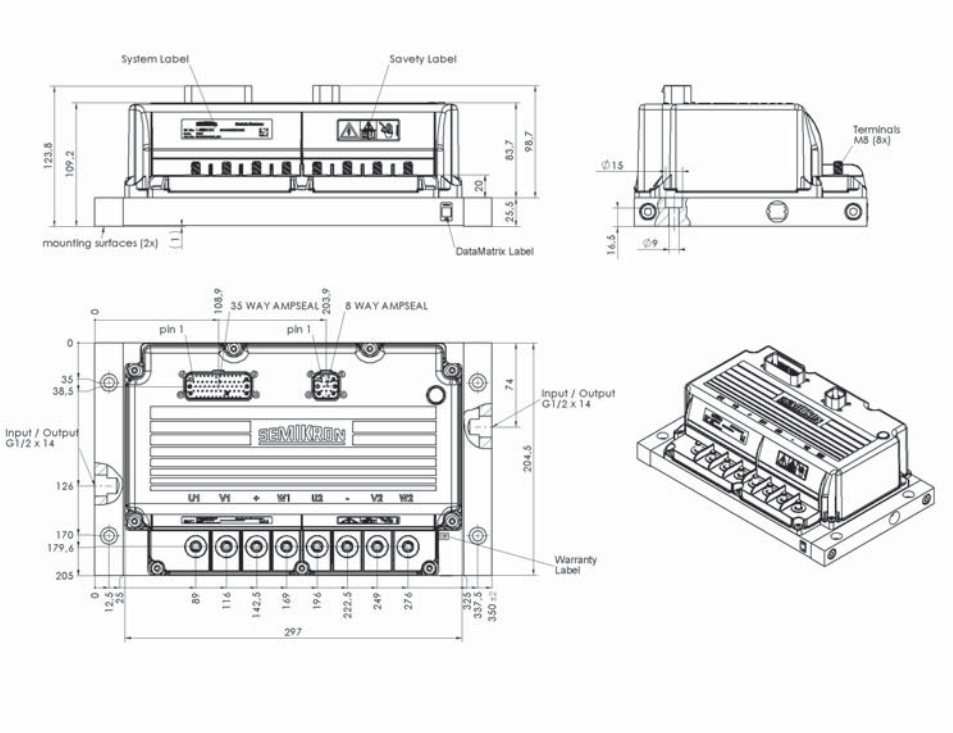
Case 4



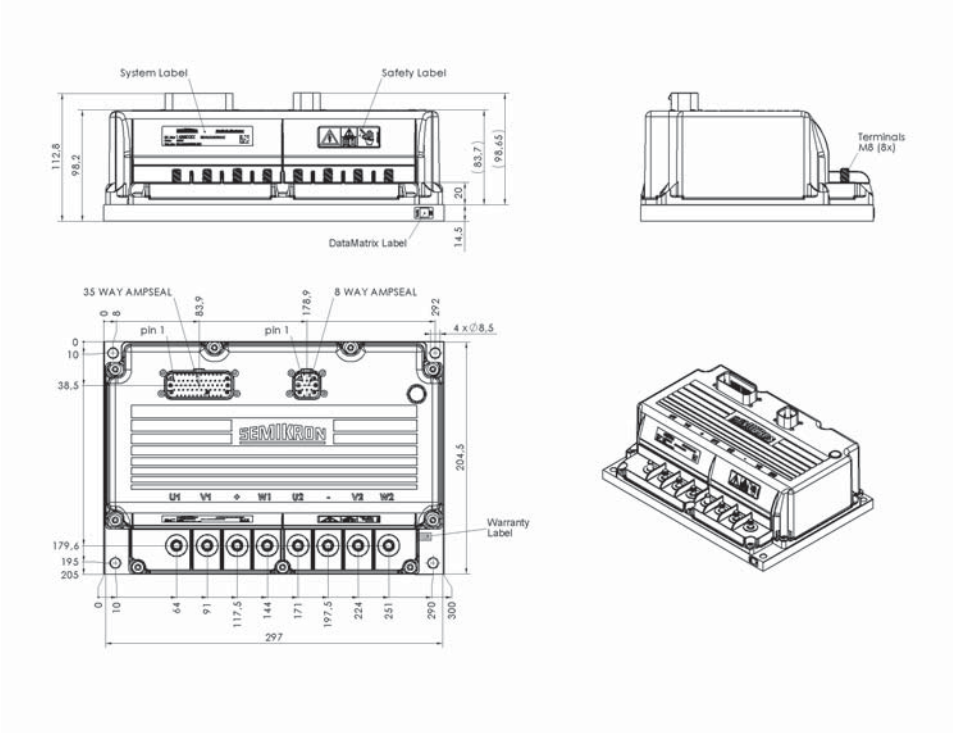
Dimensions in mm

Cases

Case 5



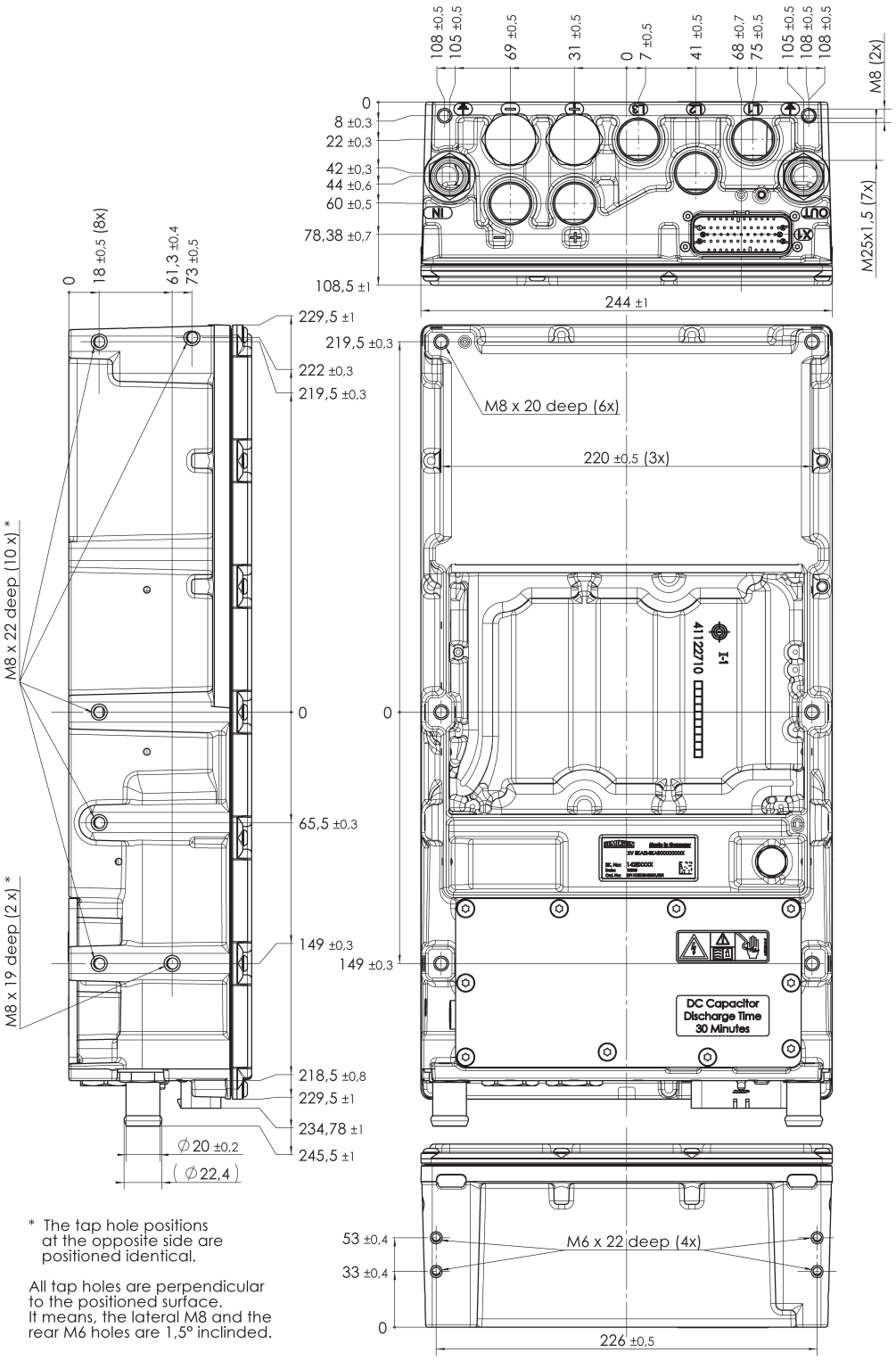
Case 6



Dimensions in mm

Cases

Case 7



* The tap hole positions at the opposite side are positioned identical.

All tap holes are perpendicular to the positioned surface.
It means, the lateral M8 and the rear M6 holes are 1,5° inclinded.

Dimensions in mm

Chips / Discretes

Chips – CAL (Controlled Axial Lifetime) freewheeling diodes are available in 600V / 650V, 1200V, and 1700V voltage classes with current ratings up to 200A. Depending on the target application's frequency, variants with custom designed switching properties are available.

Rectifier diodes and thyristors are designed for the 1600V voltage class, covering a wide range of current ratings up to 770A, equivalent to a die size of more than 500 mm^2. Variable configurations of the thyristor gate (corner vs. center gate) enable an optimized bond layout in the respective target design on the customer side. All chips are used throughout SEMIKRON's module and system range which means a proven history of outstanding performance and reliability. They are compatible to various joint and assembly techniques. Customers may benefit from the vast application knowledge of the SEMIKRON engineering team.

Discretes – the discrete components of SEMIKRON offer a wide variety of packaging technologies, including axial epoxy diodes, stud screw fit diodes, stud screw fit thyristors, capsule diodes and thyristors.
The line offers standard rectifiers with current ratings up to 6000A, fast rectifiers up to 140A, avalanche rectifiers and high voltage rectification up to 5000V.

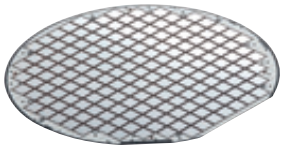
For detailed information please refer data sheets.

Further information:
www.semikron.com/chips
www.semikron.com/discretes

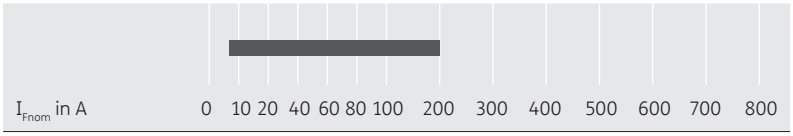
Chips / Discretes

Chips SEMICELL

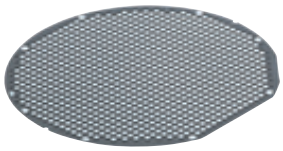
Freewheling Diode CAL



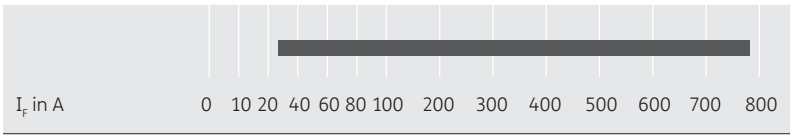
600V up to 1700V



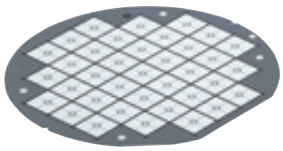
Rectifier Diode



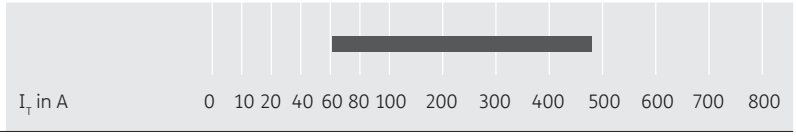
1600V



Thyristor



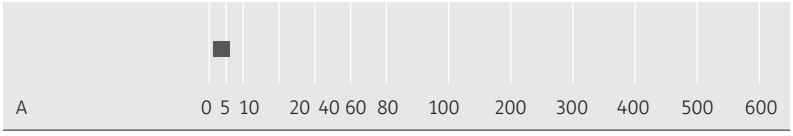
1600V



Discrete Diodes

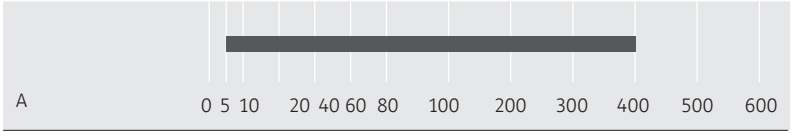
Leaded

100V up to 2000V



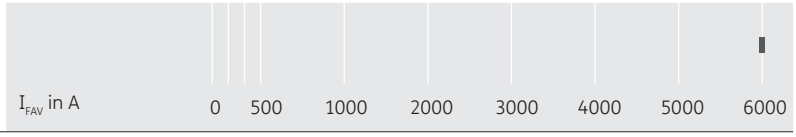
Stud screw fit

400V up to 5000V



Capsule

200V up to 600V



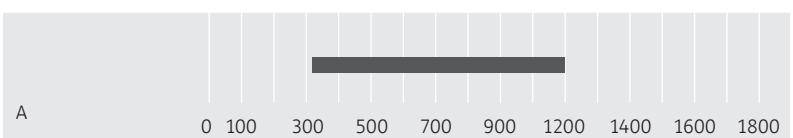
Discrete Thyristors

Stud screw fit

400 V up to 1800 V

Capsule

400 V up to 1800 V



Type	V_{RRM} V	I_F @T_j=150°C A	I_{FSM} @T_j=150°C 10ms A	V_F @T_j=25°C V	I_F @ V_F T_j=25°C A	Q_{rr} @T_j=125°C µC
600V - Freewheeling Diodes CAL I3 Fast						
SKCD 06 C 060 I3	600	15	80	1.35	8	1
SKCD 09 C 060 I3	600	20	100	1.35	13	1.46
SKCD 18 C 060 I3	600	30	200	1.35	25	1.98
SKCD 31 C 060 I3	600	50	440	1.35	50	3.3
SKCD 47 C 060 I3	600	80	720	1.35	85	6.2
SKCD 61 C 060 I3	600	100	1000	1.35	110	8.7
SKCD 81 C 060 I3	600	150	1260	1.35	155	11.5
SKCD 121 C 060 I3	600	210	2100	1.35	245	18

Type	V_{RRM} V	I_F @T_j=175°C A	I_{FSM} @T_j=150°C 10ms A	V_F @T_j=25°C V	I_F @ V_F T_j=25°C A	Q_{rr} @T_j=150°C µC
600V - Freewheeling Diodes CAL High Density						
SKCD 04 C 060 I HD	600	10	65	1.23	4.7	1.3
SKCD 06 C 060 I HD	600	20	95	1.23	8	1.42
SKCD 09 C 060 I HD	600	30	160	1.23	13	2.4
SKCD 16 C 060 I HD	600	50	320	1.23	25	3.87
SKCD 24 C 060 I HD	600	75	395	1.23	41	6
SKCD 42 C 060 I HD	600	100	810	1.23	75	11.1
SKCD 61 C 060 I HD	600	150	1080	1.23	112	15.75
SKCD 81 C 060 I HD	600	200	1310	1.23	152	19.69

Type	V_{RRM} V	I_F @T_j=175°C A	I_{FSM} @T_j=150°C 10ms A	V_F @T_j=25°C V	I_F @ V_F T_j=25°C A	E_{rr} @T_j=150°C mJ
650V - Freewheeling Diodes CAL I4 Fast						
SKCD 24 C 065 I4F	650	50	460	1.30	39	1.1
SKCD 42 C 065 I4F	650	100	680	1.30	73	2.2
SKCD 61 C 065 I4F	650	150	1100	1.30	109	3.8
SKCD 81 C 065 I4F	650	200	1290	1.30	148	5.8

Type	V_{RRM} V	I_F @T_j=150°C A	I_{FSM} @T_j=150°C 10ms A	V_F @T_j=25°C V	I_F @ V_F T_j=25°C A	Q_{rr} @T_j=125°C µC
1200V - Freewheeling Diodes CAL I3 Fast						
SKCD 11 C 120 I3	1200	15	130	2.00	10	1.6
SKCD 18 C 120 I3	1200	25	200	2.00	15	3
SKCD 23 C 120 I3R	1200	30	270	2.00	25	3.8
SKCD 31 C 120 I3	1200	40	370	2.00	35	5.3
SKCD 47 C 120 I3	1200	55	600	2.00	55	7.5
SKCD 61 C 120 I3	1200	75	800	2.00	70	11
SKCD 81 C 120 I3	1200	100	1100	2.00	100	16.5
SKCD 121 C 120 I3	1200	150	1600	2.00	155	24
1200V - Freewheeling Diodes CAL High Density						
SKCD 06 C 120 I HD	1200	6	60	1.50	5	1.24
SKCD 11 C 120 I HD	1200	15	140	1.50	12	2.9
SKCD 14 C 120 I HD	1200	20	170	1.50	15	4
SKCD 18 C 120 I HD	1200	25	200	1.50	20	5
SKCD 31 C 120 I HD	1200	55	480	1.50	45	11
SKCD 47 C 120 I HD	1200	85	700	1.50	70	17.4
SKCD 61 C 120 I HD	1200	115	900	1.50	90	24.5
SKCD 81 C 120 I HD	1200	160	1150	1.50	130	34.4

Type	V_{RRM} V	I_F @T_j=175°C A	I_{FSM} @T_j=150°C 10ms A	V_F @T_j=25°C V	I_F @ V_F T_j=25°C A	E_{rr} @T_j=150°C mJ
1200V - Freewheeling Diodes CAL I4 Fast						
SKCD 08 C 120 I4F	1200	8	36	2.33	8	0.4
SKCD 11 C 120 I4F	1200	15	65	2.38	15	0.6
SKCD 16 C 120 I4F	1200	25	100	2.41	25	1
SKCD 22 C 120 I4F	1200	35	170	2.30	35	1.6
SKCD 31 C 120 I4F	1200	50	270	2.22	50	2.6
SKCD 46 C 120 I4F	1200	75	430	2.17	75	4.2
SKCD 46 C 120 I4F R	1200	75	430	2.17	75	4.2
SKCD 53 C 120 I4F	1200	100	550	2.20	100	5.4
SKCD 81 C 120 I4F	1200	150	900	2.14	150	8.7

Type	V_{RRM} V	I_F @T_j=150°C A	I_{FSM} @T_j=150°C 10ms A	V_F @T_j=25°C V	I_F @ V_F T_j=25°C A	Q_{rr} @T_j=125°C µC
1700V - Freewheeling Diodes CAL Fast						
SKCD 47 C 170 I	1700	55	550	2.05	55	15
SKCD 61 C 170 I	1700	75	720	2.05	75	24
1700V - Freewheeling Diodes CAL High Density						
SKCD 47 C 170 I HD	1700	75	650	1.73	75	25
SKCD 61 C 170 I HD	1700	100	710	1.73	100	35
SKCD 81 C 170 I HD	1700	150	1070	1.73	150	53.5

Type	V_{RRM} V	I_F @T_j=175°C A	I_{FSM} @T_j=150°C 10ms A	V_F @T_j=25°C V	I_F @ V_F T_j=25°C A	E_{rr} @T_j=150°C mJ
1700V - Freewheeling Diodes CAL I4 Fast						
SKCD 28 C 170 I4F	1700	40	280	1.71	23	12
SKCD 46 C 170 I4F	1700	75	450	1.71	43	17
SKCD 56 C 170 I4F	1700	100	580	1.71	57	22.2
SKCD 81 C 170 I4F	1700	150	860	1.71	89	31.5

Type	V_{RRM} V	$I_{F(DC)}$ @T_j=150°C A	I_{FSM} @T_j=150°C 10ms A	V_F @T_j=25°C V	I_F @ V_F T_j=25°C A	t_{rr} @T_j=25°C µs
1600V - Rectifier						
SKR 3,5 Qu bond[4)]	1600	25	200	1.00	8	20
SKR 4,2 Qu bond[4)]	1600	35	270	1.00	13	20
SKR 4,8 Qu bond[4)]	1600	45	350	1.00	18	21
SKR 5,6 Qu bond[4)]	1600	50	490	1.00	25	22
SKR 6,2 Qu bond[4)]	1600	65	600	1.00	33	22
SKR 7,0 Qu bond[4)]	1600	75	890	1.00	45	23
SKR 8,9 Qu bond[4)]	1600	140	1380	1.00	77	26
SKR 10,3 Qu bond[4)]	1600	170	1650	1.00	106	29
SKR 12,4 Qu bond[4)]	1600	235	2300	1.00	160	34
SKR 15,2 Qu bond[4)]	1600	330	3800	1.00	245	42
SKR 16,3 x 18,2 Qu bond[4)]	1600	365	5100	1.00	320	49
SKN 18,2 Qu bond[4)]	1600	380	5500	1.00	360	53
SKN 22,4 Qu bond[4)]	1600	770	9450	1.00	550	72

Footnotes: 4) solderable top metallization on request

Type	V_{RRM}, V_{DRM} V	$I_{T(DC)}$ @ T_j=130°C A	I_{TSM} @T_j=130°C 10ms A	V_{GT} @T_j=25°C V	I_{GT} @T_j=25°C A	t_q @T_j=130°C µs
1600V - Thyristor Central Gate						
SKT 8,9 Qu ZG bond[4)]	1600	105	1000	1.98	100	150
SKT 10,3 Qu ZG bond[4)]	1600	125	1250	1.98	100	150
SKT 12,4 Qu ZG bond[4)]	1600	165	1800	1.98	100	150
SKT 13,5 Qu ZG bond[4)]	1600	185	2300	1.98	100	135
SKT 15,2 Qu ZG bond[4)]	1600	215	3200	1.98	100	150
SKT 18,2 Qu ZG bond[4)]	1600	250	5000	1.98	100	150
SKT 24,3 Qu ZG bond SG [4)]	1600	480	8200	1.98	150	150
1600V - Thyristor Corner Gate						
SKT 5,6 Qu RG bond[4)]	1600	60	280	1.98	100	150
SKT 7,0 Qu RG bond[4)]	1600	75	450	1.98	100	150
SKT 8,9 Qu RG bond[4)]	1600	105	1000	1.98	100	150
SKT 10,3 Qu RG bond[4)]	1600	125	1250	1.98	100	150
SKT 12,4 Qu RG bond[4)]	1600	165	1800	1.98	100	150

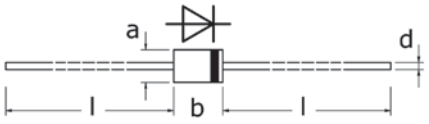
Footnotes: 4) solderable top metallization on request

Discretes / Diodes / Leaded

Type	Voltage (V)	Current (A)	T_C	I_{FSM}@T_j=25°C	V_F	$R_{th(j-c)}$ per chip	T_j	Case	Topology Picture
	V	A	°C	A	V	K/W	°C		
Standard recovery									
SK 1	1000-1600	1.45	60	60	1.50	85	-40 ... +150	E33	
SKN 2,5	400-1600	2.5	45	180	1.20	55	-40 ... +180	E5	
SK 3	1000-1600	3.3	85	180	1.20	60	-40 ... +150	E34	
SKN 5	200-1600	5	45	190	1.25	25	-40 ... +180	E6	
Avalanche									
SKa1	1300-1700	1.45	60	60	1.50	85	-40 ... +150	E33	
SKNa2	1300-1700	2	45	180	1.20	55	-40 ... +150	E5	
SKa3	1300-1700	3.3	90	180	1.20	60	-40 ... +150	E34	
SKNa4	1300-1700	3.7	35	190	1.20	25	-40 ... +150	E6	

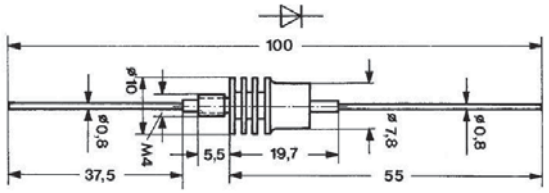
Cases

E33 / E34

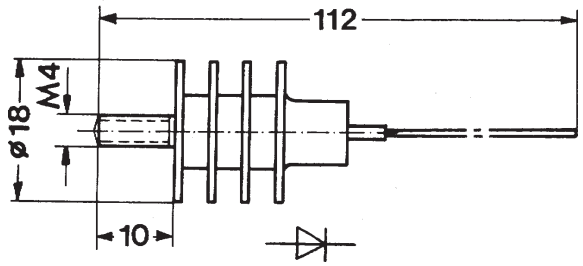


Cases	a	b	l	d
E 33	4,5	7	28	0,75
E 34	6	9	27	1,18

E5



E6



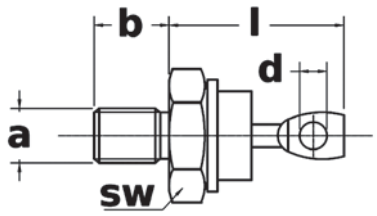
Dimensions in mm

Discretes / Diodes / Stud Screw Fit

Type	Voltage (V)	Current (A)	T_C	I_{FSM}@T_j=25°C	V_F	$R_{th(j-c)}$ per chip	T_j	Case	Topology Picture
	V	A	°C	A	V	K/W	°C		
Standard recovery									
SKN 20	400-1600	20	125	375	1.55	2	-40 ... +180	E9	
SKN 26	400-1600	25	100	375	1.55	2	-40 ... +180	E8	
SKN 45	400-1600	45	125	700	1.60	0.85	-40 ... +180	E12	
SKN 70	400-1600	70	125	1150	1.50	0.55	-40 ... +180	E12	
SKN 71	400-1600	70	125	1150	1.50	0.55	-40 ... +180	E11	
SKN 100	400-1800	100	120	1750	1.55	0.45	-40 ... +180	E13	
SKN 130	400-1800	130	125	2500	1.50	0.35	-40 ... +180	E14	
SKN 240	400-1800	240	125	6000	1.40	0.2	-40 ... +180	E15	
SKN 320	400-1600	320	125	9000	1.35	0.16	-40 ... +180	E16	
SKN 400	1800-3000	400	100	9000	1.45	0.11	-40 ... +160	E17	
SKR 20	400-1600	20	125	375	1.55	2	-40 ... +180	E9	
SKR 26	400-1600	25	100	375	1.55	2	-40 ... +180	E8	
SKR 45	400-1600	45	125	700	1.60	0.85	-40 ... +180	E12	
SKR 70	400-1600	70	125	1150	1.50	0.55	-40 ... +180	E12	
SKR 71	400-1600	70	125	1150	1.50	0.55	-40 ... +180	E11	
SKR 100	400-1800	100	120	1750	1.55	0.45	-40 ... +180	E13	
SKR 130	400-1800	130	125	2500	1.50	0.35	-40 ... +180	E14	
SKR 240	400-1800	240	125	6000	1.40	0.2	-40 ... +180	E15	
SKR 320	400-1600	320	125	9000	1.35	0.16	-40 ... +180	E16	
Fast recovery									
SKN 2F17	400-1000	17	113	450	2.15	1.2	-40 ... +150	E7	
SKN 3F20	800-1200	20	104	375	2.15	1.2	-40 ... +150	E7	
SKN 2F50	400-1000	50	105	1100	1.80	0.5	-40 ... +150	E10	
SKN 60F	1200-1700	60	100	1400	1.75	0.5	-40 ... +150	E10	
SKN 135F	800-1200	135	100	2500	1.95	0.2	-40 ... +150	E14	
SKN 136F	800-1200	135	100	2500	1.95	0.2	-40 ... +150	E31	
SKN 140F	1200-1700	140	100	2500	1.80	0.2	-40 ... +150	E14	
SKN 141F	1200-1700	140	100	2500	1.80	0.2	-40 ... +150	E31	
SKR 2F17	400-1000	17	113	450	2.15	1.2	-40 ... +150	E7	
SKR 3F20	800-1200	20	104	375	2.15	1.2	-40 ... +150	E7	
SKR 2F50	400-1000	50	95	800	1.80	0.65	-40 ... +150	E10	
SKR 60F	1200-1700	60	100	1400	1.75	0.5	-40 ... +150	E10	
SKR 135F	800-1200	135	100	2500	1.95	0.2	-40 ... +150	E14	
SKR 136F	800-1200	135	100	2500	1.95	0.2	-40 ... +150	E31	
SKR 140F	1200-1700	140	100	2500	1.80	0.2	-40 ... +150	E14	
SKR 141F	1200-1700	140	100	2500	1.80	0.2	-40 ... +150	E31	
Avalanche									
SKNa 20	1300-1700	20	93	375	1.55	2	-40 ... +150	E9	
SKNa 22	3600-5000	25	104	450	1.95	1	-40 ... +160	E42	
SKNa 47	3600-5000	45	106	700	1.80	0.6	-40 ... +160	E43	
SKNa 102	3600-5000	125	80	1900	1.90	0.3	-40 ... +160	E44	
SKNa 202	3600-5000	200	80	3800	1.95	0.2	-40 ... +160	E45	
SKNa 402	3600-5000	400	88	7800	1.85	0.1	-40 ... +160	E46	

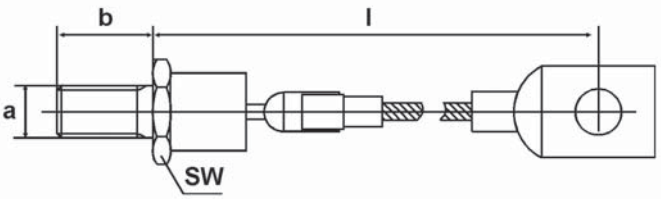
Cases

E7 / E8 / E10 / E11 / E31



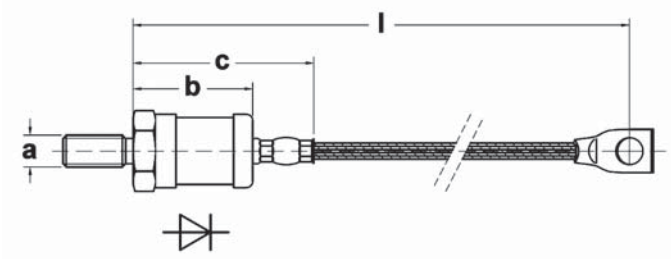
Cases	a	b	d	l	sw
E 7	M 5	11	2,7	22	11
E 8	M 6	11	2,7	21,5	11
E 10	M 6	11	4	25	17
E 11	M 8	11	4	25,5	17
E 31	M 12	18	8,4	55	24

E9 / E12 ... E17



Cases	a	b	l	SW
E 9	M 6	11	130	11
E 12	M 8	11	135	17
E 13	M 12	18	165	24
E 14	M 12	18	165	24
E 15	M 16 x 1,5	20	190	32
E 16, E 17	M 24 x 1,5	20	230	41

E 42 / E 43 / E 44 / E 45 / E 46



Cases	a	b	c	l
E 42	M 6	28.5	45	150
E 43	M 8	32	54	160
E 44	M 12	38	57	185
E 45	M 16 x 1,5	48	70	205
E 46	M 24 x 1,5	54	82	250

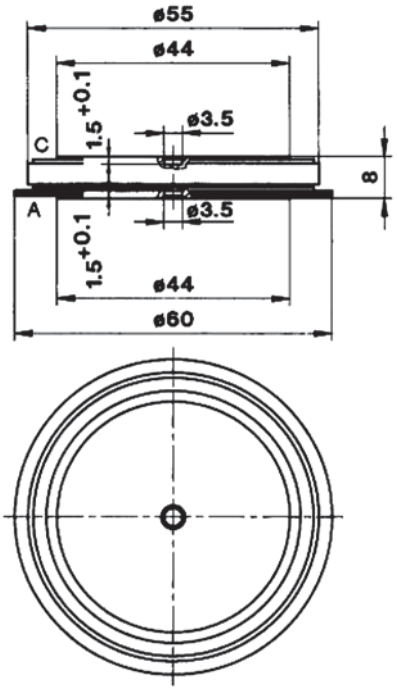
Dimensions in mm

Discretes / Diodes / Capsules

Type	Voltage (V)	Current (A)	T_C	I_{FSM}@T_j=25°C	V_F	$R_{th(j-c)}$ per chip	T_j	Case	Topology Picture
	V	A	°C	A	V	K/W	°C		
SKN 6000	200-600	6000	85	60000	1.30	0.012	-40 ... +180	E35	

Cases

E35



Dimensions in mm

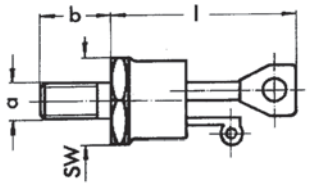
Discretes / Thyristors / Stud Screw Fit

Type

	Voltage (V)	Current (A)	T_C	I_{TSM}@T_j=25°C	V_T @ I_T, T_j=25°C	I_T@V_T	$R_{th(j-c)}$ per chip	T_j	Case	Topology Picture
	V	A	°C	A	V	A	K/W	°C		
SKT 10	600-1200	10	111	250	1.6	30	1.3	-40 ... +130	B1	
SKT 16	400-1800	16	104	370	2.4	75	0.9	-40 ... +130	B2	
SKT 24	400-1800	24	95	450	1.9	75	0.9	-40 ... +130	B2	
SKT 40	400-1800	40	80	700	1.95	120	0.66	-40 ... +130	B3	
SKT 50	600-1800	50	78	1050	1.8	120	0.6	-40 ... +130	B3	
SKT 55	400-1800	55	92	1300	1.8	200	0.47	-40 ... +130	B5	
SKT 80	600-1800	80	85	1700	2.25	300	0.28	-40 ... +130	B5	
SKT 100	400-1800	100	85	2000	1.75	300	0.28	-40 ... +130	B5	
SKT 130	400-1600	130	85	3500	2.25	500	0.18	-40 ... +130	B6	
SKT 160	400-1600	160	84	4300	1.75	500	0.18	-40 ... +130	B6	
SKT 250	400-1600	250	85	7000	1.65	800	0.123	-40 ... +130	B7	
SKT 300	400-1600	300	93	11000	1.45	800	0.096	-40 ... +130	B7	

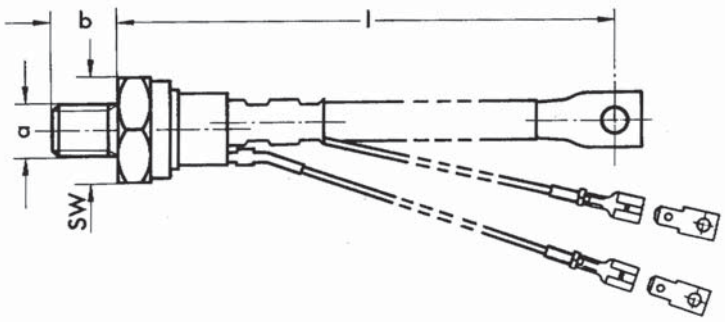
Cases

B1 ... B3



Cases	a	b	l	SW
B 1	M 5	11	20,3	11
B 2	M 6	11	30	14
B 3	M 8	11	33,5	17

B5 ... B7



Cases	a	b	l	SW
B 5	M 12	18	160	24
B 6	M 16 x 1,5	20	190	32
B 7	M 24 x 1,5	20	230	41

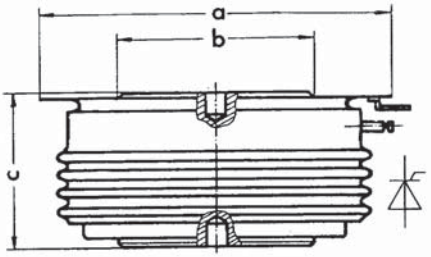
Dimensions in mm

Discretes / Thyristors / Capsules

Type	Voltage (V)	Current (A)	T_C	I_{TSM}@T_j=25°C	V_T @ I_T, T_j=25°C	I_T@V_T	$R_{th(j-c)}$ per chip	T_j	Case	Topology Picture
	V	A	°C	A	V	A	K/W	°C		
SKT 340	1200-1800	340	82	5700	1.9	1000	0.072	-40 ... +125	B8	
SKT 493	400-1800	490	80	8000	2.1	1500	0.047	-40 ... +125	B11a	
SKT 551	1200-1800	550	85	9000	1.65	1500	0.047	-40 ... +125	B11	
SKT 553	400-1800	550	85	9000	1.65	1500	0.047	-40 ... +125	B11a	
SKT 760	1200-1800	760	80	15000	1.65	2400	0.04	-40 ... +125	B10	
SKT 1200	1200-1800	1200	85	30000	1.65	3600	0.021	-40 ... +125	B14	

Cases

B8 ... B14



Cases	a	b	c
B 8	41	19	14
B 10	57,3	34	26
B 11	41	25	14
B 11a	41	25	14
B 14	73	47	26

Dimensions in mm

Accessories
Heatsinks / Fans / Thermal Interface Materials

Heatsinks – SEMIKRON offers a broad range of different heat sinks including forced and natural air cooling. The heatsinks are available for capsules, insulated base modules or IPMs.

Fans – SEMIKRON offers a broad range of axial, centrifugal and radial fans for different inverter designs.

Thermal interface materials – According to customer demands SEMIKRON offers thermal interface solutions with silicone based or silicone free materials as well as phase change materials

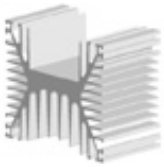
For detailed information
please refer data sheets.

Further information:
www.semikron.com/heatsinks
www.semikron.com/fans
www.semikron.com/thermal-interface-materials

Heatsinks

Forced air cooled

Natural cooled

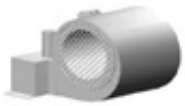


Fans

Axial

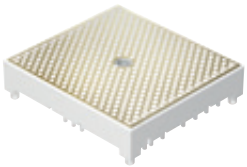
Centrifugal

Radial



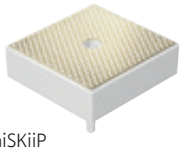
Thermal Interface Materials

Silicone-based grease



e.g. SEMITOP

Silicone-free grease

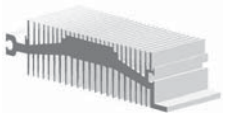
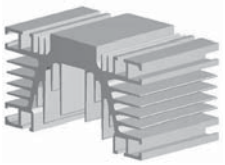
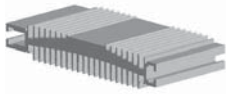
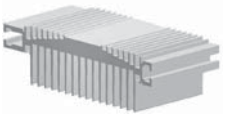
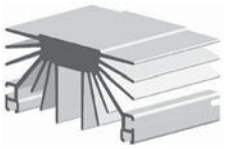
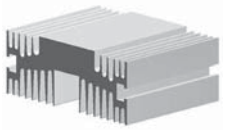
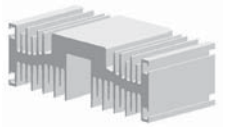
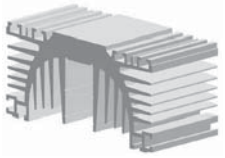


e.g. MiniSKiiP

Phase Change Material

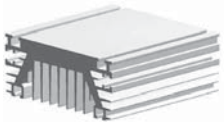
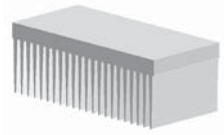
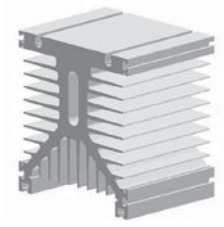
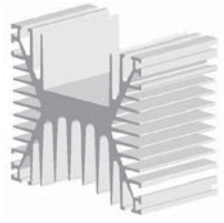
e.g. SEMiX Press-Fit

Accessories / Heatsinks

Type	Suitable for	R_{thsa} natural cooling K/W	R_{thsa} forced air cooling K/W	Weight kg	Weight kg/m	Produkt Picture
Forced-air cooled						
N 4	Capsules	-	0.04	6.3	25.1	
P 11	Capsules	0.2	0.05	3.8	15	
P 17	Capsules	0.45	0.12	1.5	10.6	
P 18	Capsules	0.37	0.08	1.6	12.2	
P 8[7)]	Capsules	0.35	0.07	1.7	9.6	
P 8,5[7)]	Capsules	0.3	0.08	1.5	9.5	
P 9[7)]	Capsules	0.21	0.06	4.1	17.8	
U 3	Capsules	0.14	0.06	7.1	23.7	
P 21[7)]	Isolated base modules	-	0.02	4.1	40.8	

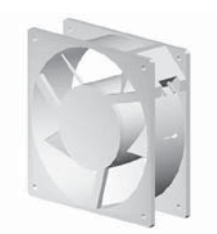
Footnotes: 7) Non standard item, available on request only, typical minimum batch quantities of 60 pieces will apply

Accessories / Heatsinks

Type	Suitable for	R_{thsa} natural cooling K/W	R_{thsa} forced air cooling K/W	Weight kg	Weight kg/m	Produkt Picture
Forced-air cooled						
R 4A	Isolated base modules	1.4	0.38	0.6	-	
P 16	SKiiP or modules	-	0.06	1.3	23.5	
Px 308[7)]	SKiiP or modules	-	0.013	2	12.2	
P 1	Studs or modules	0.7	0.4	0.8	11.3	
P 3	Isolated base modules	0.45	0.14	0.7	17.6	
Natural cooled						
P 4[7)]	Stud device	0.27	-	4.1	20.6	

Footnotes: 7) Non standard item, available on request only, typical minimum batch quantities of 60 pieces will apply

Accessories / Fans

Type	V_{in}	f	V_{air}/t	P_{max}	T_{Amax}	Weight	Noise	Produkt Picture
	V	Hz	m³/h	W	°C	kg	dB	
Axial Fans								
SKF 3-230-01	230	50 / 60	150 / 174	15 / 14	70	0.55	37 / 41	
SKF RE-024-01	24	-	500	90	75	0.43	76	
SKF SR-024-01	24	-	56	3.6	70	0.085	43	
SKF 9-230-01	230	50 / 60	375 / 440	24 / 26	70	1	54 / 60	
SKF 8-230-01	230	50 / 60	325 / 380	45 / 39	50 / 70	1.1	49 / 53	
Centrifugal Fans								
SKF 17A-230-11	230	50 / 60	850 / 930	110 / 120	70	2	74	
SKF 17B-230-12	230	50 / 60	1175 / 1300	230	70	6.1	73 / 76	
Radial Fans								
SKF 16A-230-01	230	50 / 60	630 / 590	130 / 140	60 / 50	3.3	59	
SKF 16P-230-01	230	50 / 60	1125	165	60	3.9	-	
SKF 16B-230-01	230	50 / 60	640 / 580	167 / 191	70 / 50	3.75	58 / 57	
SKF 16A-230-11	230	50 / 60	630 / 590	130 / 140	60 / 50	3.3	59	

Accessories / Thermal Interface Materials

Type	Case	Thermal paste	Tolerances (+/-) µm	Thickness (after assembly) µm	Thermal conductance W/m*K
Silicone-based grease					
MiniSKiiP	0 II	Wacker P12	10	33	0.8
MiniSKiiP	1 II	Wacker P12	10	30	0.8
MiniSKiiP	2 I	Wacker P12	10	50	0.8
MiniSKiiP	2 II	Wacker P12	10	55	0.8
MiniSKiiP	3 I	Wacker P12	10	45	0.8
MiniSKiiP	3 II	Wacker P12	10	40	0.8
MiniSKiiP[1)]	2 II	Wacker P12	6	35	0.8
MiniSKiiP[1)]	3 II	Wacker P12	6	35	0.8
MiniSKiiP	8 I AC	Wacker P12	10	61	0.8
MiniSKiiP	8 I AB	Wacker P12	10	60	0.8
SKiM 4/5	4	Wacker P12	6	44	0.8
SKiM 63/93	93	Wacker P12	6	21	0.8
SKiM 63/93	63	Wacker P12	6	21	0.8
SEMITOP	2	Wacker P12	7	29	0.8
SEMITOP	3	Wacker P12	7	47	0.8
SEMITOP	4	Wacker P12	6	31	0.8
Silicone-free grease					
MiniSKiiP	2 II	Electrolube HTC	10	75	0.9
MiniSKiiP	3 II	Electrolube HTC	10	60	0.9
Phase Change Materials					
SEMiX[1)]	3p	HALA TPC-Z-PC-P8	3	19	3.4

Footnotes: 1) New product

Service & Contact

Services

Contact

Application Manual

Available in German, English, Chinese and Japanese

Power Semiconductors

IGBT´s and MOSFET´s integrated in power modules are the key components of power electronic circuits today and are continuously finding their way into new fields of application. This goes hand in hand with the ever increasing call for line rectifier diodes and thyristors as a cost effective way of connecting the circuits to the power grid. The aim of the application manual is to provide users with support in selecting and using such devices.

The manual contains basic background knowledge on semiconductors in order to enable a better understanding of application possibilities and limits. More in-depth explanations are given on packaging and assembly technologies, because of the major influence they have on module properties and limitations in field applications. Statements on reliability data, life cycle analyses and key test processes round off the chapter. The Application Manual also explains the structure of datasheets and provides notes to help users better understand datasheet parameters.

The Application Manual contains detailed application-related information on electrical configuration under important operating conditions, driver and protection elements for semiconductors; thermal dimensioning and cooling, tips on parallel and series connection, assembly tips for optimized power layouts with regard to parasitic elements and the requirements arising from specific ambient conditions.

This book is written for users and provides help with component selection and design-in work. It couples a vast wealth of experience with detailed practical knowledge, the result being a vast pool of information which up till now has been spread across various individual articles or in the minds of experts only. The second revised edition is published in 2015.

Further information:
www.semikron.com/application-manual

„465 pages of acquired knowledge“

SemiSel Simulation

Free support for your converter design

Applications

SemiSel is the SEMIKRON online calculation and simulation tool for losses, temperatures and optimal choice of power electronic components (www.semikron.com). The days when a module was purchased solely on the basis of its nominal current are over. Today, increased product diversity in the field of power semiconductors calls for comparisons beyond the information contained in data sheets. Only a comparison under application-oriented conditions, such as voltage level, switching frequency or cooling conditions, can demonstrate differences in the performance of the devices available. Miniaturisation combined with higher power densities makes it essential to get information about device losses and temperatures to specify requirements for a cooling system at an early state of product development.

Benefits

The risk arising from variations in both component and electrical circuit parameters should be considered in proper circuit design. These facts are only a few of the many points that need to be considered when developing a power electronics system. And this is where efficient support is provided by SemiSel to enable developers to make the right decision. SemiSel is still the most comprehensive free tool of its kind that can be used to investigate different power electronic circuits under different operating conditions.

This programme has been available online since 2001, and it has been continually improved and expanded since its introduction. It provides a good compromise of user-friendliness, applications and speed. The calculation functions range from product proposal for nominal operating conditions to drivers and heat sink specifications and product selections for specific overload conditions and complex calculations, such as complete load cycles that take into account temperature cycling problems.

Further information:
www.semikron.com/semisel

Applications & Technologies

Motor Drives
Converters for all types of electric motors utilized in industry. SEMIKRON power semiconductors help to maximize efficiency in any 2 or 4-quadrant drive or servo.

Wind Energy
With power semiconductors in the converters or in the drives controlling blade pitch, nearly one in every two wind turbines in the world is fitted with SEMIKRON power modules.

Solar Energy
With focus on cost and efficiency in photo voltaic systems, SEMIKRON has products serving the complete spectrum from micro inverters and medium power multi string to Mega Watt central inverters.

Utility Vehicles
Power electronics forms the heart of any electric vehicle. SEMIKRON's solder-free semiconductor modules and systems are particularly well suited to the robust needs of today's vehicles.

Power Quality
PFC, AVC and UPS systems ensure a clean reliable mains supply is kept available to critical applications. SEMIKRON power modules are at the heart of critical power systems.

Power Supplies
In electro technology and medical diagnostics power semiconductors at the mains input facilitate and improve processes and save energy.

Urban Transport Equipment
Electrical transportation applications demand high reliability of the drive systems with their cyclic operating profile and the continuous auxiliary supplies over years of operation.

SKiN® Technology
SKiN Technology is free of bond wires and does not use solder or thermal paste.

SKiNTER Technology
The SKiNTER Technology utilises a cold-welded silver layer instead of solder between DCB and chip. Hence, the module is solder-free.

SPRiNG Technology
The SPRiNG Technology utilises springs to establish the contacts to the PCB. It is the best choice for fastest assembly and when field reliability in harsh environments is critical.

SKiiP® Technology
SEMIKRON's SKiiP Technology utilises spring loaded mechanical and electrical contacts and features a compact and durable module construction.

PRESS-FIT Technology
Alternative concept to Solder Mounting of module and PCB. The solder free solution ensures easy and fast assembly to the PCB in a single step reducing assembly time.

SOLDER Technology
The proven interface for power modules. Solder pins are used in a broad range of applications worldwide offering a robust interface. Solder processes are widely used and easy to implement.

SCREW Technology
The standard interface to the power terminals for medium and high power modules. Easy to use and robust power interface to AC and DC terminals.

Abbreviations

Acronym	English
E_{off}	Energy dissipation during turn-off
E_{on}	Energy dissipation during turn-on
E_{rr}	Energy dissipation during reverse recovery (diode)
f	Operating frequency
f_{max}	Maximum frequency
I_C	Continuous collector current
I_{Cnom}	Nominal collector current
I_D	Direct output current (of a rectifier connection)
I_D	Continuous drain current (MOSFET)
I_F	Forward current (actual value)
I_{FAV}	Mean forward current
I_{FSM}	Surge forward current
I_{GT}	Minimum guaranteed gate trigger current
$I_{outPEAK}$	Output peak current (driver)
$I_{overload}$	Overload current for a specified time
i_T	On-State current (instantaneous value)
I_{TAV}	Mean on-state current
I_{TSM}	Surge on-state curren
$Q_{out/pulse}$	Output charge per pulse (Driver)
Q_{rr}	Reverse recovery charge
$R_{DS(on)}$	Drain-source on-resistance (MOSFET)
r_T	On-state slope resistance, forward slope resistance (Thyristor)

Acronym	English
$R_{th(c-s)}$	Thermal resistance case to heat sink
$R_{th(j-a)}$	Thermal resistance junction to ambient
$R_{th(j-c)}$	Thermal resistance junction to case
$R_{th(j-s)}$	Thermal resistance junction to sink
$R_{th(s-a)}$	Thermal resistance heat sink to ambient
T_c	Case temperature
T_j	Junction temperature
t_q	Circuit commutated turn-off time (thyristor)
T_s	Heatsink temperature
V_{air}/t	Air flow
V_{CE}	Collector-emitter voltage
V_{CEsat}	Collector-emitter saturation voltage
V_{DRM}	Repetitive peak off-state voltage
V_{DS}	Drain-source voltage
V_F	Forward voltage
$V_{G(off)}$	Turn-off gate voltage level (driver)
$V_{G(on)}$	Turn-on gate voltage level (driver)
V_{GT}	Gate trigger voltage
V_{in}	Input voltage
$V_{isol(IO)}$	Isolation test voltage (r.m.s. /1 min.) input-output (driver)
V_{RRM}	Repetitive peak reverse voltage
V_T	On-state voltage (Thyristor)
W	Weight

Printed in Germany © by SEMIKRON International GmbH, 05/2014
© Photos by SEMIKRON International GmbH, Tilman Weishart Photography; additional: Stockfotos from fotolia, istockfoto, shutterstock and getty images.

Product sample request

Product sample service at a click

The development of prototypes is more precise and faster if power electronics modules are integrated during the design-in phase. As of now, you can request samples for electronic design online from SEMIKRON during this project phase and get easy access to our samples with no obligation. Depending on the design, application and the size of the project, we also offer this service free of charge.

Three steps to getting your SEMIKRON sample

- **Initial contact** Fill in the request form for ordering samples
- **Consultation** Response from SEMIKRON within 24 hours
- **Dispatch** SEMIKRON sends the sample without lengthy waiting periods

Further information:
www.semikron.com/sample-request

Модуль, igbt, semikron купить в Минске

www.fotorele.net www.tiristor.by радиодетали, электронные компоненты
email minsk17@tut.by tel.mob +375 44 758 47 80 velcom **+375 29 758 47 80** мтс

подробно смотрите ниже: описание, технические характеристики, datasheet , фото, каталог
QR код