

Модули, IGBT, IPM, Mitsubishi купить в Минске tel. +375447584780  
www.fotorele.net www.tiristor.by радиодетали, электронные компоненты  
email minsk17@tut.by tel.+375 29 758 47 80 МТС

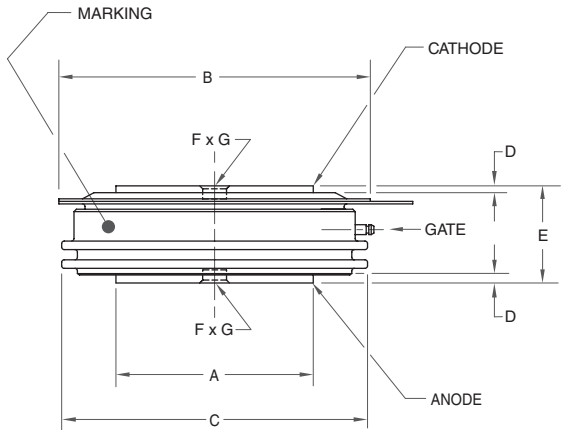
подробно смотрите ниже: каталог, описание, характеристики, datasheet



QR код



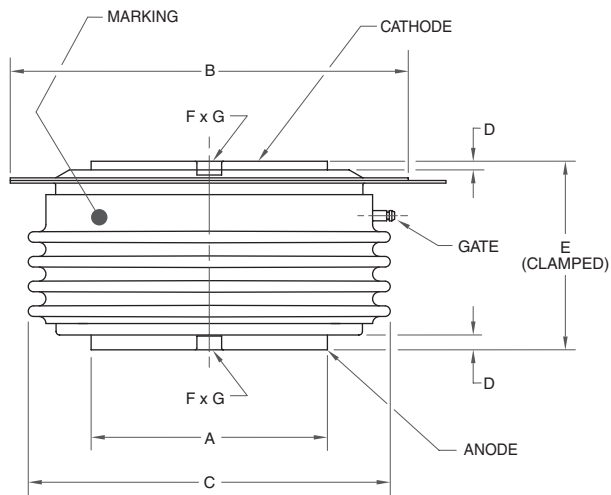
#### 4 T7SH, T7SO



Dim.	Inches	Millimeters
A	1.180 Dia.	29.97 Dia.
B	1.90 Dia.	48.26 Dia.
C	1.850 Dia.	46.99 Dia.
D	0.025 Min.	0.64 Min.

Dim.	Inches	Millimeters
E	0.605 Max.	15.37 Max.
F	0.145 Dia.	3.68 Dia.
G	0.082 Deep	2.08 Deep

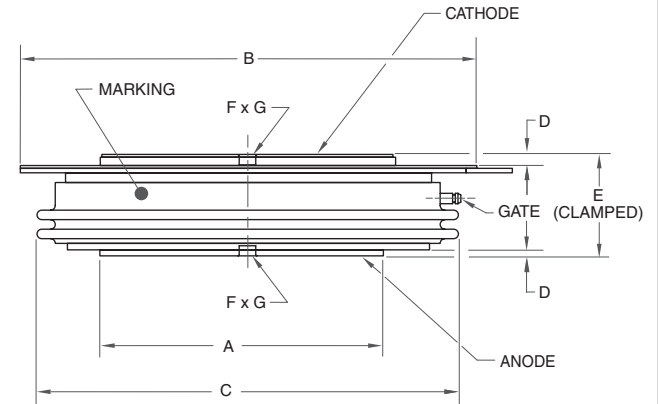
#### 5 T720, T72H, T727, T8KC, T8K7, T82F, T820



Dim.	Inches	Millimeters
A	1.34 Dia.	34.0 Dia.
B	2.28 Dia.	57.9 Dia.
C	2.05 Dia.	52.1 Dia.
D	0.03 Min.	0.76 Min.

Dim.	Inches	Millimeters
E	1.060 Max.	26.92 Max.
F	0.140 Dia.	3.56 Dia.
G	0.078 Deep	1.98 Deep

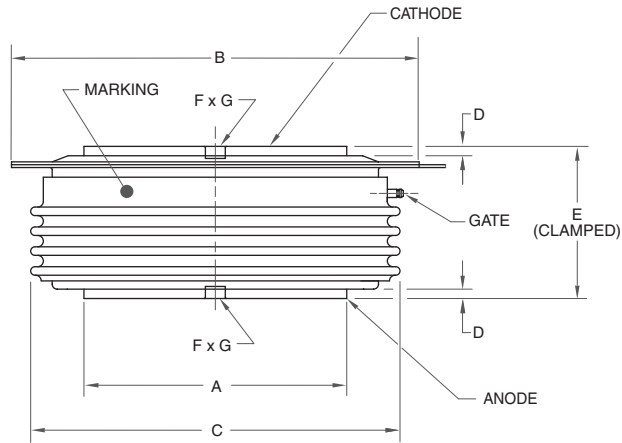
#### 6 T9S0



Dim.	Inches	Millimeters
A	1.85 Dia.	47.0 Dia.
B	2.91 Dia.	74.0 Dia.
C	2.64 Dia.	67.0 Dia.
D	0.028 Min.	0.7 Min.

Dim.	Inches	Millimeters
E	0.65 Max.	16.5 Max.
F	0.14 Dia.	3.5 Dia.
G	0.0787 Deep	2.0 Deep

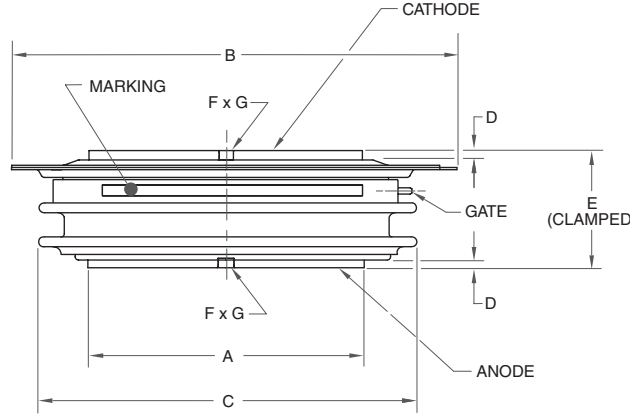
**7** C712, T9GH, T9G0, T9KC, T9K7



Dim.	Inches	Millimeters
A	1.858 Dia.	47.2 Dia.
B	2.902 Dia.	73.7 Dia.
C	2.642 Dia.	67.1 Dia.
D	0.028 Min.	0.7 Min.

Dim.	Inches	Millimeters
E	1.091 Max.	27.7 Max.
F	0.142 Dia.	3.6 Dia.
G	0.0787 Deep	2.0 Deep

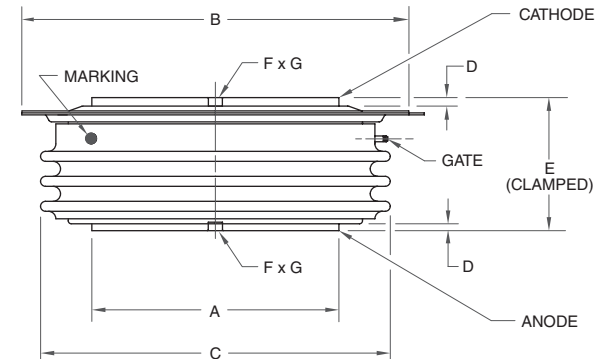
**8** TAS7, TAS0



Dim.	Inches	Millimeters
A	2.480 Dia.	63.0 Dia.
B	3.937 Dia.	100.0 Dia.
C	3.551 Dia.	90.2 Dia.
D	0.028 Min.	0.7 Min.

Dim.	Inches	Millimeters
E	1.03 Max.	26.162 Max.
F	0.14 Dia.	3.556 Dia.
G	0.0787 Deep	2.0 Deep

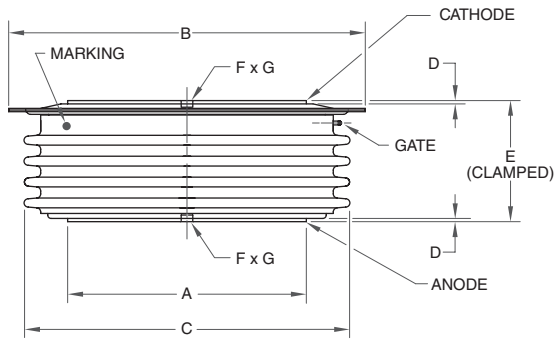
**9** TAK7, TA20



Dim.	Inches	Millimeters
A	2.480 Dia.	63.0 Dia.
B	3.937 Dia.	100.0 Dia.
C	3.551 Dia.	90.2 Dia.
D	0.028 Min.	0.7 Min.

Dim.	Inches	Millimeters
E	1.362 Max.	34.6 Max.
F	0.142 Dia.	3.6 Dia.
G	0.0787 Deep	2.0 Deep

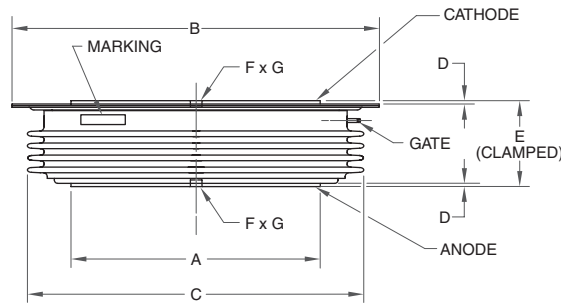
# 10 C770, TBKC, TBKD, TBK5, TBK7



Dim.	Inches	Millimeters
A	2.882 Dia.	73.2 Dia.
B	4.36 Dia.	110.7 Dia.
C	3.961 Dia.	100.6 Dia.
D	0.028 Min.	0.7 Min.

Dim.	Inches	Millimeters
E	1.5 Max.	38.1 Max.
F	0.142 Dia.	3.6 Dia.
G	0.0787 Deep	2.0 Deep

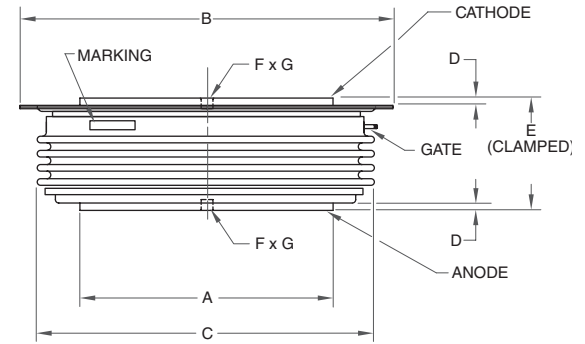
# 11 TBS4, TBS7, TBSX



Dim.	Inches	Millimeters
A	2.88 Dia.	73.2 Dia.
B	4.36 Dia.	110.7 Dia.
C	3.95 Dia.	100.3 Dia.
D	0.03 Min.	0.76 Min.

Dim.	Inches	Millimeters
E	1.05 Max.	26.67 Max.
F	0.14 Dia.	3.56 Dia.
G	0.08 Deep	2.03 Deep

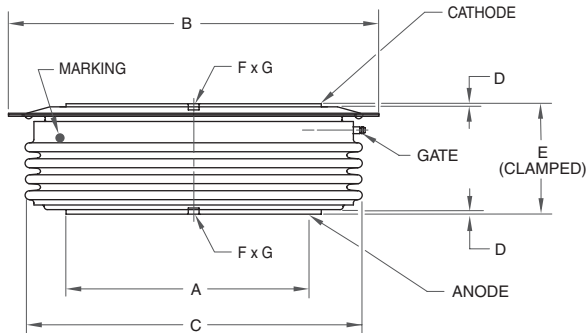
# 12 TCU4



Dim.	Inches	Millimeters
A	3.11 Dia.	84.1 Dia.
B	4.72 Dia.	120.0 Dia.
C	4.37 Dia.	111.0 Dia.
D	0.028 Min.	0.7 Min.

Dim.	Inches	Millimeters
E	1.03 Max.	26.2 Max.
F	0.142 Dia.	3.6 Dia.
G	0.0787 Deep	2.0 Deep

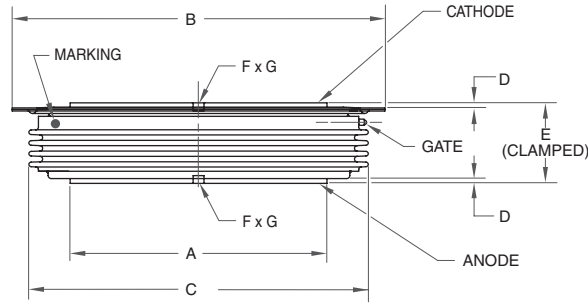
# 13 TC20



Dim.	Inches	Millimeters
A	3.11 Dia.	84.1 Dia.
B	4.8898 Dia.	124.2 Dia.
C	4.37 Dia.	111.0 Dia.
D	0.028 Min.	0.7 Min.

Dim.	Inches	Millimeters
E	1.5 Max.	38.1 Max.
F	0.142 Dia.	3.6 Dia.
G	0.0787 Deep	2.0 Deep

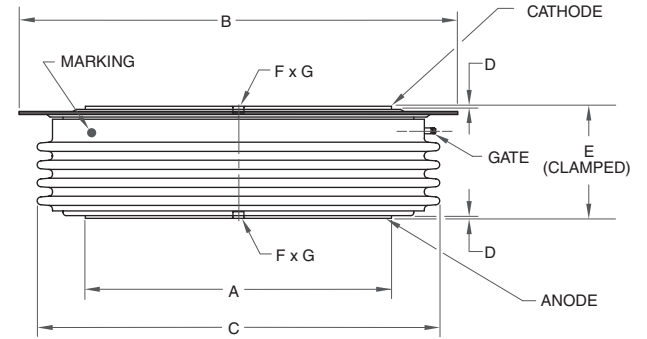
# 14 TCS4



Dim.	Inches	Millimeters
A	3.311 Dia.	84.1 Dia.
B	4.889 Dia.	124.2 Dia.
C	4.370 Dia.	111.0 Dia.
D	0.028 Min.	0.7 Min.

Dim.	Inches	Millimeters
E	1.059 Max.	26.9 Max.
F	0.142 Dia.	3.6 Dia.
G	0.0787 Deep	2.0 Deep

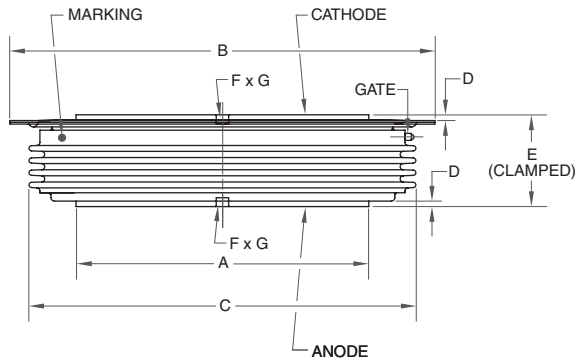
# 15 TDK4



Dim.	Inches	Millimeters
A	3.913 Dia.	99.4 Dia.
B	5.661 Dia.	143.8 Dia.
C	5.181 Dia.	131.6 Dia.
D	0.028 Min.	0.7 Min.

Dim.	Inches	Millimeters
E	1.5 Max.	38.1 Max.
F	0.142 Dia.	3.6 Dia.
G	0.0787 Deep	2.0 Deep

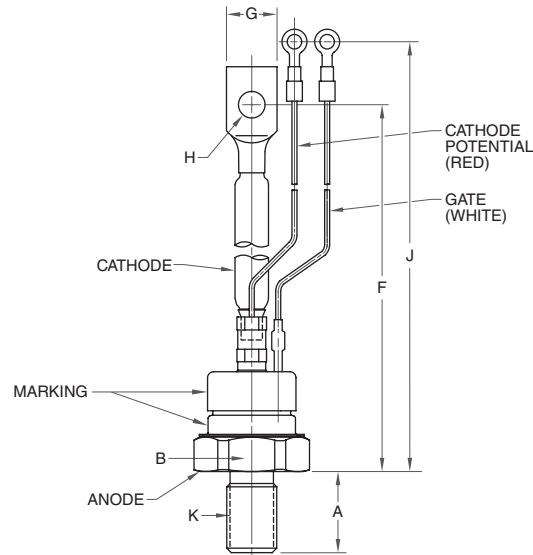
# 16 TDS4, TDS5



Dim.	Inches	Millimeters
A	3.913 Dia.	99.4 Dia.
B	5.661 Dia.	143.8 Dia.
C	5.181 Dia.	131.6 Dia.
D	0.028 Min.	0.7 Min.

Dim.	Inches	Millimeters
E	1.059 Max.	26.9 Max.
F	0.142 Dia.	3.6 Dia.
G	0.0787 Deep	2.0 Deep

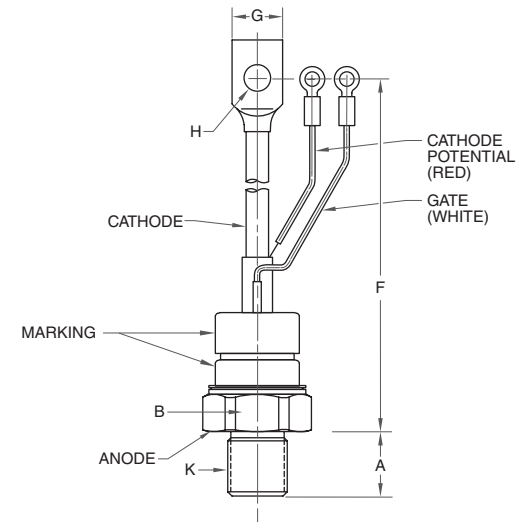
# 17 T500, T507



Dim.	Inches	Millimeters
A	0.815 Max.	20.7 Max.
B	1.059 Max.	26.9 Max.
F	6.240 Max.	158.5 Max.

Dim.	Inches	Millimeters
G	0.512 Max.	13.0 Max.
H	0.268 Dia.	6.8 Dia.
J	7.559 Max.	192.0 Max.
K	0.500-20 UNF-2A Thread	

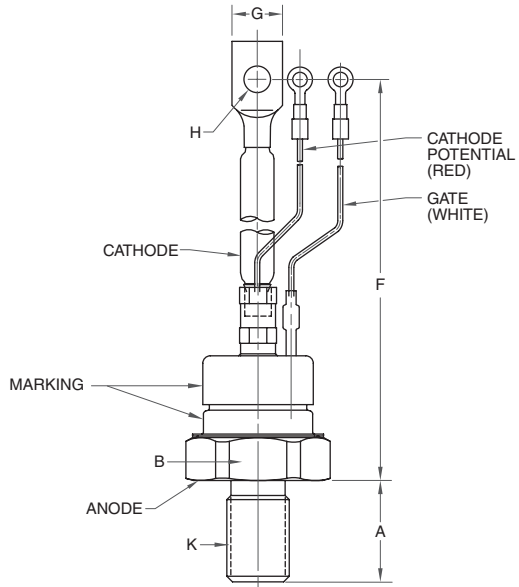
# 18 T650



Dim.	Inches	Millimeters
A	0.822 Max.	20.88 Max.
B	1.248 Max.	31.78 Max.
F	8.03 Max.	203.96 Max.

Dim.	Inches	Millimeters
G	0.63 Max.	16.0 Max.
H	0.281 Dia.	7.14 Dia.
K		M20 x 1.5

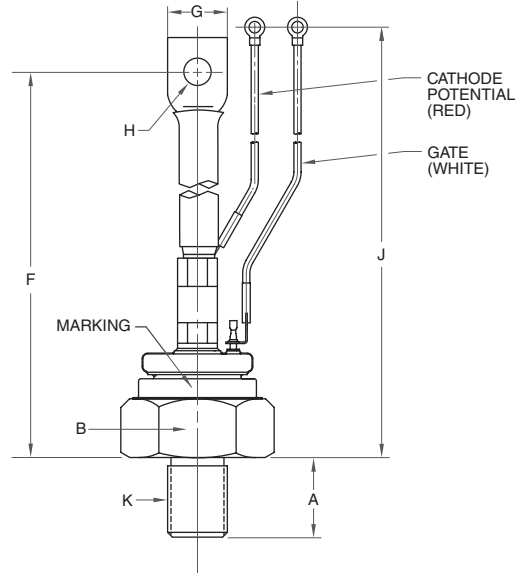
# 19 T600, T607



Dim.	Inches	Millimeters
A	1.063 Max.	27.0 Max.
B	1.252 Max.	31.8 Max.
	(Across Flats)	
F	8.032 Max.	204.0 Max.

Dim.	Inches	Millimeters
G	0.63 Max.	16.0 Max.
H	0.2795 Dia.	7.1 Dia.
K	0.75-16 UNF-2A Thread	

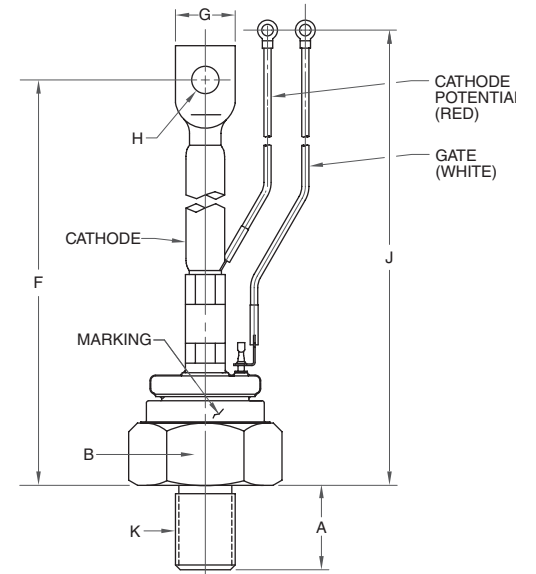
# 20 T750



Dim.	Inches	Millimeters
A	1.08 Max.	27.4 Max.
B	1.748 Max.	44.4 Max.
	(Across Flats)	
F	9.78 Max.	248.4 Max.

Dim.	Inches	Millimeters
G	0.847 Max.	21.5 Max.
H	0.355 Dia.	9.0 Dia.
J	10.18 Max.	258.5 Max.
K	M24 x 1.5	

# 21 T700, T707



Dim.	Inches	Millimeters
A	1.083 Max.	27.5 Max.
B	1.750 Max.	44.45 Max.
	(Across Flats)	
F	9.784 Max.	248.5 Max.

Dim.	Inches	Millimeters
G	0.756 Max.	19.2 Max.
H	0.343 Dia.	8.7 Dia.
J	10.181 Max.	258.6 Max.
K	0.750-16 UNF-2A Thread	

# DISCRETE RECTIFIERS

## General Purpose Rectifiers

### Applications Include:

- Battery Chargers
- Induction Heating/Melting
- Motor Controls
- Power Supplies
- Transportation
- Welding

## Fast Recovery Rectifiers

### Applications Include:

- Induction Heating
- Medical Equipment
- Motor Controls
- Transportation
- Welding

### Packages:

- Discrete Discs
- Discrete Studs

### Features:

- Nickel Plating Finish
- Hermetic Encapsulation for Long-Term Reliability to  $1 \times 10^{-6}$  cc/He/sec

## TABLE OF CONTENTS

Numbering System .....	G-2
General Purpose Disc/Hockey Puk Diodes .....	G-3
General Purpose Welding Diodes .....	G-4
General Purpose Stud Diodes .....	G-5
Fast Recovery Diodes .....	G-6
Outline Drawings .....	G-7



### General Purpose:

**VOLTAGE: 100V TO 6500V**  
**CURRENT: 100A TO 12,000A**

### Fast Recovery:

**VOLTAGE: 200V TO 3600V**  
**CURRENT: 125A TO 1500A**



## Numbering System

R5001210XXWA is a 100 Ampere, 1200 Volt,  
General Purpose Diode (STUD)

**R500 12 10 XX WA**

(1) (2) (3) (4) (5)

R6031225HSYA is a 250 Ampere, 1200 Volt,  
Fast Recovery Diode (STUD)

**R603 12 25 HS YA**

(1) (2) (3) (4) (5)

R6201250XXOO is a 500 Ampere, 1200 Volt,  
General Purpose Diode (DISC)

**R620 12 50 XX OO**

(1) (2) (3) (4) (5)

R6221240HSOO is a 400 Ampere, 1200 Volt,  
Fast Recovery Diode (DISC)

**R622 12 40 HS OO**

(1) (2) (3) (4) (5)

(1) Type Number

(4) Reverse Recovery Time

(5) Lead Code

(2) Voltage Rating (x 100)

Code

Time (μsec)

Code

Time (μsec)

Device

Code

Description

(3) Current Rating:

XX

Standard Recovery

LS

0.7

R50\* Stud

WA

Power Lead: 4.48" from seating plane to center of 0.281" diameter hole in terminal lug

R5, R6 (x 10)

AS

5.0

MS

0.6

R60\* Stud

YA

Power Lead: 5.44" from seating plane to center of 0.343" diameter hole in terminal lug

R7, R8, R9, RA, RB (x 100)

BS

4.0

NS

0.2

CS

3.0

OS

4.5

DS

2.5

PS

0.5

ES

2.0

QS

0.4

FS

1.5

RS

0.3

GS

1.25

TS

3.5

HS

1.0

US

2.75

IS

5.5

VS

2.25

JS

0.9

ZS

10.0

KS

0.8

R70\* Stud


UA

Power Lead: 9.66" from seating plane to center of 0.343" diameter hole in terminal lug (Note: High voltage R7 studs with convoluted seal will be 9.96" from seating plane to center of 0.343" diameter hole in terminal lug)


**General Purpose Disc/Hockey Puk Diodes** (Refer to device datasheets at [www.pwr.com](http://www.pwr.com) for test conditions.)

Type	EUROPEAN			NORTH AMERICAN				$V_{FM}/I_{FM}$ Volts/Amperes ( $T_j(\max)$ )	$V_{TO}$ Volts ( $T_j(\max)$ )	$R_T$ m $\Omega$ ( $T_j(\max)$ )	$R_{th(j-c)}$ °C/W	$R_{th(c-s)}$ °C/W	$T_j(\max)$ °C	Outline Drawings	
	$V_{RRM}$ Volts ( $V_{RMS} = V_{RRM} + 100V$ )	$I_{F(av)}/T_C$ Amperes/°C (180° sin)	$I_{F(RMS)}$ Amperes (180° sin)	$I_{FSM}$ Amperes (10ms, $T_j(\max)$ ; No $V_{RRM}$ Reapplied)	$I^2t$ A <sup>2</sup> sec (10ms, $T_j(\max)$ ; No $V_{RRM}$ Reapplied)	$I_{FSM}$ Amperes (8.3ms, $T_j(\max)$ ; 100% $V_{RRM}$ Reapplied)	$I^2t$ A <sup>2</sup> sec (8.3ms, $T_j(\max)$ ; 100% $V_{RRM}$ Reapplied)							Number	Page
<b>Up to 1200V</b>															
RA20--48XX	200 – 1200	4800 / 98	7,535	73,500	27.0 x 10 <sup>6</sup>	49,000	10.0 x 10 <sup>6</sup>	0.71 / 1000	0.65128	0.06315	0.013	0.001	190	7	G-9
RBS8--70XX	200 – 600	7000 / 79	11,000	90,000	40.5 x 10 <sup>6</sup>	60,000	1.5 x 10 <sup>6</sup>	0.70 / 1000	0.64564	0.04421	0.0095	0.002	175	9	G-9
RDS8--10XX	200 – 1200	10,000 / 90	15,708	111,000	5.13 x 10 <sup>7</sup>	120,000	6.00 x 10 <sup>7</sup>	0.75 / 4000	0.642	2.28 x 10 <sup>-4</sup>	0.0075	0.0015	175	12	G-10
<b>Up to 2000V</b>															
R7S0--08XX	200 – 1600	800 / 121	1,250	12,750	812,813	8,500	301,000	1.95 / 2000	0.91169	0.51788	0.035	0.02	175	2	G-7
R720--12XX	200 – 1600	1200 / 106	1,885	18,750	1.7 x 10 <sup>6</sup>	12,500	650,700	0.91 / 1000	0.68	0.24	0.055	0.02	175 – 200	4	G-8
R7S0--12XX	200 – 1600	1200 / 86	1,875	13,500	911,250	9,000	337,500	1.25 / 2000	0.831	0.441	0.035	0.02	175	2	G-7
R7S0--16XX	200 – 1600	1600 / 98	2,500	21,000	2.2 x 10 <sup>6</sup>	14,000	816,700	1.2 / 2000	0.62955	0.2929	0.035	0.02	200	2	G-7
R9G0--22XX	200 – 1600	2200 / 134	3,455	45,000	10.1 x 10 <sup>6</sup>	30,000	3.7 x 10 <sup>6</sup>	0.97 / 2000	0.79109	0.08773	0.020	0.0075	150	5	G-8
R9S0--30XX	600 – 1600	3000 / 115	4,710	45,000	10.1 x 10 <sup>6</sup>	30,000	3.7 x 10 <sup>6</sup>	1.10 / 1500	0.912	0.089	0.0145	0.006	175	6	G-8
RBK8--63XX	1200 – 1600	6300 / 100	9896	115,900	6.72 x 10 <sup>7</sup>	84,600	2.99 x 10 <sup>7</sup>	0.85 / 4000	0.688	0.0362	0.0115	0.002	190	10	G-10
RBS8--72XX	1200 – 1600	7200 / 84	11,310	115,900	6.72 x 10 <sup>7</sup>	84,600	2.99 x 10 <sup>7</sup>	0.90 / 4000	0.704	0.0479	0.0095	0.002	190	9	G-9
RCS8--80XX	200 – 1400	8000	12,566	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	175	11	G-10
<b>Up to 2600V</b>															
R620--30XX	200 – 2400	300 / 142	470	8,250	340,313	5,500	125,000	1.33 / 500	0.92	0.88	0.095	0.02	150 – 190	1	G-7
R620--40XX	200 – 2400	400 / 128	625	9,000	405,000	6,000	150,000	1.25 / 500	0.89	0.74	0.095	0.02	150 – 190	1	G-7
R620--50XX	200 – 2400	500 / 114	785	9,750	475,313	6,500	175,000	1.17 / 500	0.85	0.63	0.095	0.02	150 – 190	1	G-7
R7S0--08XX	1800 – 2400	800 / 121	1,250	12,750	812,813	8,500	301,000	1.95 / 2000	0.91169	0.51788	0.035	0.02	175	3	G-7
R720--09XX	200 – 2600	900 / 110	1,415	12,750	812,813	8,500	301,000	1.26 / 1000	0.84	0.42	0.055	0.02	150 – 200	4	G-8
R7S0--12XX	1800 – 2400	1200 / 86	1,875	13,500	911,250	9,000	337,500	1.25 / 2000	0.38717	0.4301	0.035	0.02	175	3	G-7
R820--16XX	200 – 2600	1600 / 82	2,513	12,950	6.99 x 10 <sup>5</sup>	14,000	8.17 x 10 <sup>5</sup>	1.06 / 1500	0.68	0.25	0.035	0.015	175	4	G-8
R9G0--18XX	200 – 2400	1800 / 110	2,825	32,250	5.2 x 10 <sup>6</sup>	21,500	1.9 x 10 <sup>6</sup>	1.25 / 2000	0.81366	0.2242	0.02	0.008	175	5	G-8
RA20--36XX	200 – 2400	3600 / 100	5,650	60,000	18.0 x 10 <sup>6</sup>	40,000	6.67 x 10 <sup>6</sup>	0.79 / 1000	0.66324	0.1134	0.013	0.007	175	7	G-9
RBK8--50XX	1800 – 2400	5000 / 90	7854	91,500	3.49 x 10 <sup>7</sup>	66,800	1.86 x 10 <sup>7</sup>	0.95 / 4000	0.661	0.0659	0.0115	0.002	175	10	G-10
RAS8--54XX	1600 – 2400	5450 / 90	8561	115,000	6.61 x 10 <sup>7</sup>	84,000	2.94 x 10 <sup>7</sup>	1.15 / 3000 ( $T_j = 25^\circ\text{C}$ )	0.734	0.0665	0.011	0.002	175	8	G-9
RBS8--56XX	1800 – 2400	5680 / 90	8922	103,700	4.48 x 10 <sup>7</sup>	75,700	2.39 x 10 <sup>7</sup>	0.95 / 4000	0.661	0.0659	0.0095	0.002	175	9	G-9
RDS8--80XX	200 – 2500	8000 / 90	12,566	150,000	3.57 x 10 <sup>7</sup>	100,000	4.17 x 10 <sup>7</sup>	0.82 / 4000	0.654	3.82 x 10 <sup>-2</sup>	0.007	0.001	175	12	G-10
<b>Up to 3200V</b>															
RBK8--40XX	200 – 3200	4000 / 82	6,280	75,000	28.1 x 10 <sup>6</sup>	50,000	10.4 x 10 <sup>6</sup>	0.78 / 1000	0.69989	0.09373	0.0115	0.002	160	10	G-10
RBS8--45XX	2200 – 3200	4500 / 94	7069	83,250	3.47 x 10 <sup>7</sup>	60,800	1.54 x 10 <sup>7</sup>	1.00 / 2000	0.786	0.0997	0.0095	0.002	175	9	G-9
RDK8--85XX	2400 – 3000	8500 / 90	13,352	92,500	4.28 x 10 <sup>7</sup>	67,500	1.90 x 10 <sup>7</sup>	0.82 / 4000	0.762	5.28 x 10 <sup>-2</sup>	0.0063	0.001	160	13	G-11
RDS8--90XX	1400 – 3000	9000	14,137	TBD	TBD	TBD	TBD	TBD	TBD	TBD	0.0075	0.0015	175	12	G-10


## General Purpose Disc/Hockey Puk Diodes (Refer to device datasheets at [www.pwr.com](http://www.pwr.com) for test conditions.)

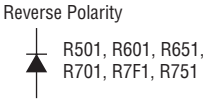
Type	 $V_{RRM}$ Volts ( $V_{RMS} = V_{RRM} + 100V$ )	$I_{F(av)/TC}$ Amperes/°C (180° sin)	$I_{F(RMS)}$ Amperes (180° sin)	EUROPEAN		NORTH AMERICAN		$V_{FM}/I_{FM}$ Volts/Amperes ( $T_j(max)$ )	$V_{TO}$ Volts ( $T_j(max)$ )	$R_T$ mΩ ( $T_j(max)$ )	$R_{th(j-c)}$ °C/W	$R_{th(c-s)}$ °C/W	$T_{j(max)}$ °C	Outline Drawings		
				$I_{FSM}$ Amperes (10ms, $T_{j(max)}$ , No $V_{RRM}$ Reapplied)	$I^2t$ A <sup>2</sup> sec (10ms, $T_{j(max)}$ , No $V_{RRM}$ Reapplied)	$I_{FSM}$ Amperes (8.3ms, $T_{j(max)}$ , 100% $V_{RRM}$ Reapplied)	$I^2t$ A <sup>2</sup> sec (8.3ms, $T_{j(max)}$ , 100% $V_{RRM}$ Reapplied)							Number	Page	
<b>Up to 6500V</b>																
R720--06XX	200 – 4400	600 / 136	945	10,500	551,250	7,000	204,000	1.54 / 1000	0.92	0.61	0.055	0.02	150 – 200	4	G-8	
R8K8--06XX	6000 – 6500	600 / 100	942	7,300	$2.66 \times 10^5$	5,300	$1.19 \times 10^5$	1.80 / 800 ( $T_j = 25^\circ C$ )	0.77	1.08	0.035	0.015	150	4	G-8	
R820--07XX	4400 – 5200	690 / 100	1,084	6,938	$2.41 \times 10^5$	7,500	$2.34 \times 10^5$	1.94 / 1500	1.0	0.62	0.035	0.015	150	4	G-8	
R9G0--12XX	200 – 5400	1200 / 102	1,880	24,000	$2.8 \times 10^6$	16,000	$1.1 \times 10^6$	1.4 / 1000	1.07197	0.32357	0.020	0.008	150	5	G-8	
R9G0--14XX	6000 – 6500	1360 / 80	2,136	15,250	$1.6 \times 10^6$	12,500	$6.51 \times 10^6$	1.61 / 1500	0.793	0.521	0.20	0.0006	150	5	G-8	
RA20--20XX	200 – 5400	2000 / 99	3,140	36,000	$6.4 \times 10^6$	24,000	$2.4 \times 10^6$	1.39 / 2000	0.96347	0.20721	0.013	0.007	150	7	G-9	
RA20--25XX	200 – 4200	2500 / 100	3,920	42,000	$8.8 \times 10^6$	28,000	$3.2 \times 10^6$	0.87 / 1000	0.74116	0.1320	0.013	0.001	150	7	G-9	
RBK8--25XX	5600 – 6500	2500 / 85	3927	61,000	$1.86 \times 10^7$	44,500	$8.28 \times 10^6$	1.55 / 3000 ( $T_j = 25^\circ C$ )	0.79	0.238	0.0115	0.002	150	10	G-10	
RBT8--28XX	5600 – 6500	2850 / 85	4477	61,000	$1.86 \times 10^7$	44,500	$8.28 \times 10^6$	1.55 / 3000	0.79	0.238	0.0095	0.002	150	9	G-9	
RDK8--40XX	6000 – 6500	4000 / 68	6,283	55,000	$1.28 \times 10^7$	60,000	$1.50 \times 10^7$	1.65 / 4000	1.13	$0.117 \times 10^{-4}$	0.0075	0.001	150	13	G-11	

## General Purpose Welding Diodes (Refer to device datasheets at [www.pwr.com](http://www.pwr.com) for test conditions.)

Type	 $V_{RRM}$ Volts ( $V_{RMS} = V_{RRM} + 100V$ )	$I_{F(av)/TC}$ Amperes/°C (180° sin)	$I_{F(RMS)}$ Amperes (180° sin)	EUROPEAN		NORTH AMERICAN		$V_{FM}/I_{FM}$ Volts/Amperes ( $T_j(max)$ @25°C)	$V_{TO}$ Volts ( $T_j(max)$ )	$R_T$ mΩ ( $T_j(max)$ )	$R_{th(j-c)}$ °C/W	$R_{th(c-s)}$ °C/W	$T_{j(max)}$ °C	Outline Drawings	
				$I_{FSM}$ Amperes (10ms, $T_{j(max)}$ , No $V_{RRM}$ Reapplied)	$I^2t$ A <sup>2</sup> sec (10ms, $T_{j(max)}$ , No $V_{RRM}$ Reapplied)	$I_{FSM}$ Amperes (8.3ms, $T_{j(max)}$ , 100% $V_{RRM}$ Reapplied)	$I^2t$ A <sup>2</sup> sec (8.3ms, $T_{j(max)}$ , 100% $V_{RRM}$ Reapplied)							Number	Page
R9XSMD0448XX	400	4800 / 84	7540	33,600	$5.64 \times 10^6$	35,000	$5.10 \times 10^6$	1.20 / 4000	0.701	0.053	0.009	0.005	175	20	G-13
R9XSMD0463XX	400	6300 / 40	9,896	33,600	$5.64 \times 10^6$	35,000	$5.10 \times 10^6$	1.10 / 4000	0.701	0.053	0.009	0.005	175	20	G-13
R9XSMD0475XX	400	7450 / 40	11,702	42,000	$8.82 \times 10^6$	43,700	$7.96 \times 10^6$	1.05 / 4000	0.720	0.0308	0.009	0.005	175	21	G-13
RAXMHC0412XX	400	12,000 / 79	18,850	57,300	$1.64 \times 10^7$	60,000	$1.50 \times 10^7$	0.95 / 4000	0.977	0.00915	0.005	0.003	175	22	G-14
RAS00412XX	400	12,000 / 68	18,850	57,300	$1.64 \times 10^7$	60,000	$1.50 \times 10^7$	1.00 / 4000	0.98	$4.91 \times 10^{-3}$	0.008	0.004	175	8	G-9

**General Purpose Stud Diodes** (Refer to device datasheets at [www.pwr.com](http://www.pwr.com) for test conditions.)

Type		$V_{RRM}$ Volts ( $V_{RMS} = V_{RRM} + 100V$ )	$I_{F(av)/TC}$ Amperes/°C (180° sin)	$I_{F(RMS)}$ Amperes (180° sin)	EUROPEAN		NORTH AMERICAN		$V_{FM}/I_{FM}$ Volts/Amperes ( $T_j(max)$ )	$V_{TO}$ Volts ( $T_j(max)$ )	$R_T$ mΩ ( $T_j(max)$ )	$R_{th(j-c)}$ °C/W	$R_{th(c-s)}$ °C/W	$T_j(max)$ °C	Outline Drawings	
					$I_{FSM}$ Amperes (10ms, $T_j(max)$ , No $V_{RRM}$ Reapplied)	$I^2t$ A <sup>2</sup> sec (10ms, $T_j(max)$ , No $V_{RRM}$ Reapplied)	$I_{FSM}$ Amperes (8.3ms, $T_j(max)$ , 100% $V_{RRM}$ Reapplied)	$I^2t$ A <sup>2</sup> sec (8.3ms, $T_j(max)$ , 100% $V_{RRM}$ Reapplied)							Number	Page
<b>Up to 1600V</b>																
R500--10XXWA, R501--10XXWA		200 – 1600	100 / 163	160	3,450	59,513	2,300	22,000	1.0 / 80	0.80	1.99	0.28	0.20	200	14	G-11
R500--15XXWA, R501--15XXWA		200 – 1600	150 / 147	236	4,500	101,250	3,000	37,500	1.0 / 100	0.85	1.08	0.28	0.20	200	14	G-11
R700--05XXUA, R701--05XXUA		200 – 1600	550 / 125	865	15,000	$1.1 \times 10^6$	10,000	416,500	0.89 / 1000	0.65	0.25	0.12	0.04	200	17	G-12
R750--05XXUA, R751--05XXUA		200 – 1600	550 / 125	865	15,000	$1.1 \times 10^6$	10,000	416,500	0.89 / 1000	0.65	0.25	0.12	0.04	200	19	G-13
<b>Up to 2600V</b>																
R600--20XXYA, R601--20XXYA		100 – 2600	200 / 140	315	8,250	340,313	5,500	125,000	1.32 / 500	0.84	0.94	0.18	0.10	150 – 190	15	G-11
R650--20XXYA, R651--20XXYA		100 – 2600	200 / 140	315	8,250	340,313	5,500	125,000	1.32 / 500	0.84	0.94	0.18	0.10	150 – 190	16	G-12
R600--25XXYA, R601--25XXYA		100 – 2600	250 / 130	400	9,000	405,000	6,000	150,000	1.24 / 500	0.88	0.72	0.18	0.10	150 – 190	15	G-11
R650--25XXYA, R651--25XXYA		100 – 2600	250 / 130	400	9,000	405,000	6,000	150,000	1.24 / 500	0.88	0.72	0.18	0.10	150 – 190	16	G-12
R600--30XXYA, R601--30XXYA		100 – 2600	300 / 123	470	9,750	475,313	6,500	175,000	1.17 / 500	0.92	0.53	0.18	0.10	150 – 190	15	G-11
R650--30XXYA, R651--30XXYA		100 – 2600	300 / 123	470	9,750	475,313	6,500	175,000	1.17 / 500	0.92	0.53	0.18	0.10	150 – 190	16	G-12
R700--04XXUA, R701--04XXUA		200 – 2600	450 / 100	700	12,750	812,813	8,500	266,000	1.25 / 1000	0.83	0.40	0.12	0.04	200	17	G-12
R750--04XXUA, R751--04XXUA		200 – 2600	450 / 100	700	12,750	812,813	8,500	266,000	1.25 / 1000	0.83	0.40	0.12	0.04	200	19	G-13
<b>Up to 4500V</b>																
R700--03XXUA, R701--03XXUA		200 – 4400	300 / 80	470	10,500	551,250	7,000	204,000	1.48 / 1000	0.92	0.55	0.12	0.04	200	17	G-12
R750--03XXUA, R751--03XXUA		200 – 4400	300 / 80	470	10,500	551,250	7,000	204,000	1.48 / 1000	0.92	0.55	0.12	0.04	200	19	G-13
R7F0--03XXUA, R7F1--03XXUA		200 – 4400	300 / 80	470	10,500	551,250	7,000	204,000	1.48 / 1000	0.92	0.55	0.12	0.04	200	18	G-12



## Fast Recovery Disc/Hockey Puk Diodes (Refer to device datasheets at [www.pwr.com](http://www.pwr.com) for test conditions.)

Type	$V_{RRM}$ Volts ( $V_{RMS} = V_{RRM} + 100V$ )	$I_{F(av)/TC}$ Amperes/°C (180° sin)	$I_{F(RMS)}$ Amperes (180° sin)	EUROPEAN		NORTH AMERICAN		$V_{FM}/I_{FM}$ Volts/Amperes ( $T_j(max)$ )	$V_{T0}$ Volts ( $T_j(max)$ )	$R_T$ mΩ ( $T_j(max)$ )	$R_{th(j-c)}$ °C/W	$R_{th(c-s)}$ °C/W	$T_j(max)$ °C	Outline Drawings	
				$I_{FSM}$ Amperes (10ms, $T_j(max)$ , No $V_{RRM}$ Reapplied)	$i^2t$ A <sup>2</sup> sec (10ms, $T_j(max)$ , No $V_{RRM}$ Reapplied)	$I_{FSM}$ Amperes (8.3ms, $T_j(max)$ , No $V_{RRM}$ Reapplied)	$i^2t$ A <sup>2</sup> sec (8.3ms, $T_j(max)$ , No $V_{RRM}$ Reapplied)							Number	Page
<b>Up to 1600V</b>															
R622--40*S00	200 – 1600	400 / 70	625	6,750	227,813	4,500	85,000	1.40 / 200	1.23	0.84	0.095	0.025	150	1	G-7
R622--55*S00	200 – 1600	550 / 70	860	9,000	405,000	6,000	150,000	1.29 / 700	0.97	0.44	0.095	0.025	150	1	G-7
R722--06*S00	200 – 1600	650 / 70	1000	11,250	632,813	7,500	234,000	1.51 / 400	1.12	0.67	0.055	0.020	150	4	G-8
R722--08*S00	200 – 1600	800 / 70	1,250	16,500	1.3 x 10 <sup>6</sup>	11,000	504,000	1.22 / 400	1.08	0.36	0.055	0.020	150	4	G-8
R7S2--09*S00	200 – 1600	900 / 70	1,440	11,250	632,813	7,500	234,000	1.55 / 500	1.32	0.44	0.035	0.025	150	3	G-7
R7S2--10*S00	200 – 1600	1000 / 70	1,550	16,500	1,361,250	11,000	504,000	1.24 / 500	1.05	0.37	0.035	0.025	150	3	G-7
<b>Up to 2600V</b>															
R722--05*S00	200 – 2600	500 / 70	785	9,750	475,313	6,500	176,000	1.52 / 500	0.99	0.86	0.055	0.020	150	4	G-8
R722--07*S00	200 – 2600	700 / 70	1100	14,250	1.01 x 10 <sup>6</sup>	9,500	376,000	1.0 / 300	0.87	0.57	0.055	0.020	150	4	G-8
R7S2--07*S00	200 – 2600	700 / 70	1100	9,750	475,313	6,500	176,000	1.42 / 400	1.10	0.72	0.035	0.025	150	3	G-7
R7S2--08*S00	200 – 2600	800 / 70	1,250	14,250	1.01 x 10 <sup>6</sup>	9,500	376,000	1.17 / 500	0.86	0.55	0.035	0.025	150	3	G-7
<b>Up to 3600V</b>															
R9G2--12*S00	200 – 3600	1200 / 70	1,900	21,000	2.2 x 10 <sup>6</sup>	14,000	820,000	1.95 / 1000	1.18	0.62	0.018	0.008	150	5	G-8
R9G2--15*S00	200 – 3600	1500 / 70	2,350	27,000	3.6 x 10 <sup>6</sup>	18,000	1.35 x 10 <sup>6</sup>	1.5 / 1000	1.04	0.39	0.018	0.008	150	5	G-8

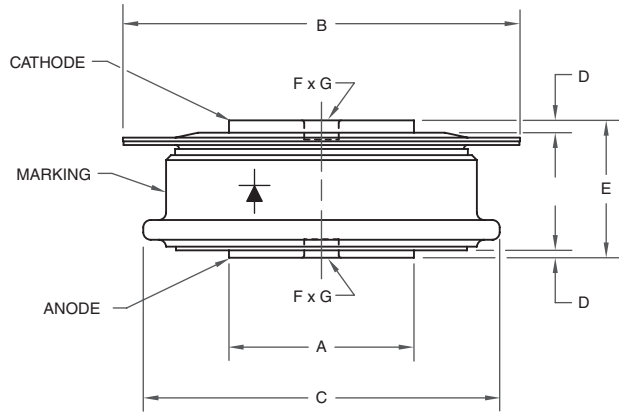
## Fast Recovery Stud Diodes (Refer to device datasheets at [www.pwr.com](http://www.pwr.com) for test conditions.)

Type	$V_{RRM}$ Volts ( $V_{RMS} = V_{RRM} + 100V$ )	$I_{F(av)/TC}$ Amperes/°C (180° sin)	$I_{F(RMS)}$ Amperes (180° sin)	EUROPEAN		NORTH AMERICAN		$V_{FM}/I_{FM}$ Volts/Amperes ( $T_j(max)$ )	$V_{T0}$ Volts ( $T_j(max)$ )	$R_T$ mΩ ( $T_j(max)$ )	$R_{th(j-c)}$ °C/W	$R_{th(c-s)}$ °C/W	$T_j(max)$ °C	Outline Drawings	
				$I_{FSM}$ Amperes (10ms, $T_j(max)$ , No $V_{RRM}$ Reapplied)	$i^2t$ A <sup>2</sup> sec (10ms, $T_j(max)$ , No $V_{RRM}$ Reapplied)	$I_{FSM}$ Amperes (8.3ms, $T_j(max)$ , No $V_{RRM}$ Reapplied)	$i^2t$ A <sup>2</sup> sec (8.3ms, $T_j(max)$ , No $V_{RRM}$ Reapplied)							Number	Page
<b>Up to 1600V</b>															
R502--13*SWA, R503--13*SWA	200 – 1400	125 / 70	195	3,750	70,313	2,500	26,000	1.84 / 200	1.17	3.09	0.28	0.12	150	14	G-11
R502--18*SWA, R503--18*SWA	200 – 1400	175 / 70	275	5,250	137,813	3,500	51,000	1.48 / 300	0.85	1.57	0.28	0.12	150	14	G-11
R602--25*SYA, R603--25*SYA	200 – 1600	250 / 70	400	6,750	227,813	4,500	85,000	1.39 / 200	1.20	0.86	0.17	0.10	150	15	G-11
R602--35*SYA, R603--35*SYA	200 – 1600	350 / 70	550	9,000	405,000	6,000	150,000	1.18 / 400	0.95	0.51	0.17	0.10	150	15	G-11

Forward Polarity  
 R502, R602

Reverse Polarity  
 R503, R603

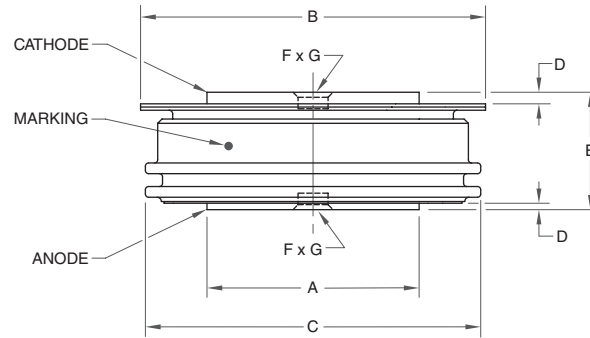
# 1 R620, R622



Dim.	Inches	Millimeters
A	0.752 Dia.	19.1 Dia.
B	1.658 Dia.	42.1 Dia.
C	1.461 Dia.	37.1 Dia.
D	0.0197 Min.	0.5 Min.

Dim.	Inches	Millimeters
E	0.567 Max.	14.4 Max.
F	0.142 Dia.	3.6 Dia.
G	0.0787 Deep	2.0 Deep

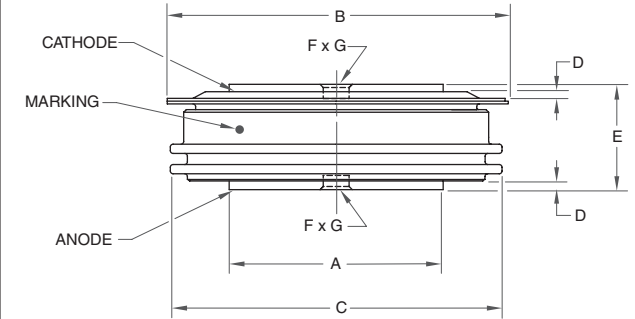
# 2 R7S0 ( $\leq 1600V$ )



Dim.	Inches	Millimeters
A	0.995 Dia.	25.27 Dia.
B	1.650 Dia.	41.9 Dia.
C	1.585 Dia.	40.26 Dia.
D	0.040 Min.	1.01 Min.

Dim.	Inches	Millimeters
E	0.605 Max.	15.37 Max.
F	0.145 Dia.	3.68 Dia.
G	0.0787 Deep	2.0 Deep

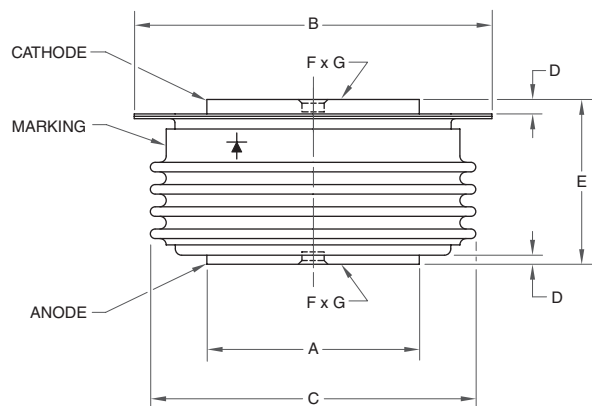
# 3 R7S0 ( $\geq 1800V$ ), R7S2



Dim.	Inches	Millimeters
A	1.17 Dia.	29.7 Dia.
B	1.90 Dia.	48.3 Dia.
C	1.85 Dia.	47.0 Dia.
D	0.028 Min.	0.7 Min.

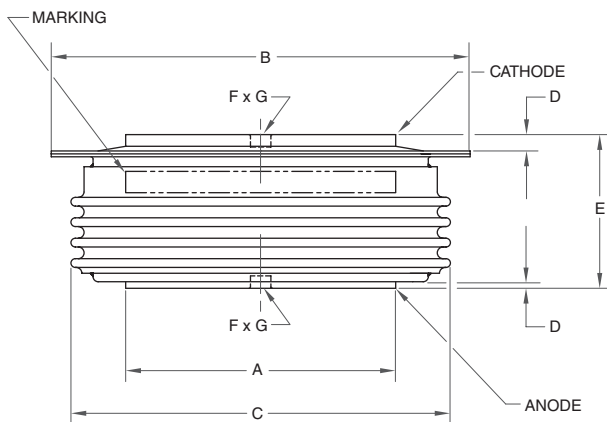
Dim.	Inches	Millimeters
E	0.606 Max.	15.4 Max.
F	0.142 Dia.	3.6 Dia.
G	0.0787 Deep	2.0 Deep

## 4 R720, R722, R820, R8K8



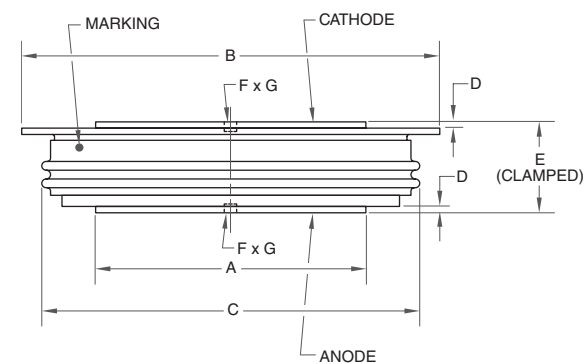
Dim.	Inches	Millimeters
A	1.343 Dia.	34.1 Dia.
B	2.299 Dia.	58.4 Dia.
C	2.091 Dia.	53.1 Dia.
D	0.028 Min.	0.7 Min.

## 5 R9G0, R9G2



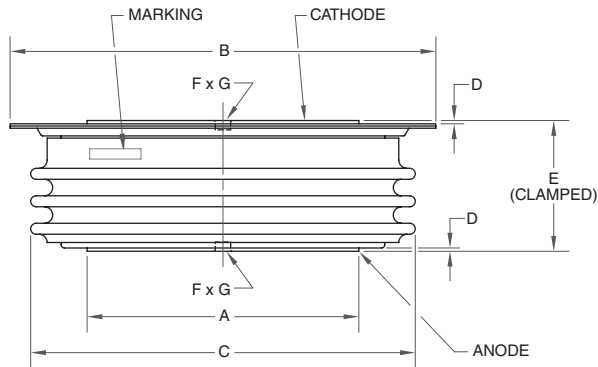
Dim.	Inches	Millimeters
A	1.858 Dia.	47.2 Dia.
B	2.8898 Dia.	73.4 Dia.
C	2.6496 Dia.	67.3 Dia.
D	0.028 Min.	0.7 Min.

## 6 R9S0



Dim.	Inches	Millimeters
A	1.85 Dia.	47.0 Dia.
B	2.913 Dia.	74.0 Dia.
C	2.638 Dia.	67 Dia.
D	0.028 Min.	0.7 Min.

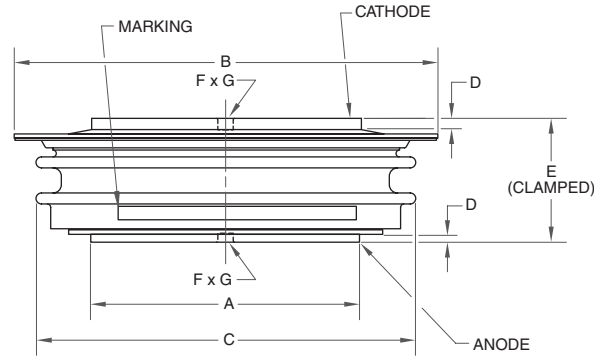
# 7 RA20



Dim.	Inches	Millimeters
A	2.469 Dia.	62.7 Dia.
B	3.909 Dia.	99.3 Dia.
C	3.543 Dia.	90.0 Dia.
D	0.028 Min.	0.7 Min.

Dim.	Inches	Millimeters
E	1.339 Max.	34.0 Max.
F	0.142 Dia.	3.6 Dia.
G	0.0787 Deep	2.0 Deep

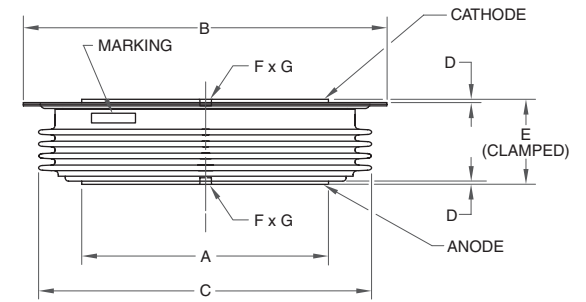
# 8 RAS8, RAS00412XX



Dim.	Inches	Millimeters
A	2.48 Dia.	63.0 Dia.
B	3.93 Dia.	100.0 Dia.
C	3.543 Dia.	91.0 Dia.
D	0.028 Min.	0.7 Min.

Dim.	Inches	Millimeters
E	1.031 Max.	26.2 Max.
F	0.14 Dia.	3.5 Dia.
G	0.07 Deep	1.8 Deep

# 9 RBS8, RBT8



## RBS8

Dim.	Inches	Millimeters
A	2.88 Dia.	73.2 Dia.
B	4.36 Dia.	110.7 Dia.
C	3.95 Dia.	100.3 Dia.
D	0.03 Min.	0.76 Min.

Dim.	Inches	Millimeters
E	1.08 Max.	27.4 Max.
F	0.142 Dia.	3.6 Dia.
G	0.0787 Deep	2.0 Deep

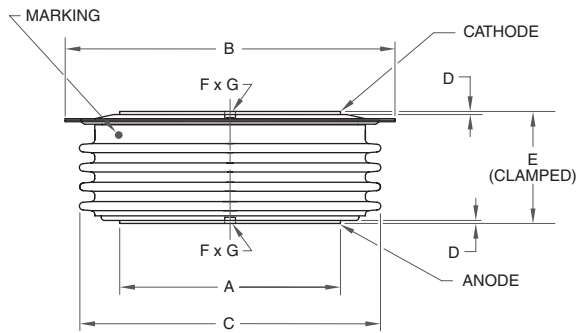
## RBT8

Dim.	Inches	Millimeters
A	2.88 Dia.	73.2 Dia.
B	4.36 Dia.	110.7 Dia.
C	3.95 Dia.	100.3 Dia.
D	0.03 Min.	0.76 Min.

Dim.	Inches	Millimeters
E	1.04 Max.	26.5 Max.
F	0.142 Dia.	3.6 Dia.
G	0.0787 Deep	2.0 Deep



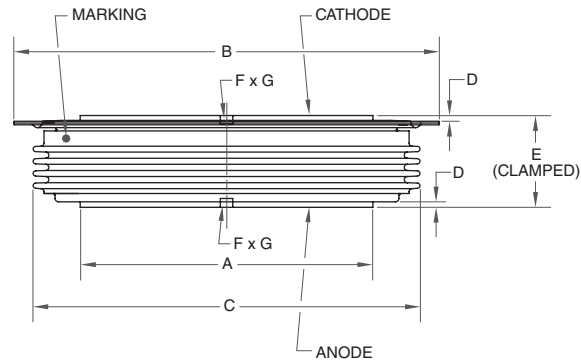
## 10 RBK8



Dim.	Inches	Millimeters
A	2.882 Dia.	73.2 Dia.
B	4.36 Dia.	110.7 Dia.
C	3.961 Dia.	100.6 Dia.
D	0.028 Min.	0.7 Min.

Dim.	Inches	Millimeters
E	1.5 Max.	38.1 Max.
F	0.142 Dia.	3.6 Dia.
G	0.0787 Deep	2.0 Deep

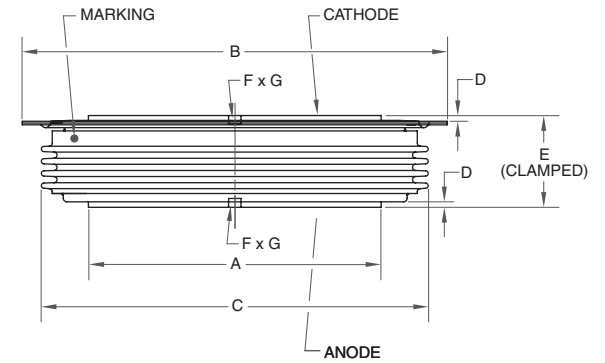
## 11 RCS8



Dim.	Inches	Millimeters
A	3.311 Dia.	84.1 Dia.
B	4.889 Dia.	124.2 Dia.
C	4.370 Dia.	111.0 Dia.
D	0.028 Min.	0.7 Min.

Dim.	Inches	Millimeters
E	1.059 Max.	26.9 Max.
F	0.142 Dia.	3.6 Dia.
G	0.0787 Deep	2.0 Deep

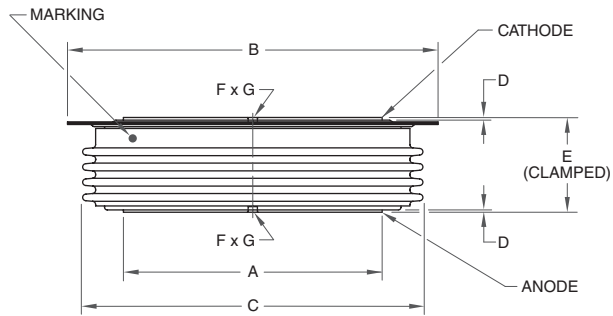
## 12 RDS8



Dim.	Inches	Millimeters
A	3.913 Dia.	99.4 Dia.
B	5.661 Dia.	143.8 Dia.
C	5.181 Dia.	131.6 Dia.
D	0.028 Min.	0.7 Min.

Dim.	Inches	Millimeters
E	1.059 Max.	26.9 Max.
F	0.142 Dia.	3.6 Dia.
G	0.0787 Deep	2.0 Deep

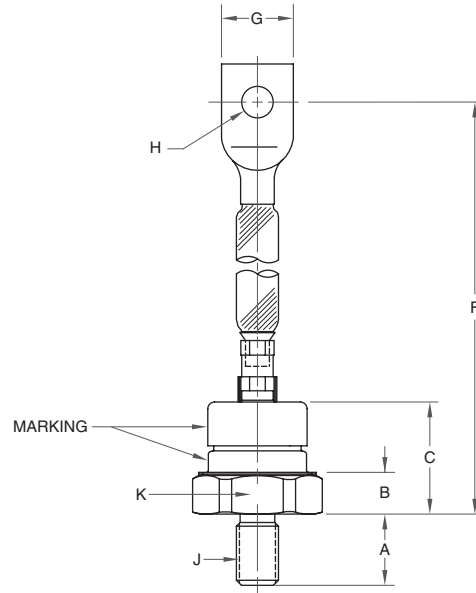
# 13 RDK8



Dim.	Inches	Millimeters
A	3.913 Dia.	99.4 Dia.
B	5.661 Dia.	143.8 Dia.
C	5.181 Dia.	131.6 Dia.
D	0.028 Min.	0.7 Min.

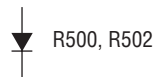
Dim.	Inches	Millimeters
E	1.5 Max.	38.1 Max.
F	0.142 Dia.	3.6 Dia.
G	0.0787 Deep	2.0 Deep

# 14 R500, R501, R502, R503

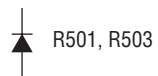


Dim.	Inches	Millimeters
A	0.626	15.9
B	0.358	9.1
C	0.980	24.9
F	4.606 Max.	117.0 Max.
G	0.654 Max.	16.6 Max.

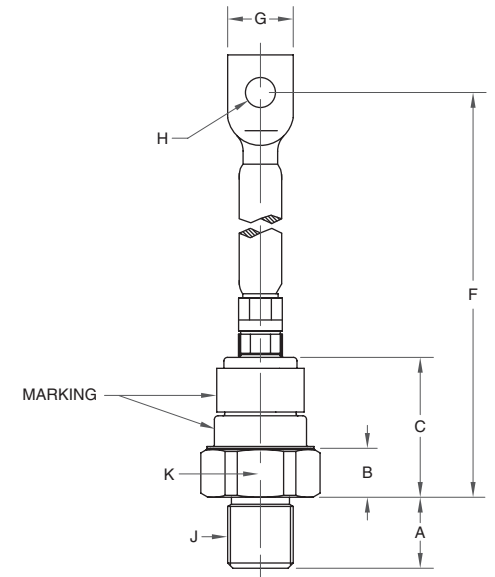
Forward Polarity



Reverse Polarity



# 15 R600, R601, R602, R603



Dim.	Inches	Millimeters
A	0.811	20.6
B	0.559	14.2
C	1.598	40.6
F	5.563 Max.	141.3 Max.
G	0.752 Max.	19.1 Max.

Dim.	Inches	Millimeters
H	0.343 Dia.	8.7 Dia.
J	0.750-16 UNF-2A Thread	
K	1.244 Max.	31.6 Max.

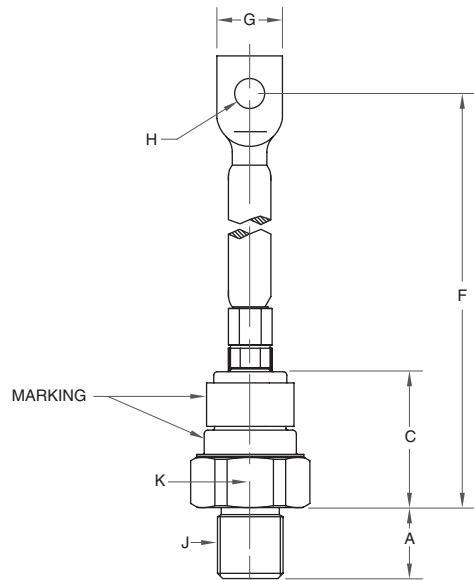
Forward Polarity



Reverse Polarity



# 16 R650



Dim.	Inches	Millimeters
A	0.822	20.88
C	1.56	39.68
F	5.56 Max.	141.228 Max.
G	19.05 Max.	0.75 Max.

Dim.	Inches	Millimeters
H	0.343 Dia.	8.72 Dia.
J	M20 x 1.5	
K	1.245 Max.	31.776 Max.
	(Across Flats)	

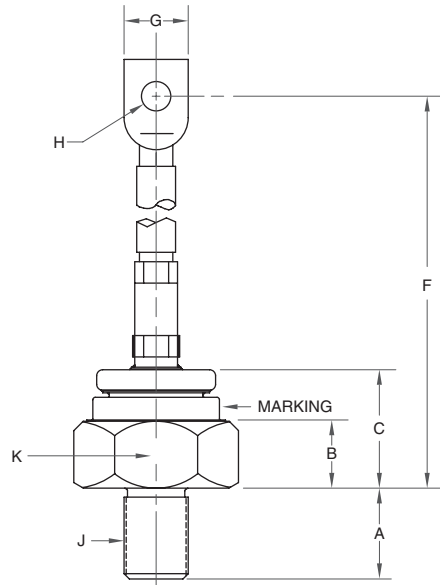
Forward Polarity



Reverse Polarity



# 17 R700, R701



Dim.	Inches	Millimeters
A	1.059	26.9
B	0.7795	19.8
C	1.409	35.8
F	9.784 Max.	248.5 Max.
G	0.752 Max.	19.1 Max.

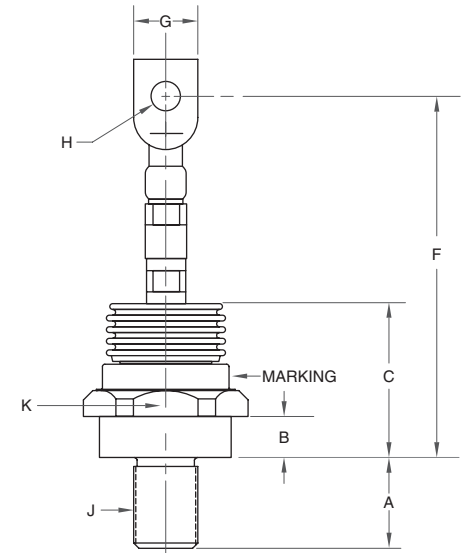
Forward Polarity



Reverse Polarity



# 18 R7F0, R7F1



Dim.	Inches	Millimeters
A	1.062	26.97
B	0.47	11.94
C	1.81	45.97
F	4.25 Max.	107.95 Max.
G	0.75 Max.	19.05 Max.

Forward Polarity

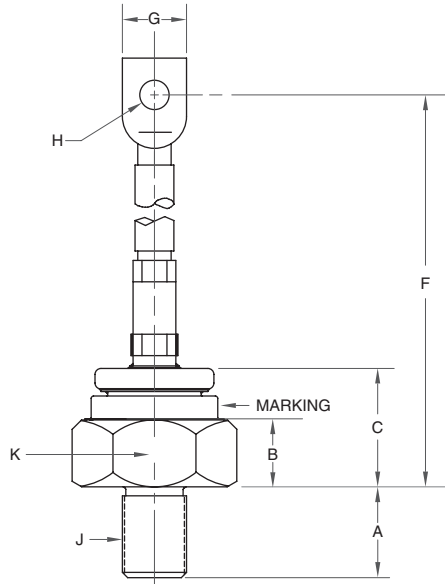


Reverse Polarity



Dim.	Inches	Millimeters
H	0.343 Dia.	8.73 Dia.
J	0.750-16 UNF-2A Thread	
K	1.750 Max.	44.45 Max.
	(Across Flats)	

# 19 R750

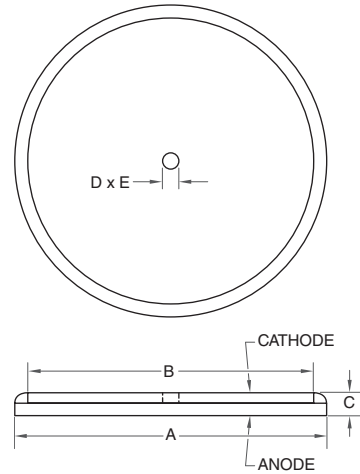


Dim.	Inches	Millimeters
A	1.06	20.9
B	0.75	19.0
C	1.46	37.0
F	9.78 Max.	248.4 Max.
G	0.740 Max.	21.5 Max.

Dim.	Inches	Millimeters
H	0.355 Dia.	9.0 Dia.
J	M24 x 1.5	
K	1.755 Max.	44.6 Max.

(Across Flats)

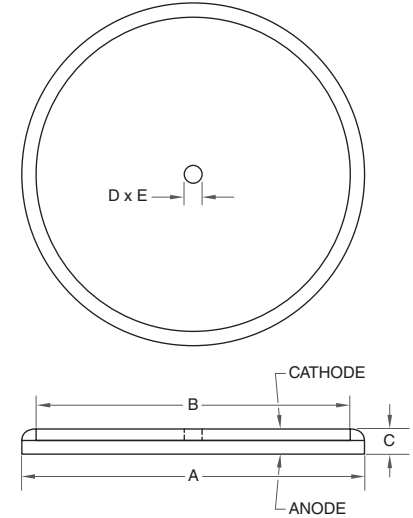
# 20 R9XSMD0448XX, R9XSMD0463XX



Dim.	Inches	Millimeters
A	1.97 Dia.	50.0 Dia.
B	1.7 Dia.	43.2 Dia.
C	0.20	5.0

Dim.	Inches	Millimeters
D	0.142 Dia.	3.6 Dia.
E	0.047 Deep	1.2 Deep

# 21 R9XSMD0475XX



Dim.	Inches	Millimeters
A	2.20 Dia.	56.0 Dia.
B	1.937 Dia.	49.2 Dia.
C	0.2	5.0

Dim.	Inches	Millimeters
D	0.142 Dia.	3.6 Dia.
E	0.047 Deep	1.2 Deep

Forward Polarity



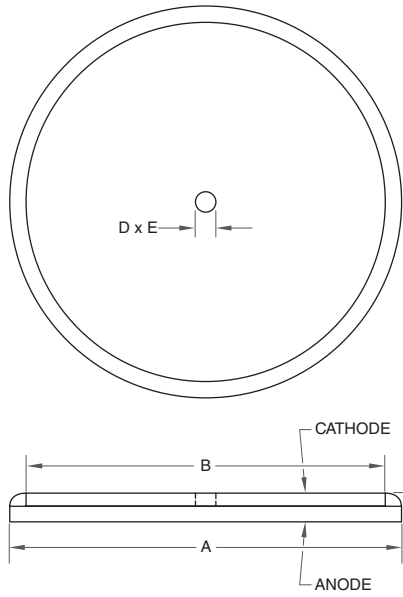
R750

Reverse Polarity



R751

# 22 RAXMHC0412XX



Dim.	Inches	Millimeters	Dim.	Inches	Millimeters
A	2.56 Dia.	65.0 Dia.	D	0.142 Dia.	3.6 Dia.
B	2.28 Dia.	58.0 Dia.	E	0.047 Deep	1.2 Deep
C	0.20	5.0			

# THYRISTOR & DIODE MODULES

## POW-R-BLOK™ Modules

### Applications Include:

- Battery Chargers
- Induction Heating/Melting
- Medical Equipment
- Motor Controls
- Power Supplies
- UPS
- Welding

## POW-R-BRIK™

### Applications Include:

- AC Motor Starters
- DC Motor Controls
- Mining Power Centers
- Resistance Welding Controls
- Transportation

### Circuit Configurations:

- Single
- Dual
- Split Dual
- Common Anode
- Common Cathode
- AC Switch

## TABLE OF CONTENTS

Numbering System .....	H-2
Optional Cathode & Gate Lead Kits for POW-R-BLOK™ Modules .....	H-3
Optional Hardware for ND, NS, LD & LS POW-R-BLOK™ Modules .....	H-3
Diode Modules .....	H-4
Thyristor Modules .....	H-6
Thyristor / Diode Modules .....	H-9
Thyristor / Diodes (POW-R-BRIKs™) .....	H-10
Outline Drawings .....	H-11



**POW-R-BLOK™ Modules**  
**VOLTAGE: 600V TO 5000V**  
**CURRENT: 90A TO 2500A**

**POW-R-BRIK™ Modules**  
**VOLTAGE: 600V TO 5000V**  
**CURRENT: 300A TO 1585A**

# Numbering System

## Thyristor (SCR) and Diode Modules

CD431290B is a 90 Ampere, 1200 Volt, Dual Switch Module

CD 4 3 12 90 B  
 (1) (2) (3) (4) (5) (6)

(1) Type Number:

CD, ND, LD, PD = Dual Switches  
 CS, LS, PS = Single Switches  
 PA = AC Switch  
 CC = Common Cathode  
 CN, LN = Common Anode

(2) Package Style

(3) Configuration:

1 = Diode  
 2 = SCR / Diode  
 3 = SCR  
 7 = Diode / SCR

(4) Voltage Rating (x 100):

08 = 800V  
 12 = 1200V  
 16 = 1600V  
 20 = 2000V  
 24 = 2400V  
 36 = 3600V  
 40 = 4000V  
 50 = 5000V

(5) Current Rating:

Device	Current
CD4	A2 = 25A
CS4	40 = 40A
CC4	50 = 50A
CN4	60 = 60A
	90 = 90A
	99 = 100A
CD6	x 10
CS6	Example:
ND	25 = 250A
LD	
LS	
PD	x 100
PA	Example:
	07 = 700A
PS	14 = 1400A
PS	15 = 1500A
PS	20 = 2000A
PS	25 = 2500A

(6) Suffix Identifier:

B, C or D

QRD6516001 is a 160 Ampere, 6500 Volt, Dual Switch Module

Q R D 65 16 001  
 (1) (2) (3) (4) (5) (6)

(1) Product Line

(2) Type Number:  
 R = Rectifier

(3) Package Style:  
 D = Dual Switch

(4) Voltage Rating (x 100)

(5) Current (x 10)

(6) Serial Designation:  
 001 = Special Designation

## POW-R-BRIKs™

P3Z7ACT700W16 is a 1600 Volt, Dual SCR Module with Standard Thermistor

P3 Z 7 A CT7 00 W16  
 (1) (2) (3) (4) (5) (6) (7)

(1) Type Number:

P1 = Dual Diode  
 P2 = SCR / Diode  
 P3 = Dual SCR  
 P7 = Diode / SCR

(2), (3), (4) Package Style

(3) Indicates Size of the Block & Elements

(5) Element Code:

Refer to Product Datasheet for the Element Codes to Reference the Corresponding Disc Device for Additional Specifications

(6) Special Features:

00 = Module Includes Standard Thermistor  
 XT = No Thermistor  
 All Other Codes Denote Unique Customer Specifications

(7) Voltage Rating:

V04 = 400V  
 V08 = 800V  
 W12 = 1200V  
 W16 = 1600V

## Optional Cathode & Gate Lead Kits for POW-R-BLOK™ Modules

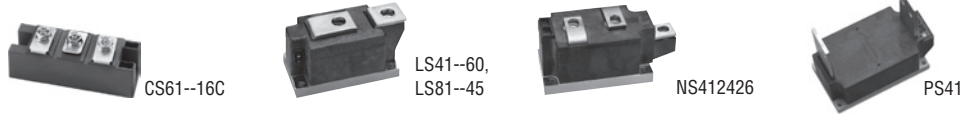
Type	Description	Lead Kit	Outline Drawings	
			Number	Page
CD42, CD47 (Half Control)	One red & one yellow lead per module	MR	14	H-15
CD43 (Full Control)	Two red & two yellow leads per module	MQ	14	H-15
CD63, LD43, ND43, PD43(Full Control)	Lead Set 1 & Lead Set 2 (one each/module)	NK	15	H-16
CD62, LD42, LS43, ND42(Half Control), PD47	Lead Set 1 (one/module)	NL	15	H-16
CD67, LD47, ND47, PD42, PS43 (Half Control)	Lead Set 2 (one/module)	NM	15	H-16

## Optional Hardware for ND, NS, LD and LS POW-R-BLOK™ Modules

Type	Hardware Kit	Description
ND	87	Three M8 x 1.25 screws (16mm in length) with captive lock washer and flat washer
NS	86	Two M8 x 1.25 screws (16mm in length) with captive lock washer and flat washer
LD	50	Three M10 x 1.5 screws (20mm in length) and three 10mm lock washers
LS	49	Two M10 x 1.5 screws (20mm in length) and two 10mm lock washers



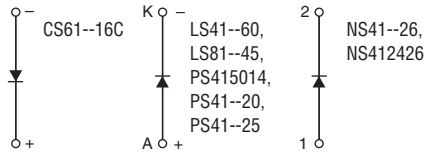
**Diode Modules** (Refer to device datasheets at [www.pwr.x.com](http://www.pwr.x.com) for test conditions.)



Type	V <sub>DRM</sub> / V <sub>RRM</sub> Volts (V <sub>RSM</sub> = V <sub>RRM</sub> + 100V)	I <sub>F(av)</sub> /T <sub>C</sub> Amperes/°C (180° sin)	I <sub>F(RMS)</sub> Amperes (180° sin)	EUROPEAN		NORTH AMERICAN		V <sub>FM</sub> /I <sub>FM</sub> Volts/Amperes (T <sub>j(max)</sub> )	V <sub>TO</sub> Volts (T <sub>j(max)</sub> )	R <sub>T</sub> mΩ (T <sub>j(max)</sub> )	R <sub>th(j-c)</sub> °C/W	R <sub>th(c-s)</sub> °C/W	T <sub>j(max)</sub> °C	Outline Drawings		
				I <sub>FSM</sub> Amperes (10ms, T <sub>j(max)</sub> , No V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (10ms, T <sub>j(max)</sub> , No V <sub>RRM</sub> Reapplied)	I <sub>FSM</sub> Amperes (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)							Number	Page	
<b>Single Diode Modules</b>																
CS61--16C	800 – 1800	160 / 99	250	6,600	217,800	4,822	96,880	1.56 / 480 (25°C)	0.80	1.35	0.23	0.08	150	10	H-14	
CS61--16C	2000 – 2500	160 / 95	250	6,600	217,800	4,822	96,880	1.66 / 480 (25°C)	0.80	1.45	0.23	0.08	150	10	H-14	
CS61--16C	2600 – 3600	160 / 90	250	5,720	163,590	4,179	72,760	1.90 / 480 (25°C)	0.90	1.35	0.23	0.08	150	10	H-14	
◆LS81--45	3200 – 4000	450 / 107	710	15,050	1.13 x 10 <sup>6</sup>	11,000	504,000	1.90 / 1800 (150°C)	0.85	0.55	0.065	0.02	150	3	H-11	
◆LS41--60	800 – 2400	600 / 106	950	31,500	4.9 x 10 <sup>6</sup>	21,000	1.8 x 10 <sup>6</sup>	1.16 / 1500	0.747	0.243	0.065	0.02	150	3	H-11	
◆NS412426	800 – 2000	260 / 112	408	12,000	720,000	8,000	266,667	1.35 / 1500	0.764	0.360	0.07	0.03	150	5	H-12	
PS415014	4500 – 5000	1400 / 91	2,200	32,700	7.19 x 10 <sup>6</sup>	24,000	2.39 x 10 <sup>6</sup>	1.30 / 3000	0.71	0.17	0.032	0.009	150	4	H-12	
PS41--20	3600 – 4000	2000 / 99	3,140	60,690	18.4 x 10 <sup>6</sup>	47,600	9.4 x 10 <sup>6</sup>	1.2 / 3000 (150°C)	0.745	0.064	0.024	0.009	150	4	H-12	
PS41--25	800 – 2400	2500 / 90	3,925	72,600	26.3 x 10 <sup>6</sup>	53,000	11.7 x 10 <sup>6</sup>	1.10 / 3000 (25°C)	0.681	0.051	0.024	0.009	150	4	H-12	

◆For Optional Hardware go to Page H-3.

**Single Diode Modules**



## Diode Modules (Refer to device datasheets at [www.pwr.x.com](http://www.pwr.x.com) for test conditions.)



CD41--99C,  
CD411699D



CD61--16C,  
CD614020C



ND41



LD41,  
LD81



PD41

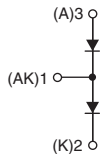


QRD4518001,  
QRD6516001

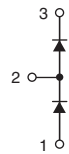
Type	V <sub>DRM</sub> / V <sub>RRM</sub> Volts (V <sub>RSM</sub> = V <sub>RRM</sub> + 100V)	I <sub>F(av)</sub> /T <sub>C</sub> Amperes/°C (180° sin)	I <sub>F(RMS)</sub> Amperes (180° sin)	EUROPEAN		NORTH AMERICAN		V <sub>FM</sub> /I <sub>FM</sub> Volts/Amperes (T <sub>J(max)</sub> )	V <sub>TO</sub> Volts (T <sub>J(max)</sub> )	R <sub>T</sub> mΩ (T <sub>J(max)</sub> )	R <sub>th(j-c)</sub> °C/W	R <sub>th(c-s)</sub> °C/W	T <sub>J(max)</sub> °C	Outline Drawings	
				I <sub>FSM</sub> Amperes (10ms, T <sub>J(max)</sub> , No V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (10ms, T <sub>J(max)</sub> , No V <sub>RRM</sub> Reapplied)	I <sub>FSM</sub> Amperes (8.3ms, T <sub>J(max)</sub> , 100% V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (8.3ms, T <sub>J(max)</sub> , 100% V <sub>RRM</sub> Reapplied)							Number	Page
<b>Dual Diode Modules</b>															
CD41--99C	800 – 1800	100 / 104	157	2,860	40,890	2,089	18,190	1.45 / 330 (25°C)	0.80	1.74	0.35	0.15	150	8	H-13
CD41--99C	2000 – 2500	100 / 101	157	2,860	40,890	2,089	18,190	1.65 / 330 (25°C)	0.85	1.88	0.35	0.15	150	8	H-13
CD411699D	1600	100 / 106	157	2,860	40,890	2,089	18,190	1.35 / 300 (25°C)	0.85	1.30	0.35	0.15	150	8	H-13
CD61--16C	800 – 1800	160 / 99	250	6,600	217,800	4,822	96,880	1.56 / 480 (25°C)	0.80	1.35	0.23	0.08	150	10	H-14
CD61--16C	2000 – 2500	160 / 95	250	6,600	217,800	4,822	96,880	1.66 / 480 (25°C)	0.80	1.45	0.23	0.08	150	10	H-14
CD61--16C	2600 – 3600	160 / 90	250	5,720	163,590	4,179	72,760	1.90 / 480 (25°C)	0.90	1.35	0.23	0.08	150	10	H-14
CD61--20C	3600 – 4000	200 / 100	314	7,500	281,000	—	—	1.69 / 440 (25°C)	0.95	1.40	0.5	0.04	150	10	H-14
QRD4518001	4500	180 / 95	282	5,215	151,000	3,860	140,000	1.35 / 180	0.27	5.216	0.099	0.018	150	16	H-16
QRD6516001	6500	160 / 100	251	TBD	TBD	TBD	TBD	1.25 / 160 (Typ.)	0.776	8.081	TBD	TBD	150	16	H-16
◆ND41--25	2600 – 3400	250 / 101	392	7,125	254,000	5,000	104,000	1.80 / 1500	1.095	0.48	0.07	0.14	150	5	H-12
◆ND41--26	800 – 2600	260 / 112	408	12,000	720,000	8,000	266,667	1.35 / 1500	0.764	0.360	0.07	0.03	150	5	H-12
◆ND41--32	800 – 2000	320 / 101	502	12,000	720,000	8,000	266,667	1.35 / 1500	0.764	0.360	0.07	0.03	150	5	H-12
◆ND41--35	800 – 1800	350 / 102	550	11,000	605,000	8,450	297,510	1.15 / 1500	0.654	0.320	0.07	0.03	150	5	H-12
◆LD81--45	3200 – 4000	450 / 107	710	15,050	1.13 x 10 <sup>6</sup>	11,000	504,000	1.90 / 1800	0.85	0.55	0.0325	0.065	150	6	H-12
◆LD41--60	800 – 2600	600 / 106	950	31,500	4.9 x 10 <sup>6</sup>	21,000	1.8 x 10 <sup>6</sup>	1.16 / 1500	0.747	0.243	0.0325	0.01	150	6	H-12
PD41--10	3600 – 4000	1000 / 87	1570	35,700	—	28,000	3.6 x 10 <sup>6</sup>	1.35 / 3000	0.741	0.132	0.029	0.009	150	4	H-12
PD41--11	800 – 2400	1100 / 87	1725	40,350	8.1 x 10 <sup>6</sup>	29,500	3.26 x 10 <sup>6</sup>	1.00 / 3000	0.869	0.237	0.029	0.009	150	4	H-12

◆For Optional Hardware go to Page H-3.

### Dual Diode Modules



CD41--99C, CD41--99D, CD61--16C, CD614020C,  
ND41--25, ND41--26, ND41--32, ND41--35,  
LD41--60, LD81--45,  
PD41--10, PD41--11



QRD4518001,  
QRD6516001

## Thyristor Modules

(Refer to device datasheets at [www.pwr.com](http://www.pwr.com) for test conditions.)

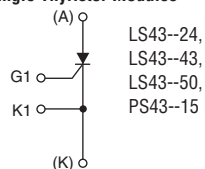


Type	V <sub>DRM</sub> / V <sub>RRM</sub> Volts (V <sub>RSM</sub> = V <sub>RRM</sub> + 100V)	I <sub>T(av)</sub> /T <sub>C</sub> Amperes/°C (180° sin)	I <sub>T(RMS)</sub> Amperes (180° sin)	EUROPEAN		NORTH AMERICAN		V <sub>TM</sub> /I <sub>TM</sub> Volts/Amperes (T <sub>J(max)</sub> )	V <sub>TO</sub> Volts (T <sub>J(max)</sub> )	R <sub>T</sub> mΩ (T <sub>J(max)</sub> )	di/dt Amperes/μsec (Non-Repelitive)	dV/dt Volts/μsec	R <sub>th(j-c)</sub> °C/W	R <sub>th(c-s)</sub> °C/W	T <sub>J(max)</sub> °C	Outline Drawings Number	Page
				I <sub>TSM</sub> Amperes (10ms, T <sub>J(max)</sub> , No V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (10ms, T <sub>J(max)</sub> , No V <sub>RRM</sub> Reapplied)	I <sub>TSM</sub> Amperes (8.3ms, T <sub>J(max)</sub> , 100% V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (8.3ms, T <sub>J(max)</sub> , 100% V <sub>RRM</sub> Reapplied)										
◆●LS43--24	3600 – 4000	240 / 74	377	7,525	236,000	5,500	126,000	3.5 / 1000 (25°C)	1.563	2.141	TBD	1000	0.065	0.02	125	3	H-11
◆●LS43--43	1800 – 2200	430 / 80	800	12,000	0.72 x 10 <sup>6</sup>	12,000	0.82 x 10 <sup>6</sup>	1.77 / 1500	0.88	0.66	200	1000	0.065	0.02	130	3	H-11
◆●LS43--50	600 – 1600	500 / 86	900	25,500	3.25 x 10 <sup>6</sup>	17,000	1.20 x 10 <sup>6</sup>	1.29 / 1500	0.81	0.32	200	1000	0.065	0.02	130	3	H-11
●PS43--15	600 – 1800	1500 / 86	2355	93,000	43.2 x 10 <sup>6</sup>	68,000	19.3 x 10 <sup>6</sup>	1.02 / 3000	0.691	0.102	400	200	0.024	0.009	125	4	H-12
●PS43--15	2000 – 2400	1500 / 76	2355	74,640	27.8 x 10 <sup>6</sup>	54,570	12.4 x 10 <sup>6</sup>	1.50 / 3000 (25°C)	0.849	0.130	400	300	0.024	0.009	125	4	H-12

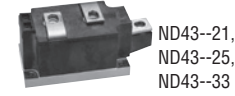
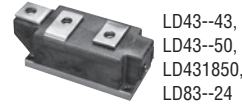
◆ For Optional Hardware go to Page H-3.

● For Optional Cathode & Gate Lead Kits, go to page H-3.

### Single Thyristor Modules



# Thyristor Modules (Refer to device datasheets at [www.pwr.com](http://www.pwr.com) for test conditions.)

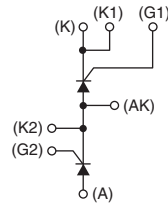


Type	V <sub>DRM</sub> / V <sub>RRM</sub> Volts (V <sub>RSM</sub> = V <sub>RRM</sub> + 100V)	I <sub>T(av)</sub> /T <sub>C</sub> Amperes/°C (180° sin)	I <sub>T(RMS)</sub> Amperes (180° sin)	EUROPEAN		NORTH AMERICAN		V <sub>TM</sub> /I <sub>TM</sub> Volts/Amperes (T <sub>J(max)</sub> )	V <sub>T0</sub> Volts (T <sub>J(max)</sub> )	R <sub>T</sub> mΩ (T <sub>J(max)</sub> )	di/dt Amperes/μsec (Non-Replicative)	dV/dt Volts/μsec	R <sub>th(j-c)</sub> °C/W	R <sub>th(c-s)</sub> °C/W	T <sub>J(max)</sub> °C	Outline Drawings	
				I <sub>TSM</sub> Amperes (10ms, T <sub>J(max)</sub> ; No V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (10ms, T <sub>J(max)</sub> ; No V <sub>RRM</sub> Reapplied)	I <sub>TSM</sub> Amperes (8.3ms, T <sub>J(max)</sub> ; 100% V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (8.3ms, T <sub>J(max)</sub> ; 100% V <sub>RRM</sub> Reapplied)									Number	Page
●CD43--90B	800 – 1800	90 / 87	140	1,785	15,910	1,570	10,270	1.10 / 100	0.80	2.40	150	500	0.135	0.1	125	1	H-11
●CD43--90C	800 – 1800	90 / 85	141	2,200	24,200	1,600	10,760	1.70 / 270 (25°C)	0.80	3.01	TBD	800	0.28	0.15	125	9	H-14
●CD43--99C	1600 – 1800	100 / 88	157	2,640	34,800	1,930	15,500	1.83 / 270 (25°C)	0.80	3.01	TBD	800	0.25	0.15	125	9	H-14
●CD63--15B	800 – 1800	160 / 85	250	4,870	119,000	4,300	76,700	0.99 / 100	0.80	1.67	300	1000	0.08	0.05	125	2	H-11
●CD63--15C	800 – 1800	150 / 86	235	5,940	176,415	4,340	78,470	1.70 / 480 (25°C)	0.80	1.69	TBD	800	0.17	0.08	125	11	H-14
●CD63--15C	2000 – 2500	150 / 83	235	4,950	122,510	3,615	54,490	2.20 / 480 (25°C)	1.10	1.96	TBD	800	0.17	0.08	125	11	H-14
◆●ND43--21	600 – 2000	210 / 92	330	13,200	871,200	8,800	320,000	1.30 / 625	0.813	0.810	800	500	0.07	0.03	130	5	H-12
◆●LD83--24	3600 – 4000	240 / 74	377	7,525	236,000	5,500	126,000	3.5 / 1000 (25°C)	1.563	2.141	TBD	1000	0.0325	0.065	125	6	H-12
◆●ND43--25	600 – 1600	250 / 89	393	13,200	871,200	8,800	322,000	1.20 / 625	0.819	0.589	800	500	0.07	0.03	130	5	H-12
◆●ND43--25	1800 – 2000	250 / 84	393	13,200	871,200	8,800	322,000	1.36 / 625	0.877	0.731	800	500	0.07	0.03	130	5	H-12
◆●ND43--33	800 – 1600	330 / 71	520	11,850	702,000	8,800	322,667	1.3 / 625 (25°C)	0.819	0.59	800	500	0.07	0.03	130	5	H-12
◆●LD43--43	1800 – 2200	430 / 80	800	12,000	0.72 x 10 <sup>6</sup>	12,000	0.82 x 10 <sup>6</sup>	1.77 / 1500	0.88	0.66	200	1000	0.0325	0.01	130	6	H-12
◆●LD43--50	600 – 1600	500 / 86	900	25,500	3.25 x 10 <sup>6</sup>	17,000	1.20 x 10 <sup>6</sup>	1.29 / 1500	0.81	0.32	200	1000	0.0325	0.01	130	6	H-12
◆●LD431850	1800	500 / 84	900	25,500	3.25 x 10 <sup>6</sup>	17,000	1.20 x 10 <sup>6</sup>	1.4 / 1500	0.916	0.280	200	1000	0.0325	0.01	130	6	H-12
●PD43--06	2000 - 2400	600 / 81	942	40,350	8.14 x 10 <sup>6</sup>	29,500	3.63 x 10 <sup>6</sup>	1.60 / 3000	0.869	0.237	400	200	0.029	0.009	125	4	H-12
●PD43--07	600 - 1800	700 / 82	1100	54,750	14.9 x 10 <sup>6</sup>	40,000	6.60 x 10 <sup>6</sup>	1.30 / 3000	0.703	0.184	400	200	0.029	0.009	125	4	H-12

◆For Optional Hardware go to Page H-3.

●For Optional Cathode & Gate Lead Kits, go to page H-3.

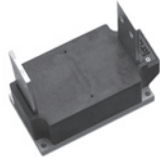
## Dual Thyristor Modules and AC Switches



CD43--90B, CD43--90C, CD--99C,  
CD63--15B, CD63--15C,  
LD43--43, LD43--50, LD431850, LD83--24,  
ND43--21, ND43--25, ND43--33,  
PD43--06, PD43--07

# Thyristor Modules

(Refer to device datasheets at [www.pwr.com](http://www.pwr.com) for test conditions.)

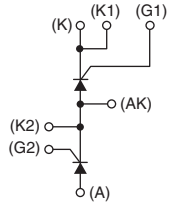


PA43--06,  
PA43--07

Type	V <sub>DRM</sub> / V <sub>RRM</sub> Volts (V <sub>DRM</sub> = V <sub>RRM</sub> + 100V)	I <sub>T(av)</sub> /T <sub>C</sub> Amperes/°C (180° sin)	I <sub>T(RMS)</sub> Amperes (180° sin)	EUROPEAN		NORTH AMERICAN		V <sub>FM</sub> /I <sub>FM</sub> Volts/Amperes (T <sub>J</sub> = 25°C)	V <sub>TO</sub> Volts (T <sub>J(max)</sub> )	R <sub>T</sub> mΩ (T <sub>J(max)</sub> )	di/dt Amperes/μsec (Non-Repetitive)	dV/dt Volts/μsec	R <sub>th(j-c)</sub> °C/W	R <sub>th(c-s)</sub> °C/W	T <sub>J(max)</sub> °C	Outline Drawings	
				I <sub>TSM</sub> Amperes (10ms, T <sub>J(max)</sub> , No V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (10ms, T <sub>J(max)</sub> , No V <sub>RRM</sub> Reapplied)	I <sub>TSM</sub> Amperes (8.3ms, T <sub>J(max)</sub> , 100% V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (8.3ms, T <sub>J(max)</sub> , 100% V <sub>RRM</sub> Reapplied)									Number	Page
<b>AC Switches</b>																	
●PA43--06	1300 - 2400	600 / 81	1330	40,350	8.14 x 10 <sup>6</sup>	29,500	3.63 x 10 <sup>6</sup>	1.75 / 3000	0.869	0.237	400	600	0.029	0.009	125	4	H-12
●PA43--07	600 - 1800	700 / 82	1550	54,750	14.9 x 10 <sup>6</sup>	40,000	6.60 x 10 <sup>6</sup>	1.30 / 3000	1.010	0.117	400	600	0.029	0.009	125	4	H-12

●For Optional Cathode & Gate Lead Kits, go to page H-3.

## AC Switches



PA43--06, PA43--07

# Thyristor / Diode Modules (Refer to device datasheets at [www.pwr.x.com](http://www.pwr.x.com) for test conditions.)

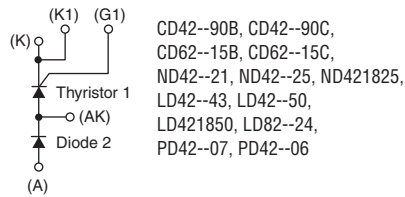


Type	V <sub>DRM</sub> / V <sub>RRM</sub> Volts (V <sub>RSM</sub> = V <sub>RRM</sub> + 100V)	I <sub>T(av)</sub> /T <sub>c</sub> Amperes/°C (180° sin)	I <sub>T(RMS)</sub> Amperes (180° sin)	EUROPEAN		NORTH AMERICAN		V <sub>TM</sub> /I <sub>TM</sub> Volts/Amperes (T <sub>j(max)</sub> )	V <sub>TO</sub> Volts (T <sub>j(max)</sub> )	R <sub>T</sub> mΩ (T <sub>j(max)</sub> )	di/dt Amperes/μsec (Non-Repetitive)	dV/dt Volts/μsec	R <sub>th(j-c)</sub> °C/W	R <sub>th(c-s)</sub> °C/W	T <sub>j(max)</sub> °C	Outline Drawings Number Page
				I <sub>TSM</sub> Amperes (10ms, T <sub>j(max)</sub> , No V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (10ms, T <sub>j(max)</sub> , No V <sub>RRM</sub> Reapplied)	I <sub>TSM</sub> Amperes (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)									
●CD42--90B, CD47--90B	800 – 1800	90 / 87	140	1,785	15,910	1,570	10,270	1.10 / 100	0.80	2.40	150	500	0.135	0.1	125	1 H-11
●CD42--90C, CD47--90C	800 – 1800	90 / 85	141	2,200	24,200	1,600	10,760	1.70 / 270 (25°C)	0.80	3.01	TBD	800	0.28	0.15	125	12 H-15
●CD62--15B	800 – 1800	160 / 85	250	4,870	119,000	4,300	76,700	0.99 / 100 (25°C)	0.80	1.67	300	1000	0.08	0.05	125	2 H-11
●CD62--15C, CD67--15C	800 – 1800	150 / 86	235	5,940	176,415	4,340	78,470	1.70 / 480 (25°C)	0.80	1.69	TBD	800	0.17	0.08	125	13 H-15
●CD62--15C, CD67--15C	2000 – 2500	150 / 83	235	4,950	122,510	3,615	54,490	2.20 / 480 (25°C)	1.10	1.96	TBD	800	0.17	0.08	125	13 H-15
◆●ND42--21, ND47--21	600 – 2000	210 / 92	330	13,200	871,200	8,800	320,000	1.30 / 625	0.813	0.810	800	500	0.07	0.03	130	5 H-12
◆●ND42--25, ND47--25	600 – 1600	250 / 89	393	13,200	871,200	8,800	322,000	1.20 / 625	0.819	0.589	800	500	0.07	0.03	130	5 H-12
◆●ND421825, ND471825	1800	250 / 84	393	13,200	871,200	8,800	322,000	1.36 / 625	0.877	0.731	800	500	0.07	0.03	130	5 H-12
◆●LD42--43, LD47--43	1800 – 2200	510 / 70	800	12,000	0.72 x 10 <sup>6</sup>	12,000	0.82 x 10 <sup>6</sup>	1.77 / 1500	0.88	0.66	200	1000	0.0325	0.01	130	6 H-12
◆●LD42--50, LD47--50	600 – 1600	500 / 86	900	25,500	3.2 x 10 <sup>6</sup>	17,000	1.20 x 10 <sup>6</sup>	1.29 / 1500	0.81	0.32	200	1000	0.0325	0.01	130	6 H-12
◆●LD421850, LD471850	1800	500 / 84	900	25,500	3.2 x 10 <sup>6</sup>	17,000	1.20 x 10 <sup>6</sup>	1.36 / 1500	0.916	0.280	200	1000	0.0325	0.01	130	6 H-12
◆●LD82--24	3600 – 4000	240 / 74	377	7,525	236,000	5,500	126,000	3.5 / 1000 (25°C)	1.563	2.141	TBD	1000	0.0325	0.065	125	6 H-12
●PD42--07, PD47--07	600 – 1800	700 / 82	1100	60,000	18.0 x 10 <sup>6</sup>	40,000	6.60 x 10 <sup>6</sup>	1.30 / 3000	0.703	0.184	400	200	0.029	0.009	125	4 H-12
●PD42--06, PD47--06	2000 – 2400	600 / 81	942	44,250	9.7 x 10 <sup>6</sup>	29,500	3.63 x 10 <sup>6</sup>	1.60 / 3000	0.869	0.237	400	200	0.029	0.009	125	4 H-12

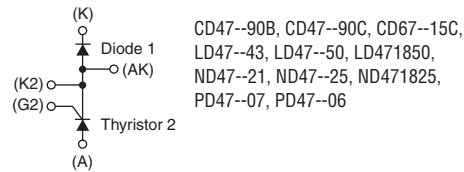
◆For Optional Hardware go to Page H-3.

●For Optional Cathode & Gate Lead Kits, go to page H-3.

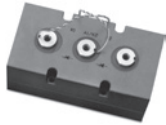
### Thyristor 1, Diode 2 Modules



### Diode 1, Thyristor 2 Modules

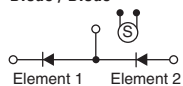


**Thyristor / Diodes (POW-R-BRIKs™)** (Refer to device datasheets at [www.pwr.com](http://www.pwr.com) for test conditions.)



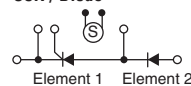
Type	$V_{DRM} / V_{RRM}$ Volts ( $V_{RSM} = V_{RRM} + 100V$ )	$I_T(av)/T_C$ Amperes/°C ( $180^\circ \sin$ )	Maximim Power Dissipation (Watts)	E1 - $I_{TSM}/I_{FSM}$ Amperes ( $180^\circ \sin$ )	E2 - $I_{TSM}/I_{FSM}$ Amperes ( $180^\circ \sin$ )	Gate $V_{gt}$ Volts	Gate $I_{gt}$ mAmperes	di/dt Amperes/ $\mu$ sec (Non-Repettive)	dV/dt Volts/ $\mu$ sec	$R_{th(j-c)}$ °C/W (Per Module)	$R_{th(c-s)}$ °C/W (Per Module)	$R_{th(c-a)}$ °C/W (Per Module)	$T_{j(max)}$ °C	Outline Drawings Number	Page
<b>Diode / Diode Modules</b>															
P1Z7AAR700W_	2200 – 3000	355 / 105	1125	7,000	7,000	—	—	—	—	0.04	0.010	0.10	150	7	H-13
P1Z8ABR800W_	1200 – 2200	435 / 105	1125	9,000	9,000	—	—	—	—	0.04	0.010	0.10	150	7	H-13
P1Z9AAR900W_	2200 – 3000	590 / 105	1500	16,000	16,000	—	—	—	—	0.03	0.008	0.08	150	7	H-13
P1Z9ACR900W_	800 - 1200	740 / 105	1500	30,000	30,000	—	—	—	—	0.03	0.008	0.08	150	7	H-13
P1Z9ADR900W_	600	800 / 110	1330	50,000	50,000	—	—	—	—	0.03	0.008	0.08	150	7	H-13
P1ZAADDA00W_	3600 - 5000	985 / 80	—	24,000	24,000	—	—	—	—	0.024	0.007	0.08	150	7	H-13
P1ZAABRA00W_	2200 - 3000	1270 / 80	—	—	—	—	—	—	—	0.03	0.008	0.08	150	7	H-13
P1ZAACRA00W_	1800 - 2200	1420 / 80	—	—	—	—	—	—	—	0.03	0.008	0.08	150	7	H-13
P1ZAADRA00W_	1200 - 1800	1585 / 80	—	—	—	—	—	—	—	0.03	0.008	0.08	150	7	H-13
<b>Half Controlled SCR / Diode Modules</b>															
P2Z7ABB700W_	1600 – 2200	380 / 85	1100	9,000	9,000	3	150	600	300	0.04	0.010	0.10	130	7	H-13
P2Z7ACB700W_	1200 – 1600	395 / 85	1100	10,000	14,000	3	150	600	300	0.04	0.010	0.10	130	7	H-13
P2Z9AAA900W_	2000 – 3000	430 / 85	1325	15,000	16,000	3	200	600	300	0.03	0.008	0.08	125	7	H-13
P2Z9ABA900W_	1600 - 2000	520 / 85	1465	17,000	16,000	3	200	600	300	0.03	0.008	0.08	130	7	H-13
P2Z9ACA900W_	1200 - 1600	590 / 85	1465	25,000	16,000	3	200	600	300	0.03	0.008	0.08	130	7	H-13
P2ZAABA00W_	1200 - 2200	880 / 80	—	—	—	3	200	400	300	0.03	0.008	0.08	125	7	H-13
<b>Full Control SCR / SCR Modules</b>															
P3Z8AAT800W_	2200 – 3000	300 / 85	1095	9,000	9,000	3	150	600	300	0.04	0.010	0.10	130	7	H-13
P3Z7ABT700W_	1600 – 2200	345 / 85	1095	9,000	9,000	3	150	600	300	0.04	0.010	0.10	130	7	H-13
P3Z9AAT900W_	2000 - 3000	355 / 85	1295	15,000	15,000	3	200	600	300	0.03	0.008	0.08	125	7	H-13
P3Z7ACT700W_	1200 – 1600	375 / 85	1095	10,000	10,000	3	150	600	300	0.04	0.010	0.10	130	7	H-13
P3Z8ABT800W_	1400 - 2200	390 / 85	1095	12,000	12,000	3	150	600	300	0.04	0.010	0.10	130	7	H-13
P3Z8ACT800W_	1200 - 1400	450 / 85	1095	15,000	15,000	3	150	600	300	0.04	0.010	0.10	130	7	H-13
P3Z9ABT900W_	1600 - 2000	470 / 85	1460	17,000	17,000	3	200	600	300	0.03	0.008	0.08	130	7	H-13
P3Z9ACT900W_	1200 - 1600	600 / 85	1460	25,000	25,000	3	200	600	300	0.03	0.008	0.08	130	7	H-13
P3ZAABA00W_	1200 - 2200	880 / 80	—	—	—	3	200	400	300	0.03	0.008	0.08	125	7	H-13
<b>Half Controlled Diode / SCR Modules</b>															
P7Z7ABB700W_	1600 – 2200	380 / 85	1100	9,000	9,000	3	150	600	300	0.04	0.010	0.10	130	7	H-13
P7Z7ABC700W_	1200 – 1600	395 / 85	1100	14,000	10,000	3	150	600	300	0.04	0.010	0.10	130	7	H-13
P7Z9AAA900W_	2000 – 3000	430 / 85	1325	16,000	15,000	3	200	600	300	0.03	0.008	0.08	125	7	H-13
P7Z9AAB900W_	1600 - 2000	520 / 85	1465	16,000	17,000	3	200	600	300	0.03	0.008	0.08	130	7	H-13
P7Z9AAC900W_	1200 - 1600	590 / 85	1465	16,000	25,000	3	200	600	300	0.03	0.008	0.08	130	7	H-13
P7ZAABA00W_	1200 - 2200	880 / 80	—	—	—	3	200	400	300	0.03	0.008	0.08	125	7	H-13

Diode / Diode



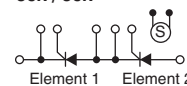
- P1Z7AAR700W\_
- P1Z8ABR800W\_
- P1Z9AAR900W\_
- P1Z9ACR900W\_
- P1Z9ADR900W\_
- P1ZAADDA00W\_
- P1ZAABRA00W\_
- P1ZAACRA00W\_
- P1ZAADRA00W\_

SCR / Diode



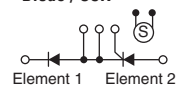
- P2Z7ABB700W\_
- P2Z7ACB700W\_
- P2Z9AAA900W\_
- P2Z9ABA900W\_
- P2Z9ACA900W\_
- P2ZAABA00W\_

SCR / SCR



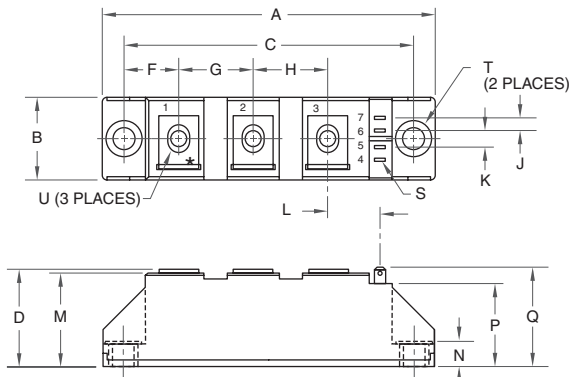
- P3Z7ABT700W\_
- P3Z7ACT700W\_
- P3Z8AAT800W\_
- P3Z8ABT800W\_
- P3Z8ACT800W\_
- P3Z9AAT900W\_
- P3Z9ABT900W\_
- P3Z9ACT900W\_
- P3ZAABA00W\_

Diode / SCR



- P7Z7ABB700W\_
- P7Z7ABC700W\_
- P7Z9AAA900W\_
- P7Z9AAB900W\_
- P7Z9AAC900W\_
- P7ZAABA00W\_

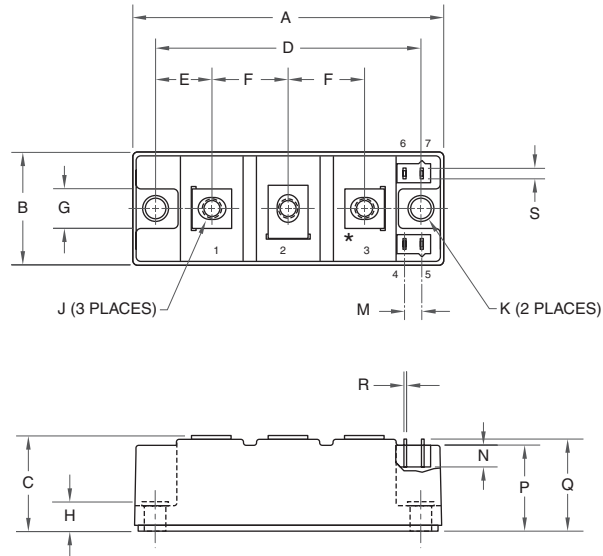
# 1 CD42--90B, CD43--90B, CD47--90B



Dim.	Inches	Millimeters
A	3.66	93.0
B	0.79	20.0
C	3.15	80.0
D	1.18	30.0
F	0.61	15.5
G	0.79	20.0
H	0.79	20.0
J	0.16	4.0
K	0.22	5.7

Dim.	Inches	Millimeters
L	0.59	15.5
M	1.10	28.0
N	0.31	8.0
P	0.94	24.0
Q	1.16	29.4
S	0.11 x 0.03	2.8 x 0.8
T	0.25	6.4
U	M5 Metric	M5

# 2 CD61, CD62--16B, CD63--15B, CD67, CS61\*



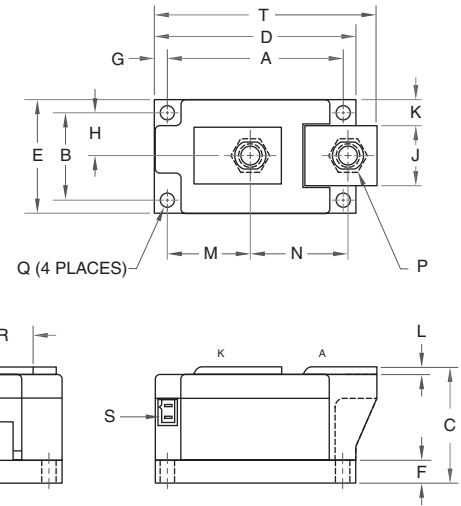
\*CS61 TERMINAL 3 IS NOT PRESENT

Dim.	Inches	Millimeters
A	3.70	94.0
B	1.34	34.0
C	1.18	30.0
D	3.15	80.0
E	0.67	17.0
F	0.91	23.0
G	0.51	13.0
H	0.35	8.3

Dim.	Inches	Millimeters
J	M6 Metric	M6
K	0.26	6.4
M	0.02	5.0*
N	0.28	6.0*
P	1.06	27.0*
Q	1.14	29.0*
R	0.03	0.8*
S	0.11	2.8*

\*Does not apply to CD61--16B, and CS61--16B.

# 3 LS41, LS43, LS81, LS83



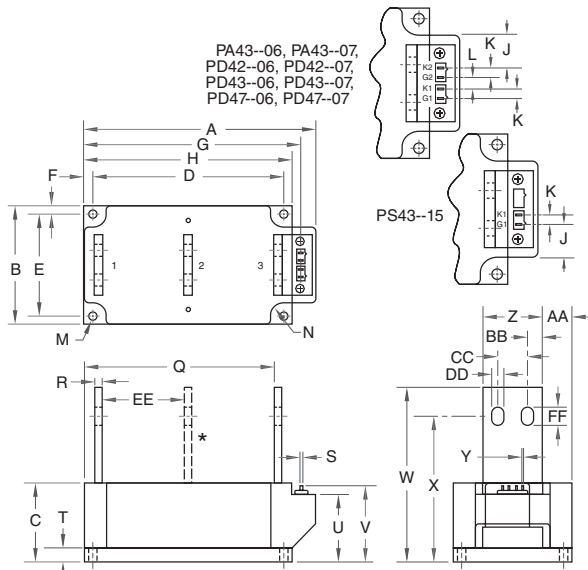
Dim.	Inches	Millimeters
A	3.15	80.0
B	1.50	38.0
C	2.05	52.1
D	3.62	92.0
E	1.97	50.0
F	0.39	9.9
G	0.24	6.1
H	0.75	19.0
J	0.99	25.1

Dim.	Inches	Millimeters
K	0.48	12.2
L	0.12	3.1
M	1.45	36.8
N	1.76	44.77
P	M10 Metric	M10
Q	9.25 Dia.	6.35 Dia.
S	0.110 x 0.032	2.5 x 0.8*
T	3.99	101.3

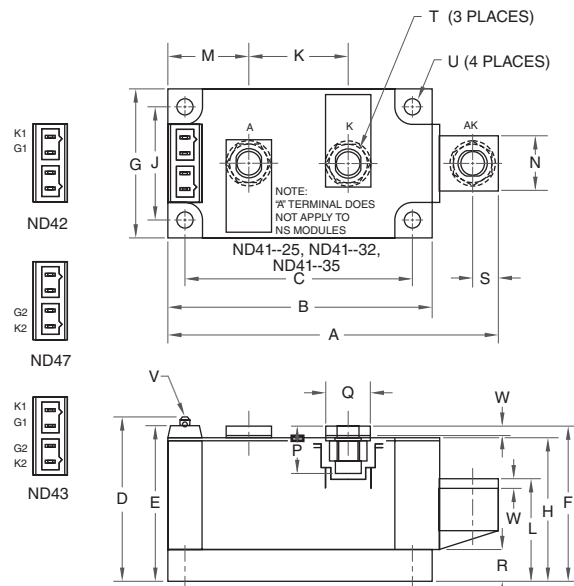
\*Does not apply to LS41--60.



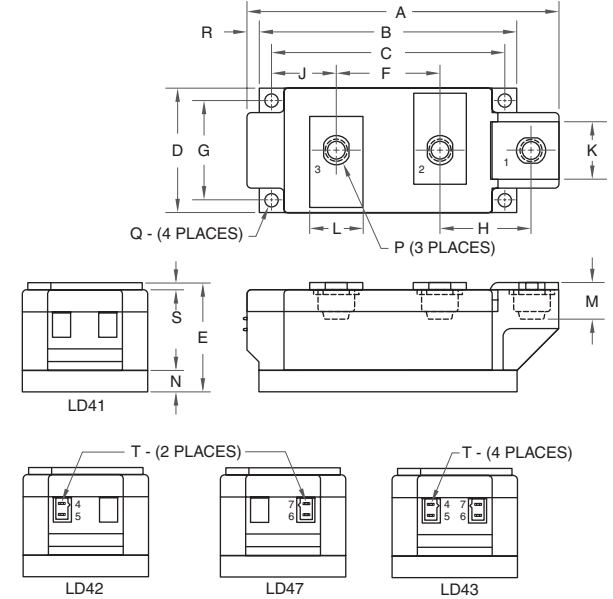
**4** PA43, PD41, PD42, PD43, PD47, PS41, PS415014, PS43



**5** ND41, ND42, ND43, ND47, NS41



**6** LD41, LD42, LD43, LD47, LD81, LD82, LD83



Dim.	Inches	Millimeters
A	7.80	198.1
B	4.0	101.6
C	2.68	68.1
D	6.44	163.6
E	3.44	87.4
F	0.28	7.1
G	7.31	185.7
H	7.0	177.8
J	1.65	42.0*
K	0.21	5.3*
L	0.28	7.1*
M	0.281	7.1
N	0.45	11.4
P	0.54	13.7
Q	5.93	150.6

Dim.	Inches	Millimeters
R	0.19	4.8
S	0.11	2.8*
T	0.48	12.2
U	2.28	58.0
V	2.54	64.5
W	4.93	125.2
X	3.81	96.8
Y	0.03	0.8*
Z	2.0	50.8
AA	1.0	25.4
BB	0.5	12.7
CC	1.0	25.4
DD	0.406	10.3
EE	2.87	72.9*
FF	0.66	16.8

Dim.	Inches	Millimeters
A	4.57	116.0
B	3.66	93.0
C	3.15	80.0
D	2.17	55.1
E	2.06	52.3
F	2.07	52.0
G	1.97	50.0
H	1.90	48.3
J	1.50	38.1
K	1.36	35.0
L	1.26	32.0

Dim.	Inches	Millimeters
M	1.122	28.5
N	0.71	18.0
P	0.57	14.5
Q	0.625	15.9
R	0.394	10.0
S	0.35	8.9
T	M8 Metric	M8
U	0.25 Dia.	6.35 Dia.
V	0.110 x 0.032	2.8 x 0.8*
W	0.12	3.0

\*Does not apply to ND41--26, ND41--32, and ND41--35.

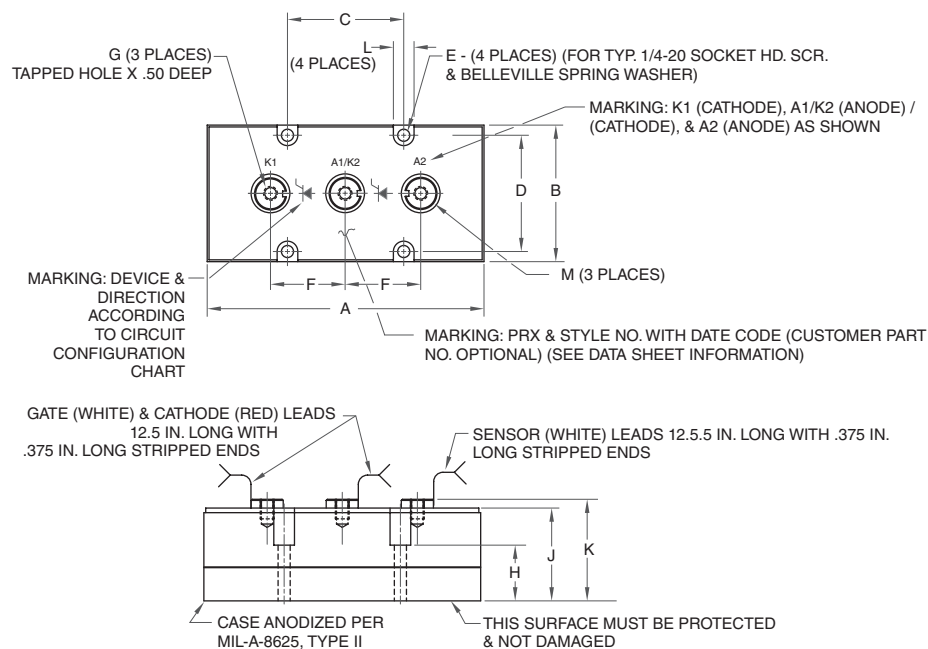
Dim.	Inches	Millimeters
A	5.91	150.0
B	4.88	124.0
C	4.41	112.0
D	2.36	60.0
E	2.05	52.0
F	1.97	50.0
G	1.89	48.0
H	1.73	44.0
J	1.22	31.0

Dim.	Inches	Millimeters
K	1.10	28.0
L	1.00	25.4
M	0.69	17.5
N	0.39	10.0
P	M10 Metric	M10
Q	0.26 Dia.	6.5 Dia.
R	0.24	6.0
S	0.12	3.0
T	0.110 x 0.32	2.5 x 0.8*

\*Does not apply to LD41--60.

\*Does not apply to PD41--11, PS41--25.

## 7 P1Z7, P1Z8, P1Z9, P1ZA, P2Z7, P2Z9, P2ZA, P3Z7, P3Z8, P3Z9, P3ZA, P7Z7, P7Z9, P7ZA



### ZAA Modules

Dim.	Inches	Millimeters
A	8.5	215.9
B	4.33	109.98
C	3.15	80.01
D	3.78	96.01
E	0.328 Dia.	8.33 Dia.
F	2.34±0.03	59.4±0.8
G	7/16-14 UNC-2B	
H	2.14	54.36
J	3.15	80.01
K	3.38	85.85
L	0.56	14.22
M	1.12	28.45

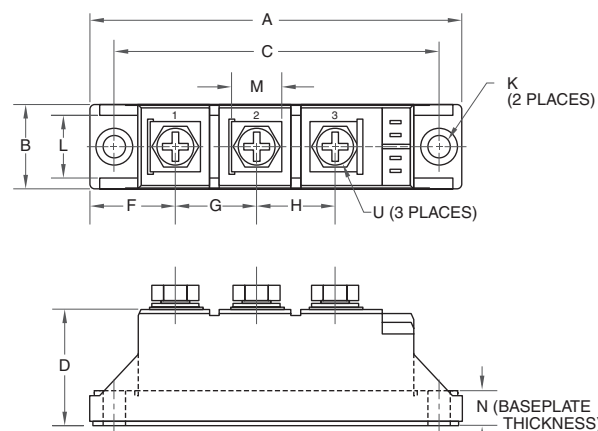
### Z7A / Z8A Modules

Dim.	Inches	Millimeters
A	6.30	153.16
B	3.03	76.96
C	3.15	80.01
D	2.47	62.73
E	0.328 Dia.	8.33 Dia.
F	1.83±0.03	46.48±0.8
G	5/16-18 UNC-2B	
H	1.27	32.25
J	2.09	53.08
K	2.25	57.15
L	0.58	14.22

### Z9A Modules

Dim.	Inches	Millimeters
A	7.50	190.5
B	3.70	93.98
C	3.15	80.01
D	3.15	80.01
E	0.328 Dia.	8.33 Dia.
F	2.03±0.03	51.56±0.8
G	3/8-16 UNC-2B	
H	1.51	38.35
J	2.52	64.0
K	2.75	69.85
L	0.56	14.22

## 8 CD41--99C, CD41--99D, CD411699D



Dim.	Inches	Millimeters	Dim.	Inches	Millimeters
A	3.62	92.0	H	0.79	20.0
B	0.83	21.0	K	0.24 Dia.	6.2 Dia.
C	3.15	80.0	L	0.63	16.0
D	1.18	30.0	M	0.51	13.0
F	0.83	21.0	U	M5 Metric	M5
G	0.79	20.0			

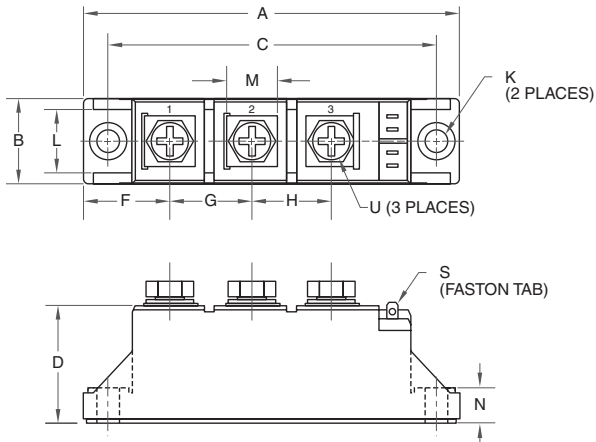
### CD41--99C

Dim.	Inches	Millimeters
N	0.33	8.5

### CD41--99D

Dim.	Inches	Millimeters
N	0.24	6.1

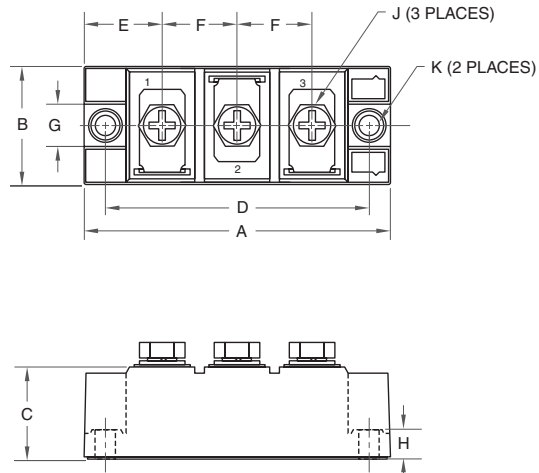
**9** CD43--90C, CD43--99C



Dim.	Inches	Millimeters
A	3.62	92.0
B	0.83	21.0
C	3.15	80.0
D	1.18	30.0
F	0.83	21.0
G	0.79	20.0
H	0.79	20.0

Dim.	Inches	Millimeters
K	0.24	6.2
L	0.63	16.0
M	0.51	13.0
N	0.33	8.5
S	0.11 x 0.02	2.8 x 0.5
U	M5 Metric	M5

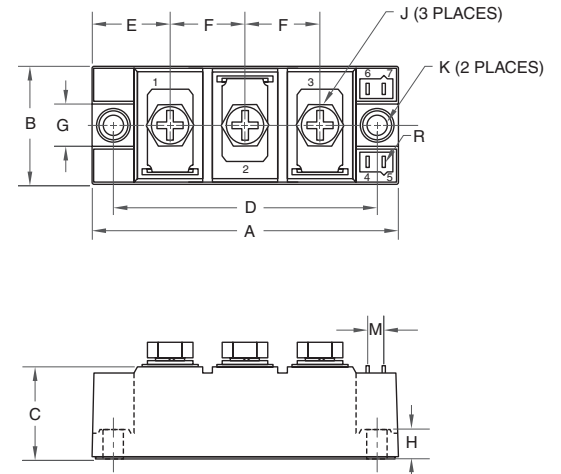
**10** CD61--16C, CD61--20C, CS61--16C



Dim.	Inches	Millimeters
A	3.70	94.0
B	1.34	34.0
C	1.15	29.2
D	3.15	80.0
E	0.94	24.0

Dim.	Inches	Millimeters
F	0.91	23.0
G	0.51	13.0
H	0.35	9.0
J	M6 Metric	M6
K	0.24 Dia.	6.2 Dia.

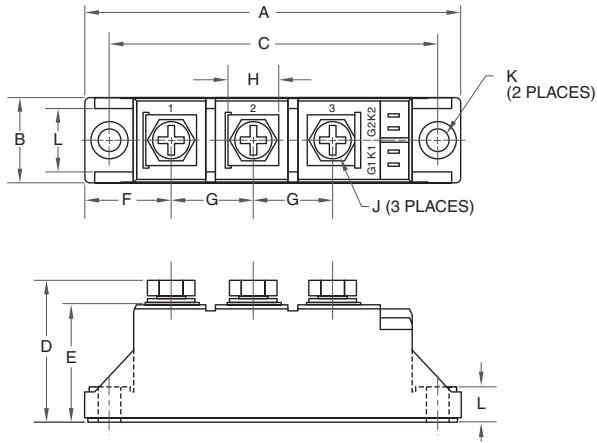
**11** CD63--15C



Dim.	Inches	Millimeters
A	3.70	94.0
B	1.34	34.0
C	1.15	29.2
D	3.15	80.0
E	0.94	24.0
F	0.91	23.0

Dim.	Inches	Millimeters
G	0.51	13.0
H	0.35	9.0
J	M6 Metric	M6
K	0.24 Dia.	6.2 Dia.
M	0.19	4.9
R	0.03 x 0.11	2.8 x 0.8

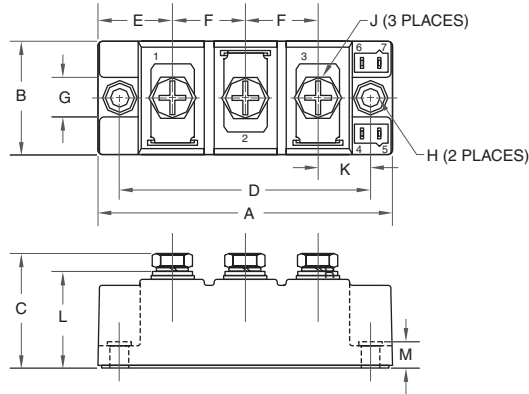
## 12 CD42--90C, CD47--90C



Dim.	Inches	Millimeters
A	3.62	92.0
B	0.83	21.0
C	3.15	80.0
D	1.38	35.0
E	1.18	30.0

Dim.	Inches	Millimeters
F	0.83	21.0
G	0.79	20.0
H	0.51	13.0
J	M5 Metric	M5
K	0.24 Dia.	6.2 Dia.

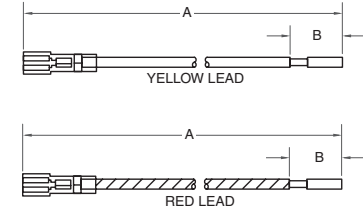
## 13 CD62--15C, CD67--15C



Dim.	Inches	Millimeters
A	3.70	94.0
B	1.34	34.0
C	1.42	36.0
D	3.15	80.0
E	0.94	24.0
F	0.91	23.0

Dim.	Inches	Millimeters
G	0.51	13.0
H	0.24 Dia.	6.2 Dia.
J	M6 Metric	M6
K	0.67	17.0
L	1.15	29.2
M	0.35	9.0

## 14 Lead Kits MR, MQ



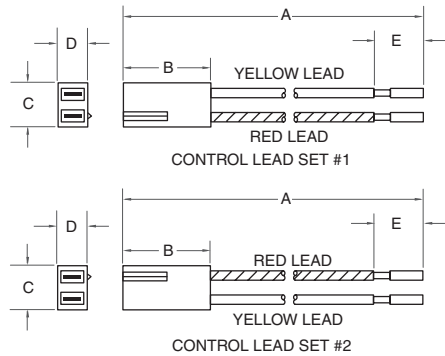
1. WIRE COMPOSITION:  
AWG 22, TINNED COPPER STRAND WIRE WITH ETEF INSULATION RATED TO 125°C
2. LEAD COLOR:  
RED (CATHODE) AND YELLOW (GATE), BOTH WITH INSULATED TERMINALS
3. RECEPTACLES:  
FEMALE TERMINAL WITH NYLON INSULATOR THAT FITS .11 x .03 IN. BLADES

MQ KIT: TWO RED & TWO YELLOW LEADS / MODULE

MR KIT: ONE RED & ONE YELLOW LEAD / MODULE

Dim.	Inches	Millimeters
A	0.46	11.80
B	0.01	0.26

# 15 Lead Kits NK, NL, NM



1. WIRE COMPOSITION:  
AWG 22, TINNED COPPER STRAND WIRE WITH ETEF INSULATION RATED TO 125°C
2. LEAD COLOR:  
RED (CATHODE) AND YELLOW (GATE). RED LEAD IS POSITIONED NEXT TO KEY ON BLACK POLARIZED HOUSING.
3. RECEPTACLES:  
FEMALE TERMINAL WITH LOCKING TAB FITS .11 x .03 IN. BLADES

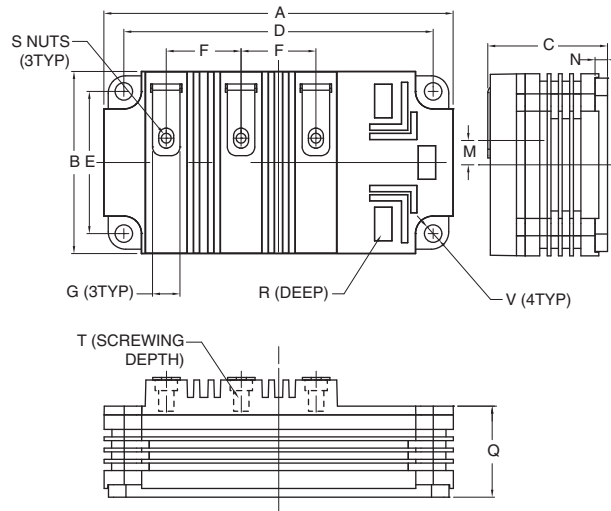
NK KIT: LEAD SET 1 & LEAD SET 2 - ONE EACH / MODULE

NL KIT: LEAD SET 1 - ONE / MODULE

NM KIT: LEAD SET 2 - ONE / MODULE

Dim.	Inches	Millimeters	Dim.	Inches	Millimeters
A	0.54	13.80	D	0.009	0.23
B	0.03	0.79	E	0.01	0.26
C	0.015	0.39			

# 16 QRD4518001, QRD6516001



Dim.	Inches	Millimeters	Dim.	Inches	Millimeters
A	5.51	140.0	M	0.38	9.75
B	2.87	73.0	N	0.20	5.0
C	1.89	48.0	Q	1.44	36.5
D	4.88±0.01	124.0±0.25	R	0.16	4.0
E	2.24±0.01	57.0±0.25	S	M6 Metric	M6
F	1.18	30.0	T	0.63 Min.	16.0 Min.
G	0.43	11.0	V	0.28 Dia.	7.0 Dia.

# FAST RECOVERY DIODE MODULES

## Fast Recovery Modules

### Applications Include:

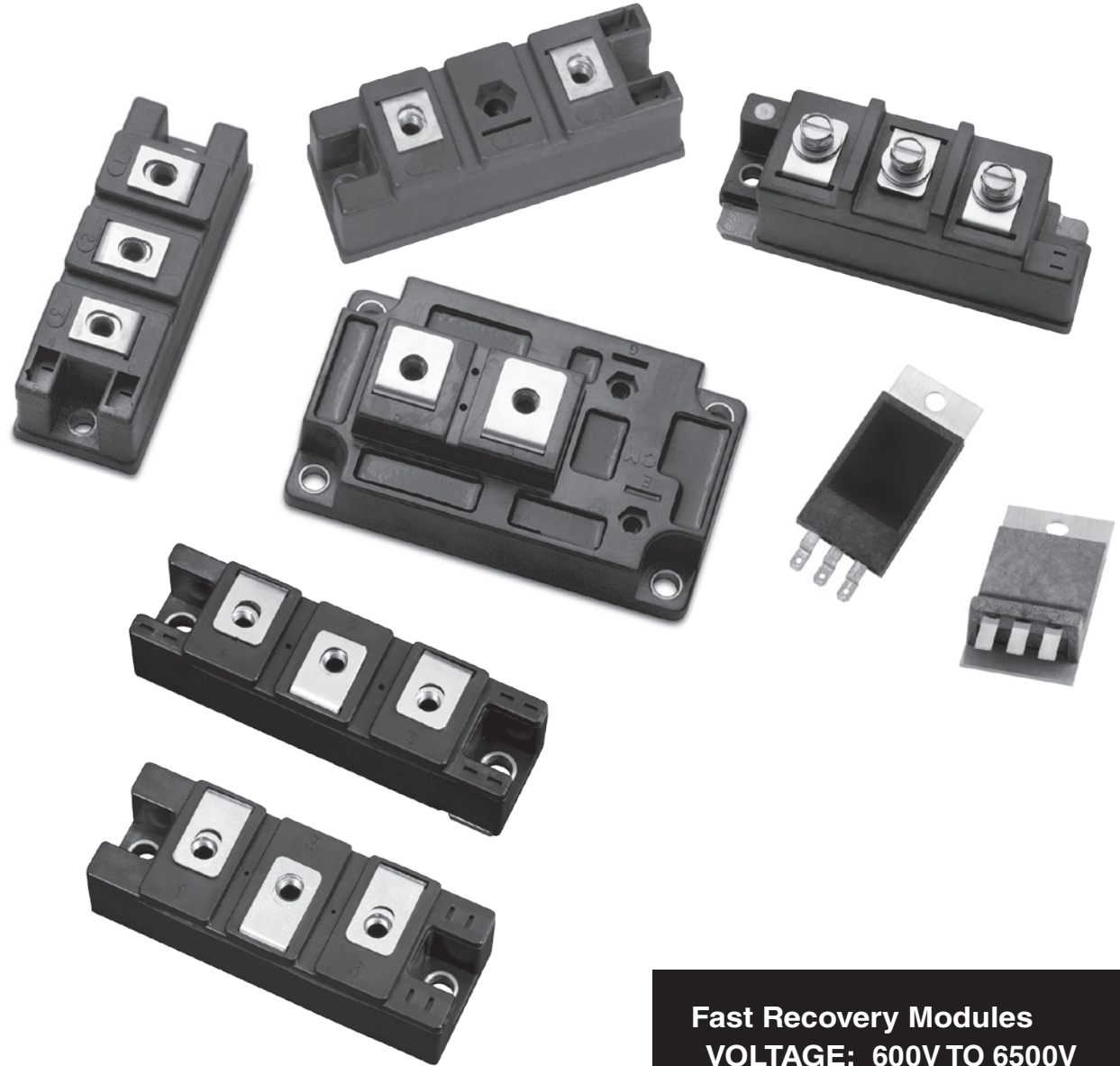
- Motor Controls
- Power Supplies
- Switching Power Supplies
- Transportation
- Welding

### Circuit Configurations:

- Single
- Dual
- Common Anode
- Common Cathode

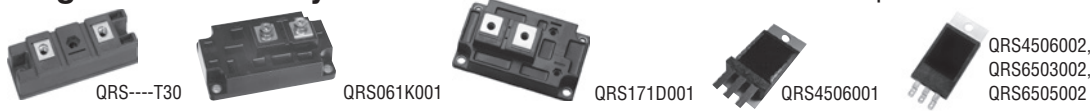
## TABLE OF CONTENTS

Numbering System .....	I-2
Single Fast Recovery Diodes .....	I-2
Dual Fast Recovery Diodes .....	I-4
Common Anode Fast Recovery Diodes .....	I-6
Common Cathode Fast Recovery Diodes .....	I-6
Outline Drawings .....	I-7



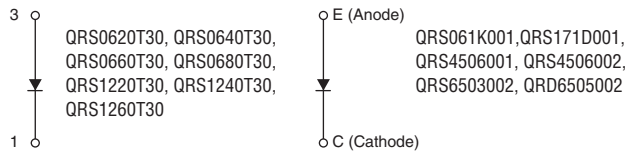
**Fast Recovery Modules**  
**VOLTAGE: 600V TO 6500V**  
**CURRENT: 33A TO 1800A**

## Single Fast Recovery Diodes (Refer to device datasheets at www.pwr.com for test conditions.)



Type	V <sub>RRM</sub> Volts (V <sub>RSM</sub> = V <sub>RRM</sub> + 100V)	I <sub>F(av)</sub> /T <sub>C</sub> Amperes/°C (180° sin)	NORTH AMERICAN		V <sub>FM</sub> /I <sub>FM</sub> Volts/Amperes (T <sub>J</sub> = 25°C)	t <sub>rr</sub>			R <sub>th(j-c)</sub> °C/W	R <sub>th(c-s)</sub> °C/W	T <sub>J(max)</sub> °C	Weight	Outline Drawings	
			I <sub>FSM</sub> Amperes (8.3ms, T <sub>J(max)</sub> , 100% V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (8.3ms, T <sub>J(max)</sub> , 100% V <sub>RRM</sub> Reapplied)		t <sub>rr</sub> ns	at I <sub>F</sub> Amperes	di/dt Amperes/μs					Number	Page
<b>Single Fast Diodes</b>														
QRS0620T30	600	66 / 80	1670	11,620	2.8 / 200	110	200	-400	0.35	0.04	150	220	5	I-8
QRS0640T30	600	128 / 80	2400	24,000	2.8 / 400	110	400	-800	0.18	0.04	150	220	5	I-8
QRS0660T30	600	194 / 80	3600	54,000	2.8 / 600	110	600	-1200	0.12	0.04	150	220	5	I-8
QRS0680T30	600	267 / 80	4800	96,000	2.8 / 800	110	800	-1600	0.09	0.04	150	220	5	I-8
QRS061K001	600	420 / 80	8350	290,000	2.8 / 1000	150	1000	-2000	0.07	0.04	150	400	10	I-10
QRS1220T30	1200	88 / 80	1670	11,620	3.5 / 200	250	200	-400	0.18	0.04	150	220	5	I-8
QRS1240T30	1200	180 / 80	3350	46,760	3.5 / 400	250	400	-800	0.09	0.04	150	220	5	I-8
QRS1260T30	1200	276 / 80	5000	104,100	3.5 / 600	250	600	-1200	0.06	0.04	150	220	5	I-8
QRS171D001	1700	700 / 80	2400	24,000	2.5 / 700	2000	1200	-2400	0.04	0.04	150	400	14	I-11
QRS4506001	4500	60 / 100	120	1900	5.6 / 60	230	67	-800	0.15	0.10	150	21	16	I-12
QRS4506002	4500	60 / 100	120	1900	5.6 / 60	230	67	-800	0.15	0.10	150	20	17	I-12
QRS6503002	6500	33 / 100	TBD	TBD	4.0 / 33	1000	33	-110	0.15	0.10	150	20	17	I-12
QRS6505002	6500	50 / 100	TBD	TBD	3.2 / 50	1700	50	-230	0.14	0.10	150	20	17	I-12

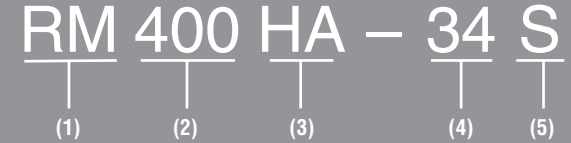
### Single Fast Diodes



## Numbering System

### FAST RECOVERY DIODE MODULES

RM400HA-34S is a 400A, 1700V Single Switch Fast Recovery Diode Module



- (1) Type Number: RM = Rectifier Module
- (2) Current Rating
- (3) Package Style: DB = Dual, Standard Package; DG = Dual, High Isolation; DY = Dual Switch; HA = Single Switch; HC = Single, AISiC Baseplate; HE = Single, Small Package
- (4) Voltage Rating (x 50): 12 = 600V; 24 = 1200V; 34 = 1700V; 66 = 3300V; 90 = 4500V; 130 = 6500V
- (5) Factory Designation

QRD0640R30 is a 600V, 400A Dual Switch RoHS Compliant Fast Recovery Module



- (1) Product Line
- (2) Type Number: R = Rectifier
- (3) Package Style: S = Single Switch; D = Dual Switch; C = Common Cathode; F = Common Anode; J = Inverse Configuration
- (4) Voltage Rating (x 100)
- (5) Current (x 10)
- (6) Serial Designation: R30 = 30mm Terminal Height, RoHS Compliant; T30 = 30mm Terminal Height, Not RoHS Compliant; 001 = Special Designation

# Single Fast Recovery Diodes (Refer to device datasheets at [www.pwr.x.com](http://www.pwr.x.com) for test conditions.)

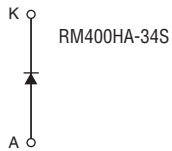


RM400HA-34S

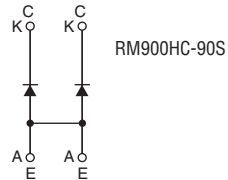
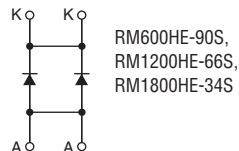
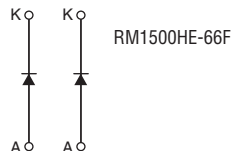
Type	V <sub>RRM</sub> Volts (V <sub>RSM</sub> = V <sub>RRM</sub> + 100V)	I <sub>F(av)</sub> /T <sub>c</sub> Amperes/°C (180° sin)	EUROPEAN		NORTH AMERICAN		V <sub>FM</sub> /I <sub>FM</sub> Volts/Amperes (25°C)	R <sub>th(j-c)</sub> °C/W	R <sub>th(c-s)</sub> °C/W	T <sub>j(max)</sub> °C	T <sub>rr</sub> 150°C ns	T <sub>rr</sub> 25°C ns	Outline Drawings		
			I <sub>FSM</sub> Amperes (10ms, T <sub>j(max)</sub> , No V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (10ms, T <sub>j(max)</sub> , No V <sub>RRM</sub> Reapplied)	I <sub>FSM</sub> Amperes (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)							Number	Page	
<b>Single Fast Diode</b>															
RM400HA-34S	1700	400 / 90	—	—	8000	260,000	2.5 / 400	0.08	0.04	150	500	—	2	I-7	

Type	V <sub>RRM</sub> Volts (V <sub>RSM</sub> = V <sub>RRM</sub> + 100V)	I <sub>F(av)</sub> Amperes (180° sin)	NORTH AMERICAN		V <sub>FM</sub> /I <sub>FM</sub> Volts/Amperes (25°C)	R <sub>th(j-c)</sub> °C/W	R <sub>th(c-s)</sub> °C/W	T <sub>j(max)</sub> °C	T <sub>rr</sub> 150°C ns	T <sub>rr</sub> 25°C ns	Outline Drawings			
			I <sub>FSM</sub> Amperes (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)							Number	Page		
<b>Single High Voltage Fast Diodes</b>														
RM1800HE-34S	1700	1800	9600	384,000	2.9 / 1800	0.022	0.017	150	1800	—	3	I-7		
RM1200HE-66S	3300	1200	9600	384,000	3.2 / 1200	0.02	0.015	150	1400 (at 125°C)	—	3	I-7		
RM1500HE-66F	3300	1500	12000	598,000	2.6 / 1500	0.0145	0.015	150	900	—	18	I-12		
RM600HE-90S	4500	600	4800	95,600	4.8 / 600	0.039	0.015	150	900 (at 125°C)	—	3	I-7		
RM900HC-90S	4500	900	7200	216,000	4.8 / 900	0.021	0.016	150	1000 (at 125°C)	—	4	I-8		

## Single Fast Diodes



## Single High Voltage Fast Diodes





## Dual Fast Recovery Diodes (Refer to device datasheets at [www.pwr.com](http://www.pwr.com) for test conditions.)



RM400DY-24S



QRD0620R30,  
QRD1220R30



QRD0630R30,  
QRD0640R30,  
QRD1230R30,  
QRD1240R30



QRD3310001,  
QRD3310002,  
QRD3310003,  
QRD3310005



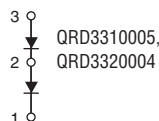
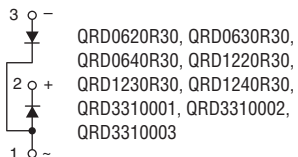
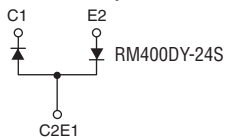
QRD3320004

Type	V <sub>RRM</sub> Volts (V <sub>RSM</sub> = V <sub>RRM</sub> + 100V)	I <sub>F(av)</sub> /T <sub>c</sub> Amperes/°C (180° sin)	EUROPEAN		NORTH AMERICAN		V <sub>FM</sub> /I <sub>FM</sub> Volts/Amperes (25°C)	R <sub>th(j-c)</sub> °C/W	R <sub>th(c-s)</sub> °C/W	T <sub>j(max)</sub> °C	T <sub>rr</sub> 150°C ns	T <sub>rr</sub> 25°C ns	Outline Drawings Number Page
			I <sub>FSM</sub> Amperes (10ms, T <sub>j(max)</sub> , No V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (10ms, T <sub>j(max)</sub> , No V <sub>RRM</sub> Reapplied)	I <sub>FSM</sub> Amperes (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)							
<b>Dual Fast Recovery Diodes</b>													
RM400DY-24S	1200	400	—	—	2000	16,600	2.6 / 400	—	0.018	150	290 (@125°C)	250	12 I-10
<b>Dual High Voltage Fast Recovery Diodes</b>													
RM1200DB-34S	1700	1200	—	42,700	—	180,300	2.1 / 1200	0.02	0.024	150	850 (@125°C)	—	13 I-11
RM400DY-66S	3300	400	3200	96,000	—	42,700	4.29 / 400	0.072	0.036	150	—	1200	6 I-8
RM600DY-66S	3300	600	4800	—	6400	96,000	4.55 / 600	0.048	0.024 Typ.	150	—	1200	6 I-8
RM1000DC-66F	3300	1000	—	—	20,800	440	2.2 / 1000	0.024	—	150	850	550	11 I-10
RM1200DB-66S	3300	1200	—	—	9600	384,000	2.8 / 1200	0.018	0.016	150	—	750	4 I-8
RM1500DC-66F	3300	1500	—	—	14,000	980,000	2.2 / 3000	0.016	0.0175	150	850	550	11 I-10
RM900DB-90S	4500	900	—	—	9.4	170,000	4.0 / 900	0.02	0.016	150	—	900	4 I-8

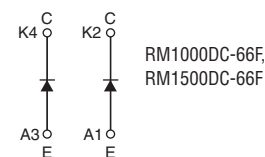
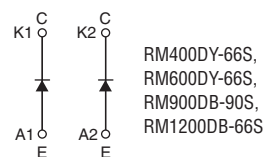
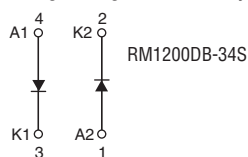
Type	V <sub>RRM</sub> Volts (V <sub>RSM</sub> = V <sub>RRM</sub> + 100V)	I <sub>dc</sub> /T <sub>c</sub> Amperes/°C (180° sin)	NORTH AMERICAN		V <sub>FM</sub> /I <sub>FM</sub> Volts/Amperes (T <sub>j</sub> = 25°C)	t <sub>rr</sub>			R <sub>th(j-c)</sub> °C/W	R <sub>th(c-s)</sub> °C/W	T <sub>j(max)</sub> °C	Weight	Outline Drawings Number Page
			I <sub>FSM</sub> Amperes (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)		t <sub>rr</sub> ns	at I <sub>f</sub> Amperes	di/dt Amperes/μs					
<b>Dual Fast Recovery Diodes</b>													
QRD0620R30	600	140 / 80	TBD	TBD	2.3 / 150	120	100	TBD	0.205	0.2	150	150	1 I-7
QRD0630R30	600	210 / 80	TBD	TBD	2.2 / 150	120	150	TBD	0.137	0.2	150	180	8 I-9
QRD0640R30	600	280 / 80	TBD	TBD	2.2 / 200	120	200	TBD	0.103	0.2	150	180	8 I-9
QRD1220R30	1200	140 / 80	1700	12,000	3.2 / 100	150	100	TBD	0.15	0.2	150	150	1 I-7
QRD1230R30	1200	210 / 80	2550	27,000	3.2 / 150	150	150	TBD	0.1	0.2	150	180	8 I-9
QRD1240R30	1200	280 / 80	3400	48,000	3.2 / 200	150	200	TBD	0.075	0.2	150	180	8 I-9
QRD3310001	3300	86 / 80	TBD	TBD	4.3 / 100	1200	100	-200	0.12	0.05	150	250	9 I-9
QRD3310002	3300	60 / 80	TBD	TBD	4.3 / 100	1200	100	-200	0.2	0.05	150	250	9 I-9
QRD3310003*	3300	86 / 80	TBD	TBD	4.3 / 100	1200	100	-200	0.12	0.005	150	250	9 I-9
QRD3310005	3300	86 / 80	TBD	TBD	4.3 / 100	1200	100	-200	0.12	0.05	150	250	9 I-9
QRD3320004	3300	260 / 80	1900	TBD	3.0 / 200	500	165	TBD	0.096	0.018	150	800	15 I-11

\*RoHS Compliant

### Dual Fast Recovery Diodes



### Dual High Voltage Fast Recovery Diodes



## Dual Fast Recovery Diodes (Refer to device datasheets at [www.pwr.com](http://www.pwr.com) for test conditions.)



QRJ0620R30,  
QRJ1220R30

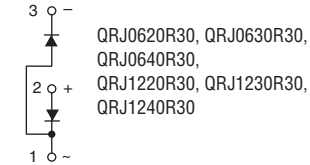


QRJ0630R30,  
QRJ0640R30,  
QRJ1230R30,  
QRJ1240R30

Type	V <sub>RRM</sub> Volts (V <sub>RRM</sub> = V <sub>RRM</sub> + 100V)	I <sub>DC</sub> /T <sub>C</sub> Amperes/°C (180° sin)	NORTH AMERICAN		V <sub>F</sub> M/I <sub>F</sub> M Volts/Amperes (T <sub>J</sub> = 25°C)	t <sub>rr</sub>			R <sub>th(j-c)</sub> °C/W	R <sub>th(c-s)</sub> °C/W	T <sub>j(max)</sub> °C	Weight	Outline Drawings	
			I <sub>FSM</sub> Amperes (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)		t <sub>rr</sub> ns	at I <sub>F</sub> Amperes	di/dt Amperes/μs					Number	Page
QRJ0620R30	600	140 / 80	TBD	TBD	2.3 / 150	120	100	TBD	0.205	0.2	150	150	1	I-7
QRJ0630R30	600	210 / 80	TBD	TBD	2.2 / 150	120	150	TBD	0.137	0.2	150	180	8	I-9
QRJ0640R30	600	280 / 80	TBD	TBD	2.2 / 200	120	200	TBD	0.103	0.2	150	180	8	I-9
QRJ1220R30	1200	140 / 80	1700	12,000	3.2 / 100	150	100	TBD	0.15	0.2	150	150	1	I-7
QRJ1230R30	1200	210 / 80	2550	27,000	3.2 / 150	150	150	TBD	0.1	0.2	150	180	8	I-9
QRJ1240R30	1200	280 / 80	3400	48,000	3.2 / 200	150	200	TBD	0.075	0.2	150	180	8	I-9

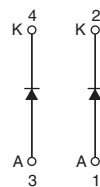
Type	V <sub>RRM</sub> Volts (V <sub>RRM</sub> = V <sub>RRM</sub> + 100V)	I <sub>F(av)</sub> Amperes (180° sin)	NORTH AMERICAN		V <sub>F</sub> M/I <sub>F</sub> M Volts/Amperes (25°C)	R <sub>th(j-c)</sub> °C/W	R <sub>th(c-s)</sub> °C/W	T <sub>j(max)</sub> °C	T <sub>rr</sub> 125°C ns	T <sub>rr</sub> 25°C ns	Outline Drawings	
			I <sub>FSM</sub> Amperes (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)							Number	Page
RM400DG-66S	3300	400	3200	42,700	2.8 / 400	0.054	0.048	150	1,000	—	7	I-9
RM1200DG-66S	3300	1200	9600	384,000	2.8 / 1200	0.018	0.016	150	1,000	—	7	I-9
RM300DG-90S	4500	300	2400	24,000	4.8 / 300	0.066	0.048	150	1,000	700	7	I-9
RM400DG-90F	4500	400	3400	58,000	2.55 / 400	0.0585	0.048	150	900	700	7	I-9
RM800DG-90F	4500	800	6500	211,000	2.55 / 800	0.030	0.024	150	900	700	7	I-9
RM1200DG-90F	4500	1200	9800	480,000	2.55 / 1200	0.020	0.016	150	900	700	7	I-9
RM200DG-130S	6500	200	1600	11,000	4.0 / 200	0.066	0.048	150	1,000	—	7	I-9
RM250DG-130F	6500	250	2350	28,000	3.3 / 500	0.075	0.048	150	600	500	7	I-9
RM600DG-130S	6500	600	4800	96,000	4.0 / 600	0.022	0.016	150	1,000	1,000	7	I-9

### Dual Fast Recovery Diodes - Inverse Configuration



QRJ0620R30, QRJ0630R30,  
QRJ0640R30,  
QRJ1220R30, QRJ1230R30,  
QRJ1240R30

### Dual High Isolation High Voltage Fast Recovery Diodes



RM200DG-130S, RM250DG-130F,  
RM300DG-90S, RM400DG-66S,  
RM400DG-90F, RM600DG-130S,  
RM800DG-90F, RM1200DG-66S,  
RM1200DG-90F

**Common Anode Fast Recovery Diodes** (Refer to device datasheets at [www.pwr.com](http://www.pwr.com) for test conditions.)



QRC0620R30, QRC1220R30,  
QRF0620R30, QRF1220R30



QRC0630R30, QRF0630R30,  
QRC0640R30, QRF0640R30,  
QRC1230R30, QRF1230R30,  
QRC1240R30, QRF1240R30



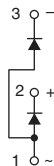
QRC3310001,  
QRC3310002

Type	V <sub>RRM</sub> Volts (V <sub>RSM</sub> = V <sub>RRM</sub> + 100V)	I <sub>DC</sub> /T <sub>C</sub> Amperes/°C (180° sin)	NORTH AMERICAN		V <sub>FM</sub> /I <sub>FM</sub> Volts/Amperes (T <sub>J</sub> = 25°C)	t <sub>rr</sub>			R <sub>th(j-c)</sub> °C/W	R <sub>th(c-s)</sub> °C/W	T <sub>j(max)</sub> °C	Weight	Outline Drawings	
			I <sub>FSM</sub> Amperes (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)		t <sub>rr</sub> ns	at I <sub>F</sub> Amperes	di/dt Amperes/μs					Number	Page
QRF0620R30	600	140 / 80	TBD	TBD	2.3 / 150	120	100	TBD	0.205	0.2	150	150	1	I-7
QRF0630R30	600	210 / 80	TBD	TBD	2.2 / 150	120	150	TBD	0.137	0.2	150	180	8	I-9
QRF0640R30	600	280 / 80	TBD	TBD	2.2 / 200	120	200	TBD	0.103	0.2	150	180	8	I-9
QRF1220R30	1200	140 / 80	1700	12,000	3.2 / 100	150	100	TBD	0.15	0.2	150	150	1	I-7
QRF1230R30	1200	210 / 80	2550	27,000	3.2 / 150	150	150	TBD	0.1	0.2	150	180	8	I-9
QRF1240R40	1200	280 / 80	3400	48,000	3.2 / 200	150	200	TBD	0.075	0.02	150	180	8	I-9

**Common Cathode Fast Recovery Diodes** (Refer to device datasheets at [www.pwr.com](http://www.pwr.com) for test conditions.)

Type	V <sub>RRM</sub> Volts (V <sub>RSM</sub> = V <sub>RRM</sub> + 100V)	I <sub>DC</sub> /T <sub>C</sub> Amperes/°C (180° sin)	NORTH AMERICAN		V <sub>FM</sub> /I <sub>FM</sub> Volts/Amperes (T <sub>J</sub> = 25°C)	t <sub>rr</sub>			R <sub>th(j-c)</sub> °C/W	R <sub>th(c-s)</sub> °C/W	T <sub>j(max)</sub> °C	Weight	Outline Drawings	
			I <sub>FSM</sub> Amperes (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)	i <sup>2</sup> t A <sup>2</sup> sec (8.3ms, T <sub>j(max)</sub> , 100% V <sub>RRM</sub> Reapplied)		t <sub>rr</sub> ns	at I <sub>F</sub> Amperes	di/dt Amperes/μs					Number	Page
QRC0620R30	600	140 / 80	TBD	TBD	2.3 / 150	120	100	TBD	0.205	0.2	150	150	1	I-7
QRC0630R30	600	210 / 80	TBD	TBD	2.2 / 150	120	150	TBD	0.137	0.2	150	180	8	I-9
QRC0640R30	600	280 / 80	TBD	TBD	2.2 / 200	120	200	TBD	0.103	0.2	150	180	8	I-9
QRC1220R30	1200	140 / 80	1700	12,000	3.2 / 100	150	100	TBD	0.15	0.2	150	150	1	I-7
QRC1230R30	1200	210 / 80	2550	27,000	3.2 / 150	150	150	TBD	0.1	0.2	150	180	8	I-9
QRC1240R30	1200	280 / 80	3400	48,000	3.2 / 200	150	200	TBD	0.075	0.2	150	180	8	I-9
QRC3310001	3300	86 / 80	TBD	TBD	4.3 / 100	1200	100	-200	0.12	0.05	150	250	9	I-9
QRC3310002	3300	86 / 80	TBD	TBD	4.3 / 100	1200	100	-200	0.2	0.05	150	250	9	I-9

**Common Anode Fast Recovery Diodes**



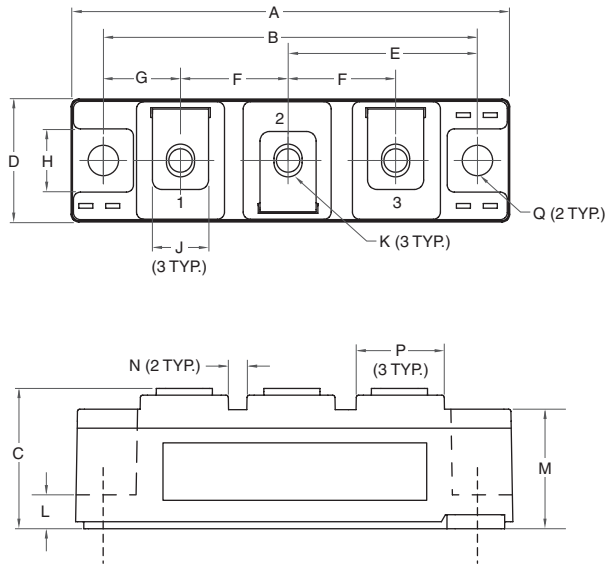
QRF0620R30, QRF0630R30,  
QRF0640R30,  
QRF1220R30, QRF1230R30,  
QRF1240R40

**Common Cathode Fast Recovery Diodes**



QRC0620R30, QRC0630R30,  
QRC0640R30,  
QRC1220R30, QRC1230R30,  
QRC1240R30  
QRC3310001, QRC3310002

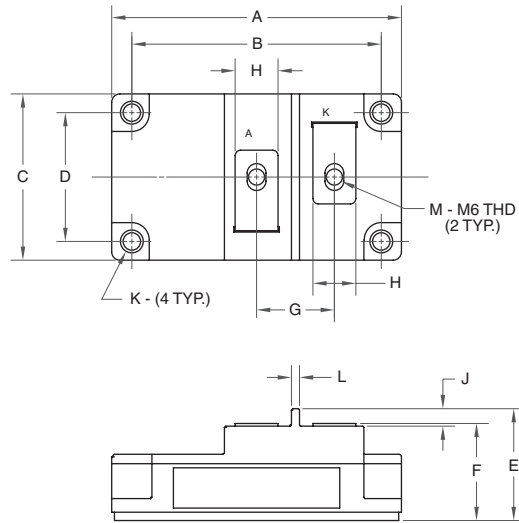
# 1 QR\_0620R30, QR\_1220R30



Dim.	Inches	Millimeters
A	3.68	93.5
B	3.150±0.01	80.0±0.25
C	1.18	30.0
D	1.02	26.0
E	1.59	40.5
F	0.90	23.0
G	0.65	16.5
H	0.51	13.0

Dim.	Inches	Millimeters
J	0.47	12.0
K	M5 Metric	M5
L	0.30	7.5
M	1.0	25.4
N	0.16	4.0
P	0.75	19.0
Q	0.256 Dia.	6.5 Dia.

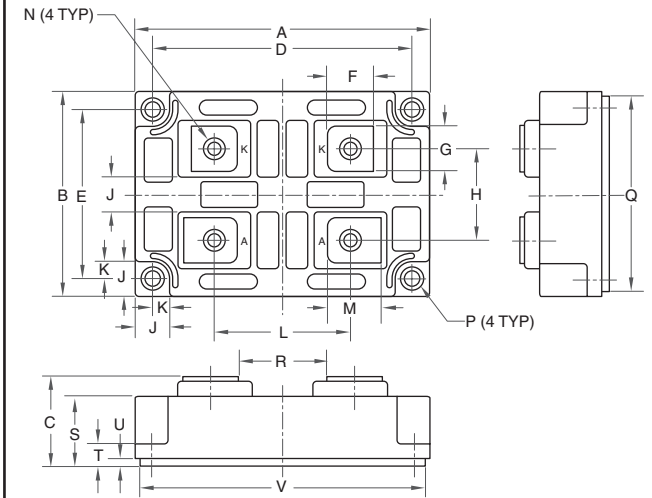
# 2 RM400HA-34S



Dim.	Inches	Millimeters
A	4.25 Max.	108.0 Max.
B	3.661±0.012	93.0±0.3
C	2.44 Max.	62.0 Max.
D	1.89±0.012	48.0±0.3
E	1.63 Max.	41.5 Max.
F	1.42 Max.	36.0 Max.

Dim.	Inches	Millimeters
G	1.14	29.0
H	0.63	16.0
J	0.26	6.5
K	0.256 Dia.	6.5 Dia.
L	0.12	3.0
M	M6 Metric	M6

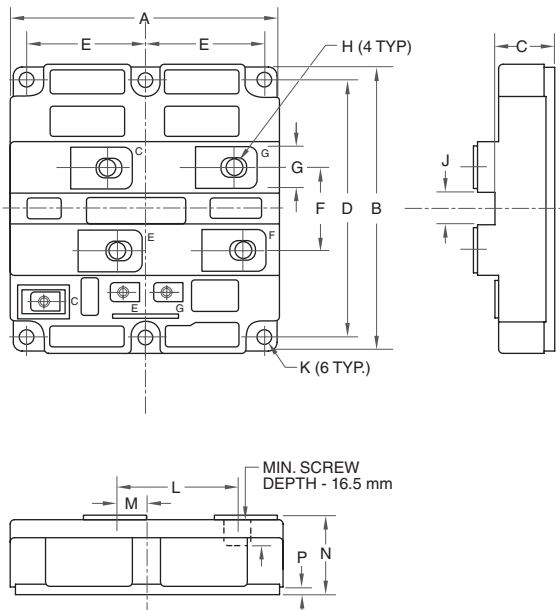
# 3 RM600HE-90S, RM1200HE-66S, RM1800HE-34S



Dim.	Inches	Millimeters
A	5.12+0.04/-0.0	130.0+1.0/-0.0
B	3.54±0.04	90.0±1.0
C	1.50+0.04/-0.0	38.0+1.0/-0.0
D	4.49±0.012	114.0±0.3
E	2.91±0.012	74.0±0.3
F	0.81	20.5
G	0.79	20.0
H	1.57±0.2	40.0±0.5
J	0.59	15.0
K	0.28	7.0

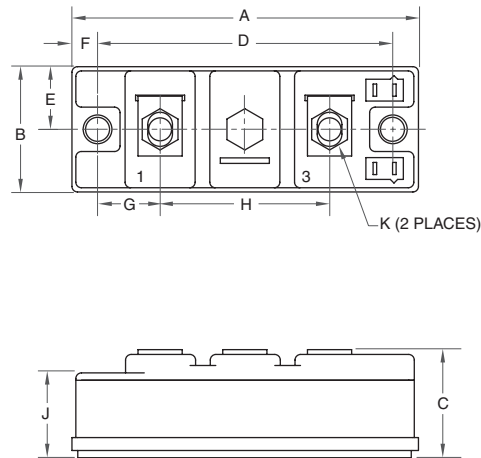
Dim.	Inches	Millimeters
L	2.4±0.2	61.5±0.5
M	0.94	24.0
N	M8 Metric	M8
P	0.26 Dia.	6.5 Dia.
Q	3.37	85.5
R	1.56	39.5
S	1.17	29.7
T	0.37	9.3
U	0.12	3.0
V	4.94	125.5

**4** RM900DB-90S, RM900HC-90S, RM1200DB-66S



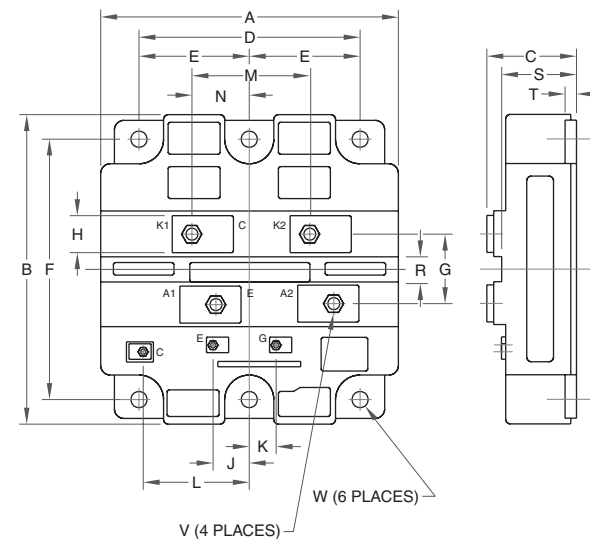
Dim.	Inches	Millimeters	Dim.	Inches	Millimeters
A	5.12	130.0	J	0.59	15.0
B	5.51	140.0	K	0.28 Dia.	7.0 Dia.
C	1.16	29.5	L	2.4	61.5
D	4.88±0.01	124.0±0.25	M	0.71	18.0
E	2.24±0.01	57.0±0.25	N	1.5+0.04/-0.0	38.0+1/0/-0.0
F	1.57	40.0	P	0.2	5.0
G	0.79	20.0			
H	M8 Metric	M8			

**5** QRS0620T30, QRS0640T30, QRS0660T30, QRS0680T30, QRS1220T30, QRS1240T30, QRS1260T30



Dim.	Inches	Millimeters	Dim.	Inches	Millimeters
A	3.70	94.0	F	0.28	6.99
B	1.34	34.0	G	0.67	17.1
C	1.18	30.0	H	1.81	46.0
D	3.15	80.0	J	0.91	23.0
E	0.67	17.0	K	M6 x 1.0 Metric	M6 x 1.0

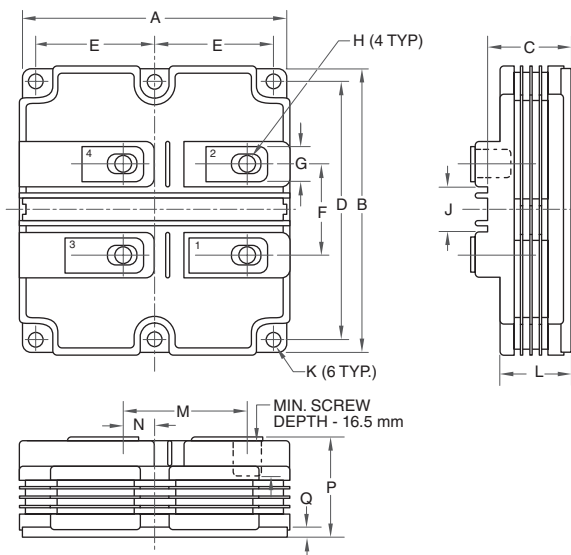
**6** RM400DY-66S, RM600DY-66S



Dim.	Inches	Millimeters	Dim.	Inches	Millimeters
A	5.12	130.0	M	2.42	61.5
B	5.51	140.0	N	0.71	18.0
C	1.50+0.8/-0.0	38.0+2.0/-0.0	R	0.59	15.0
D	4.49	114.0	S	1.18	30.0
E	2.24±0.01	57.0±0.25	T	0.20	5.0
F	4.88±0.01	124.0±0.25	V	M8 Metric	M8
G	1.58	40.0	W	0.28 Dia.	7.0 Dia.
H	0.79	20.0			

7

RM200DG-130S, RM250DG-130F, RM300DG-90S,  
RM400DG-66S, RM400DG-90F, RM600DG-130S,  
RM800DG-90F, RM1200DG-66S, RM1200DG-90F

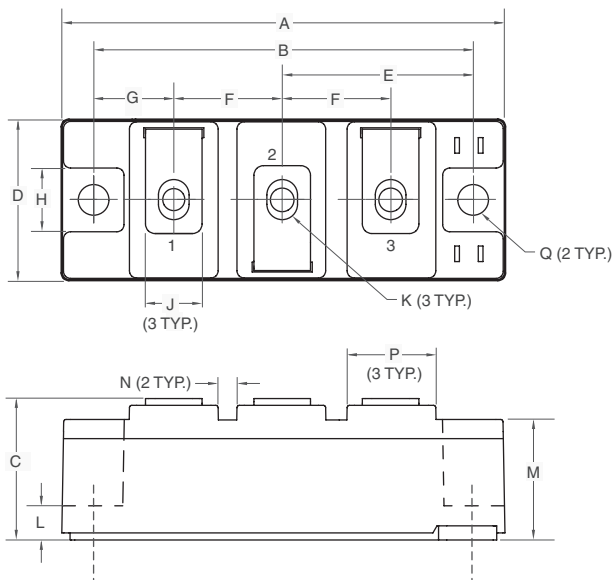


Dim.	Inches	Millimeters
A	5.12±0.2	130.0±0.5
B	5.51±0.2	140.0±0.5
C	1.59±0.2	40.4±0.5
D	4.88±0.01	124.0±0.25
E	2.24±0.01	57.0±0.25
F	1.73±0.2	44.0±0.5
G	0.67±0.004	17.0±0.1
H	M8 Metric	M8

Dim.	Inches	Millimeters
J	0.87±0.012	22.0±0.3
K	0.28 Dia.	7.0 Dia.
L	1.35±0.2	34.4±0.5
M	2.41±0.2	61.2±0.5
N	0.65±0.2	16.5±0.5
P	1.89+0.04/-0.0	48.0+1/0/-0.0
Q	0.2±0.006	5.0±0.15

8

QR\_0630R30, QR\_0640R30,  
QR\_1230R30, QR\_1240R30

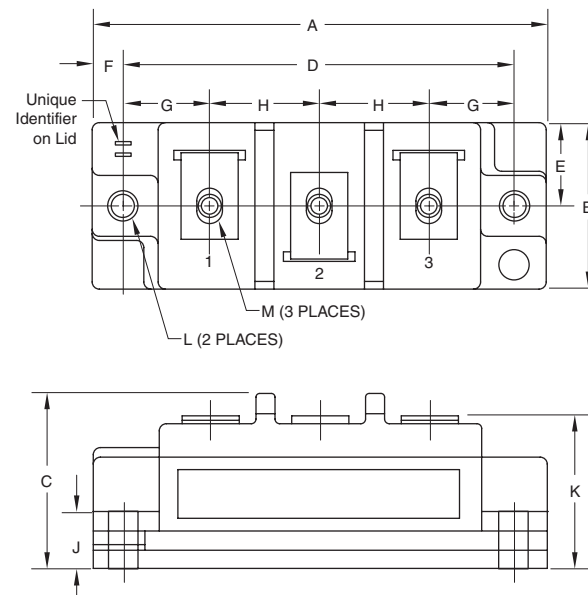


Dim.	Inches	Millimeters
A	3.70	94.0
B	3.150±0.01	80.0±0.25
C	1.18	30.0
D	1.34	34.0
E	1.57	40.0
F	0.90	23.0
G	0.67	17.0
H	0.51	13.0

Dim.	Inches	Millimeters
J	0.47	12.0
K	M6 Metric	M6
L	0.30	7.5
M	1.0	25.4
N	0.16	4.0
P	0.75	19.0
Q	0.256 Dia.	6.5 Dia.

9

QRC3310001, QRC3310002,  
QRD3310001, QRD3310002,  
QRD3310003, QRD3310005



Dim.	Inches	Millimeters
A	3.70	94.0
B	1.34	34.0
C	1.40	35.6
D	3.15	80.0
E	0.67	17.0
F	0.28	6.99

Dim.	Inches	Millimeters
G	0.67	17.1
H	0.91	23.0
J	0.36	9.0
K	1.18	30.0
L	0.216	5.5
M	#10-32	#10-32

DC-DC  
ConvertersGate Drivers  
& IPM  
InterfaceCustom  
ModulesIGBT  
Assemblies

Assemblies

Fast Recovery  
Diode ModulesThyristor &  
Diode  
ModulesDiscrete  
RectifiersDiscrete  
Thyristors

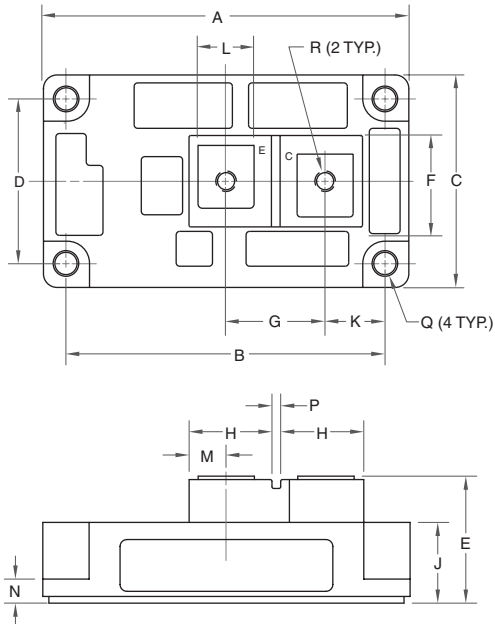
DIPIPM

IPMs

MOSFET  
ModulesHybrid  
& SiC  
Modules

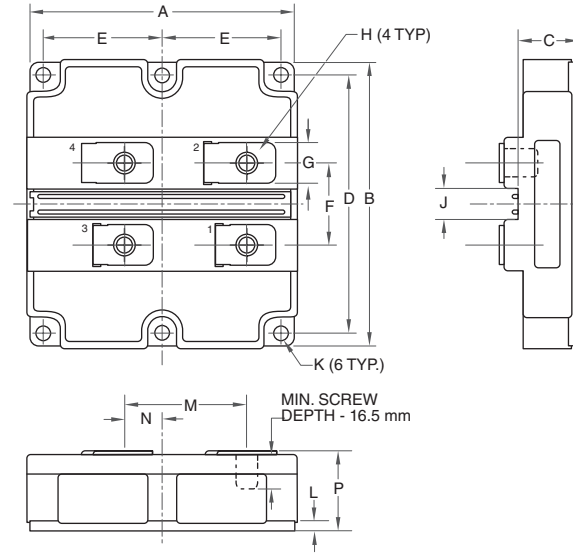
IGBTs

# 10 QRS061K001



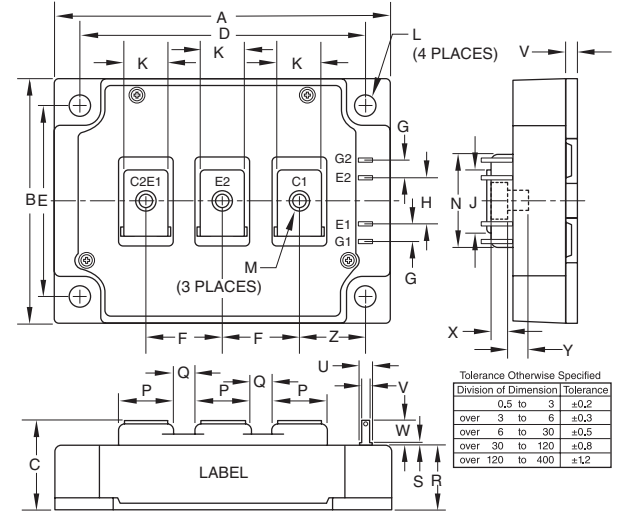
Dim.	Inches	Millimeters	Dim.	Inches	Millimeters
A	4.21	107.0	J	0.93	23.5
B	3.661±0.01	93.0±0.25	K	0.69	17.5
C	2.44	62.0	L	0.63	16.0
D	1.89±0.01	48.0±0.25	M	0.43	11.0
E	1.42 Max.	36.0 Max.	N	0.28	7.0
F	1.18	30.0	P	0.12	3.0
G	1.14	29.0	Q	0.26 Dia.	6.5 Dia.
H	0.94	24.0	R	M6 Metric	M6

# 11 RM1000DC-66F, RM1500DC-66F



Dim.	Inches	Millimeters	Dim.	Inches	Millimeters
A	5.12±0.02	130.0±0.5	H	M8 Metric	M8
B	5.51±0.02	140.0±0.5	J	0.59±0.012	15.0±0.3
C	1.16±0.02	29.5±0.5	K	0.28 Dia.	7.0 Dia.
D	4.88±0.009	124.0±0.25	L	0.2±0.008	5.0±0.2
E	2.24±0.009	57.0±0.25	M	2.42±0.012	61.5±0.3
F	1.57±0.012	40.0±0.3	N	0.71±0.012	18.0±0.3
G	0.79+0.039/-0.008	20.0+1.0/-0.2	P	1.5+0.04/-0.0	38.0+1.0/-0.0

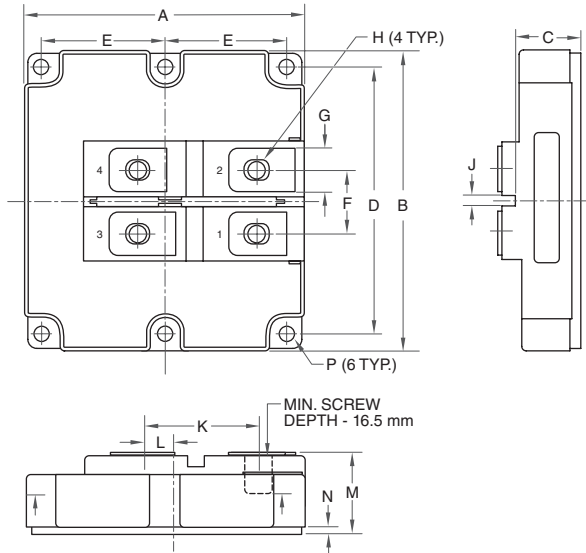
# 12 RM400DY-24S



Dim.	Inches	Millimeters	Dim.	Inches	Millimeters
A	4.33	110.0	N	1.18	30.0
B	3.15	80.0	P	0.71	18.0
C	1.14+0.04/-0.02	29.0+1.0/-0.5	Q	0.28	7.0
D	3.66±0.01	93.0±0.25	R	0.83	21.2
E	2.44±0.01	62.0±0.25	S	0.33	8.5
F	0.98	25.0	T	0.0157	0.4
G	0.24	6.0	U	0.110	2.8
H	0.59	15.0	V	0.16	4.0
J	0.81	20.5	W	0.30	7.5
K	0.55	14.0	X	0.21	5.3
L	0.26 Dia.	Dia. 6.5	Y	0.47	12.0
M	M6 Metric	M6	Z	0.85	21.5

Division of Dimension	Tolerance
0.5 to 3	±0.2
over 3 to 6	±0.3
over 6 to 30	±0.5
over 30 to 120	±0.8
over 120 to 400	±1.2

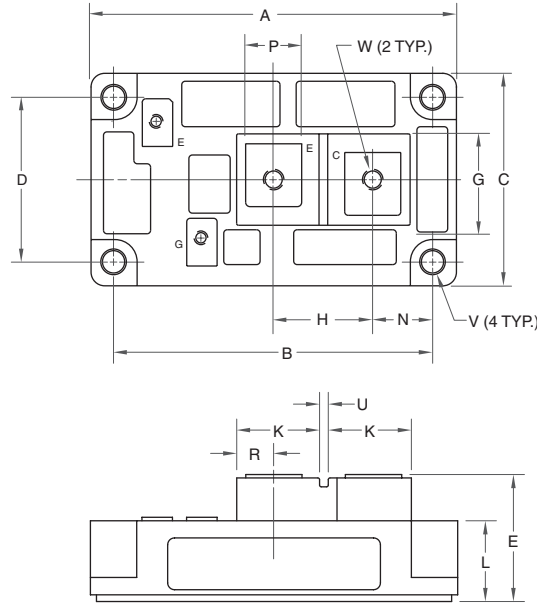
# 13 RM1200DB-34S



Dim.	Inches	Millimeters
A	5.12±0.02	130.0±0.5
B	5.51±0.02	140.0±0.5
C	1.16±0.02	29.5±0.5
D	4.88±0.009	124.0±0.25
E	2.24±0.009	57.0±0.25
F	1.18±0.008	30.0±0.2
G	0.79±0.004	20.0±0.1

Dim.	Inches	Millimeters
H	M8 Metric	M8
J	0.20±0.008	5.0±0.2
K	2.17±0.012	55.2±0.3
L	0.467±0.008	11.85±0.2
M	1.50+0.039/-0.0	38.0+1.0/-0.0
N	0.2±0.008	5.0±0.2
P	0.28 Dia.	7.0 Dia.

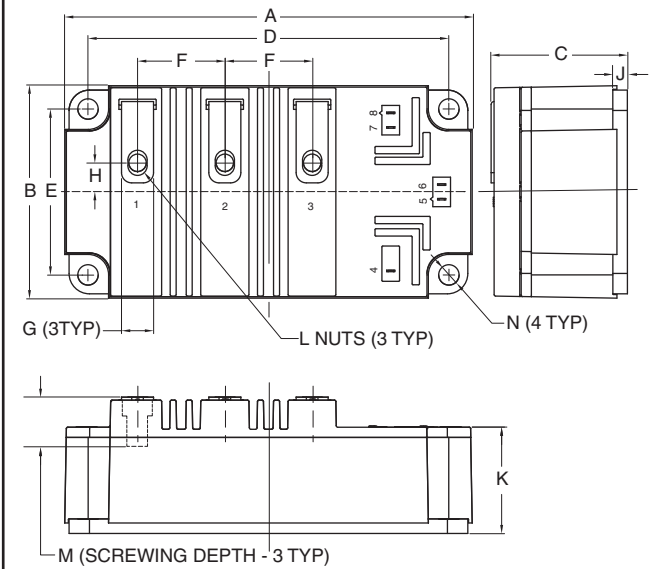
# 14 QRS1450001, QRS171D001



Dim.	Inches	Millimeters
A	4.21	107.0
B	3.661±0.01	93.0±0.25
C	2.44	62.0
D	1.89±0.01	48.0±0.25
E	1.42 Max.	36.0 Max.
G	1.18	30.0
H	1.14	29.0
K	0.94	24.0

Dim.	Inches	Millimeters
L	0.93	23.5
N	0.69	17.5
P	0.63	16.0
R	0.43	11.0
T	0.28	7.0
U	0.12	3.0
V	0.26 Dia.	6.6 Dia.
W	M6 Metric	M6

# 15 QRD3320004

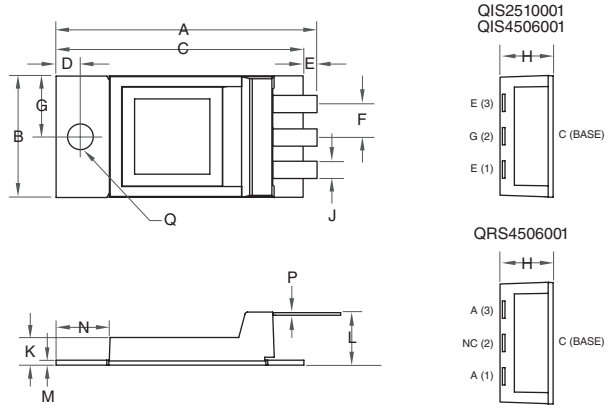


Dim.	Inches	Millimeters
A	5.51	140.0
B	2.87	73.0
C	1.50	38.0
D	4.88±0.01	124.0±0.25
E	2.24±0.01	57.0±0.25
F	1.18	30.0
G	0.43	11.0

Dim.	Inches	Millimeters
H	0.38	9.75
J	0.20	5.0
K	1.04	26.5
L	M5 Metric	M5
M	0.63 Min.	16.0 Min.
N	0.28 Dia.	7.0 Dia.



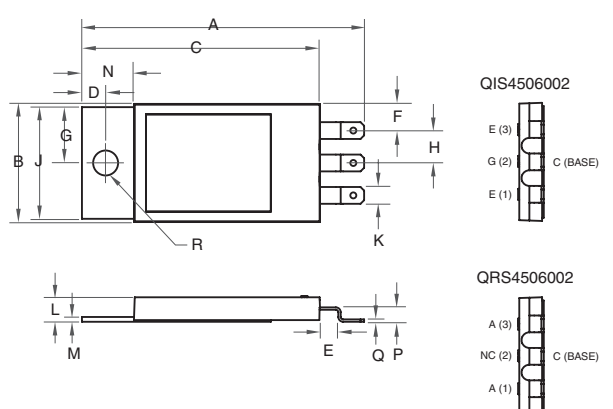
# 16 QRS4506001



Dim.	Inches	Millimeters
A	2.31	53.6
B	0.98	25.0
C	2.01	51.0
D	0.2	5.0
E	0.1	2.5
F	0.27	6.9
G	0.49	12.5
H	0.46 Max.	11.8 Max.

Dim.	Inches	Millimeters
J	0.14	3.6
K	0.22	5.7
L	0.43	10.8
M	0.04	1.0
N	0.43	10.9
P	0.02	0.5
Q	0.21 Dia.	5.3 Dia.

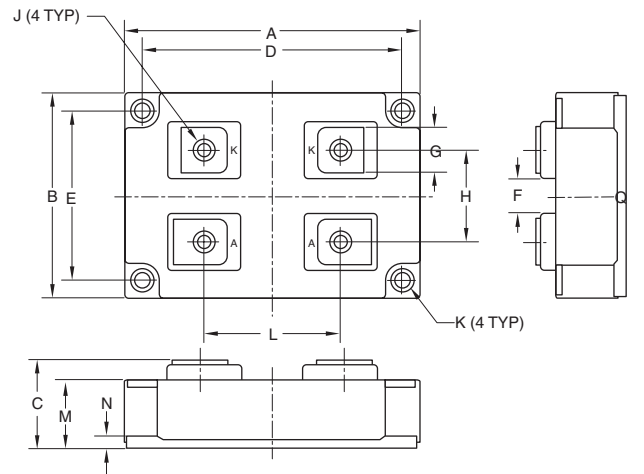
# 17 QRS4506002, QRS6503002, QRS6505002



Dim.	Inches	Millimeters
A	2.35	59.7
B	0.98	25.0
C	1.98	50.3
D	0.197	5.0
E	0.22	5.5
F	0.22	5.6
G	0.465	11.8
H	0.27	6.9

Dim.	Inches	Millimeters
J	0.93	23.6
K	0.14	3.6
L	0.20	5.2
M	0.40	1.0
N	0.43	11.0
P	0.20	0.5
Q	0.12	3.0
R	0.208 Dia.	5.3 Dia.

# 18 RM1500HE-66F



Dim.	Inches	Millimeters
A	5.12±0.02	130.0±0.5
B	3.54±0.02	90.0±0.5
C	1.50+0.04/-0.0	38.0+1.0/-0.0
D	4.49±0.01	114.0±0.25
E	2.91±0.01	74.0±0.25
F	0.59±0.012	15.0±0.3
G	0.79+0.04/-0.008	20.0+1.0/-0.2

Dim.	Inches	Millimeters
H	1.57±0.2	40.0±0.5
J	M8 Metric	M8
K	0.28 Dia.	7.0 Dia.
L	2.4±0.2	61.5±0.5
M	1.17±0.02	29.7±0.5
N	0.2±0.008	5.0±0.2

# ASSEMBLIES

## Air Cooled / Liquid Cooled / Integrated Power Structures

Powerex has developed a wide line-up of standard air or liquid cooled rectifier / thyristor assemblies in all common circuit configurations utilizing either discrete disc or isolated baseplate power semiconductors. A range of standard extrusions or chill blocks and clamps are used to produce a comprehensive range of assemblies from 100 to 6000A DC output in air cooled and 400 to 15000A DC output when liquid cooled.

When standard assemblies are not sufficient, the Powerex engineering team will design and manufacture power semiconductor assemblies to specific application requirements. These engineered solutions provide the optimum solution to electrical, thermal or mechanical challenges.

### Applications Include:

- Battery Chargers
- Induction Heating/Melting
- Motor Controls
- Motor Starters
- Power Supplies
- Transportation
- UPS
- Welding

### Circuit Configurations:

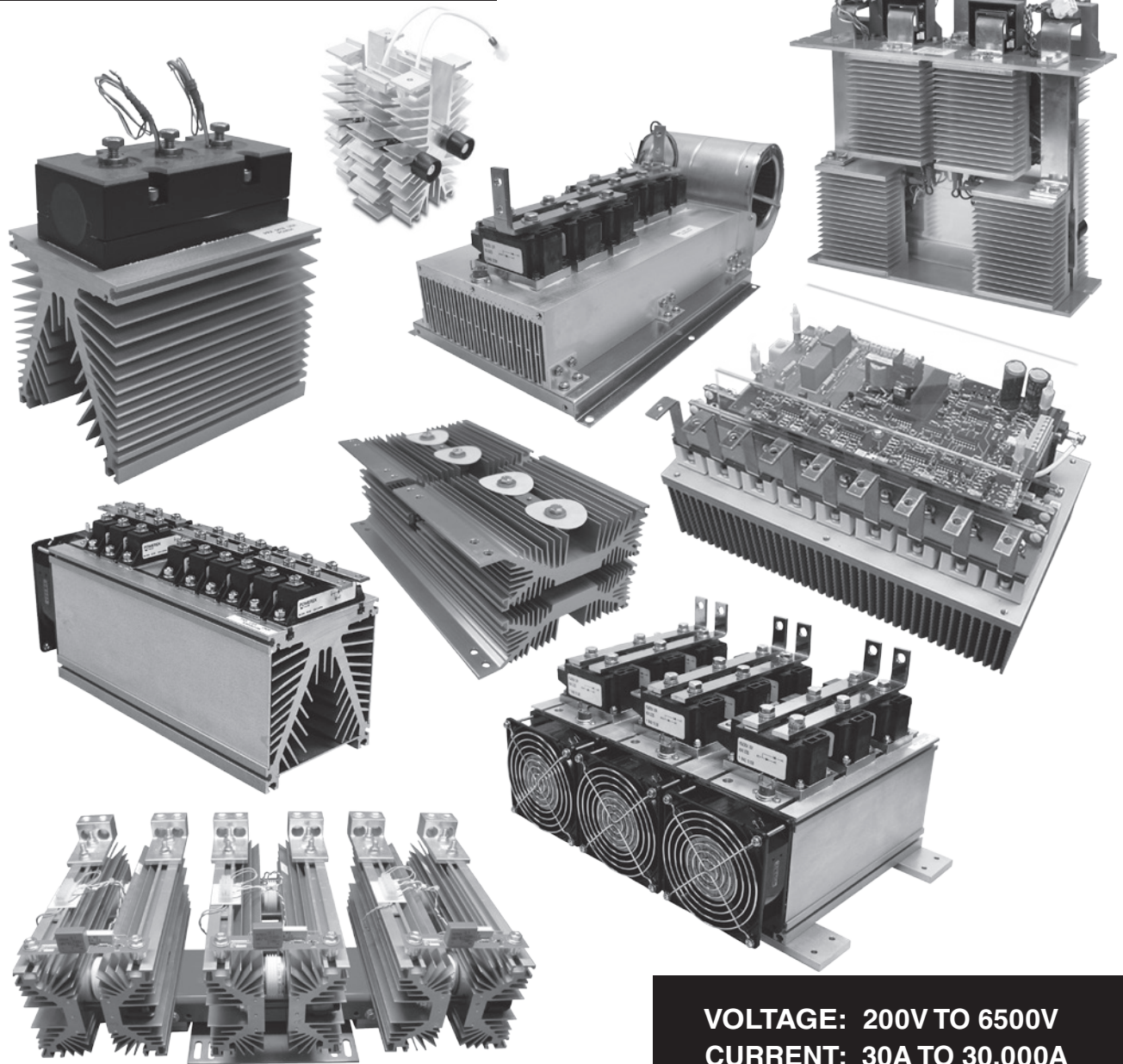
- Single
- Half-Bridge
- AC Switch
- Common Cathode/Common Anode
- Single-Phase Bridge
- Three-Phase Bridge

### Options Available in Engineered Assemblies:

- Bus Bars
- Fans
- Fuses
- Gate Drive
- Insulators
- Terminal Blocks
- Thermal Sensors
- Snubbers (R-C Transient Suppressors)

### TABLE OF CONTENTS

PA Assembly Overview .....	J-2
PD Assembly Overview .....	J-3
Three-Phase AC Switch .....	J-4
Three-Phase DC Rectifier .....	J-6
Three-Phase Half Controlled Rectifier .....	J-8
Three-Phase Full Controlled Rectifier .....	J-10
Outline Drawings .....	J-12
Medium Voltage Assemblies .....	J-17



**VOLTAGE: 200V TO 6500V**  
**CURRENT: 30A TO 30,000A**

## PA Assembly Overview

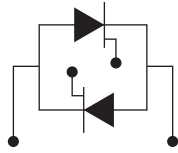
Powerex assemblies with the PA prefix are available in two varieties. PAA assemblies are disc-based assemblies and PAB assemblies are module-based assemblies.

Fans are not included as part of the standard assembly.

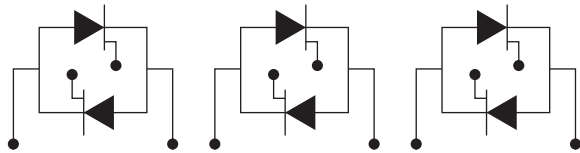
If your application requirements do not allow the selection of a standard assembly, as listed on pages J-4 through J-5, then to determine the proper assembly for your application, the following information is needed:

### (1) Choose the Circuit Type:

Single-Phase AC Switch



Three-Phase AC Switch



### (2) Electrical Parameters:

- Maximum Continuous Output Current (Amps) \_\_\_\_\_  
Maximum Overload
  - Output DC Current (Amps) \_\_\_\_\_
  - Overload Duration (Sec) \_\_\_\_\_
- Input Voltage (Volts) \_\_\_\_\_  
(VAC-RMS for Single Phase, VAC-RMS line-to-line for Three-Phase)
- Line Frequency:     50 Hertz or  60 Hertz    Other \_\_\_\_\_ Hz

### (3) Environmental Parameters:

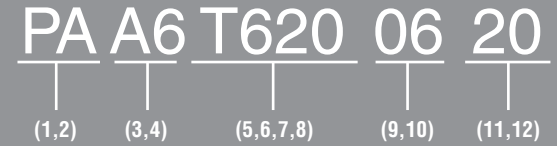
- Maximum Ambient Temperature (°C) \_\_\_\_\_
- Humidity (0-95% Non-Condensing): \_\_\_\_\_
- Maximum Altitude (feet above sea level): \_\_\_\_\_ ft

Please email this information to our IPP Department at [ipp@pwr.com](mailto:ipp@pwr.com).

A Powerex engineer will review the information and contact you to discuss your assembly needs.

## PA Numbering System

PAA6T6200620 is a 600 Volt disc based, Three-Phase AC Assembly.



(1,2) Circuit Code:

Rectifier	SCR	Half-Control	Full-Control
-----------	-----	--------------	--------------

#### PA (AC Switch)

Powerex supplies the sink jumper (AC connection) on the PA air cooled assembly types only.



(3,4) Sink Code: Customer Specific

(5,6,7,8) Device Code: Application Specific

(9,10) Voltage Code:

- 02 = 200
- 04 = 400
- 06 = 600
- 08 = 800
- 10 = 1000
- 12 = 1200
- 14 = 1400
- 16 = 1600
- 18 = 1800
- 20 = 2000
- 22 = 2200
- 24 = 2400
- 26 = 2600
- 28 = 2800
- 30 = 3000

(11,12) Current Code: Device Specific

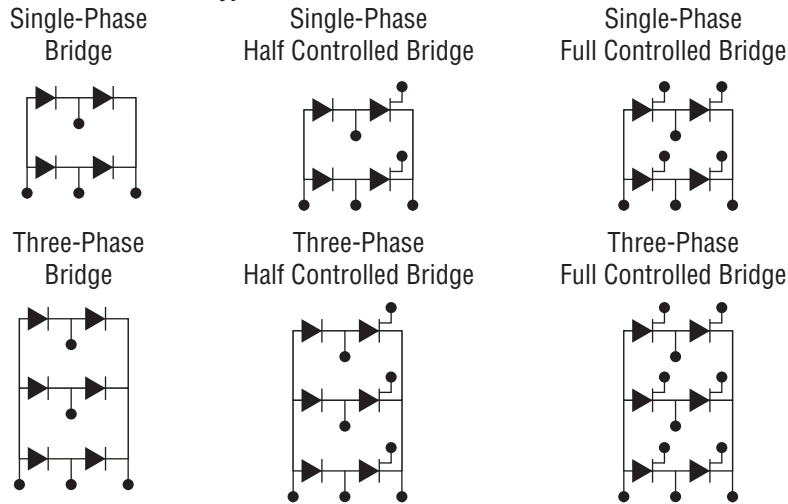
# PD Assembly Overview

Powerex assemblies with the PD prefix are available in two varieties. PDA assemblies are disc-based assemblies and PDB assemblies are module-based assemblies.

Fans are not included as part of the standard assembly.

If your application requirements do not allow the selection of a standard assembly, as listed on pages J-6 through J-11, then to determine the proper assembly for your application, the following information is needed:

## (1) Choose the Circuit Type:



## (2) Electrical Parameters:

- Maximum Continuous Output Current (Amps) \_\_\_\_\_  
Maximum Overload
  - Output DC Current (Amps) \_\_\_\_\_
  - Overload Duration (Sec) \_\_\_\_\_
- Input Voltage (Volts) \_\_\_\_\_  
(VAC-RMS for Single Phase, VAC-RMS line-to-line for Three-Phase)
- Line Frequency:  50 Hertz or  60 Hertz Other \_\_\_\_\_ Hz

## (3) Environmental Parameters:

- Maximum Ambient Temperature (°C) \_\_\_\_\_
- Humidity (0-95% Non-Condensing): \_\_\_\_\_
- Maximum Altitude (feet above sea level): \_\_\_\_\_ ft

Please email this information to our IPP Department at [ipp@pwr.com](mailto:ipp@pwr.com). A Powerex engineer will review the information and contact you to discuss your assembly needs.

# PD Numbering System

PDA9T9R9 22 10 is a 2200 Volt, Air Cooled Doubler Assembly.



## (1,2) Circuit Code:

Rectifier    SCR    Half-Control    Full-Control

### PC (Positive Centertap – Common Cathode Connection)



(3,4) Sink Code: Customer Specific

### PD (Doubler Assemblies)

Remember to check the number of assemblies required for your circuit configuration.



(5,6,7,8) Device Code: Application Specific

### PN (Negative Centertap – Common Anode Connection)



(9,10) Voltage Code:

- 02 = 200
- 04 = 400
- 06 = 600
- 08 = 800
- 10 = 1000
- 12 = 1200
- 14 = 1400
- 16 = 1600
- 18 = 1800
- 20 = 2000
- 22 = 2200
- 24 = 2400
- 26 = 2600
- 28 = 2800
- 30 = 3000

### PP (Parallel Connection)

Connections available as Special Purpose Assemblies with selected device matching negotiated with Powerex application engineers.



### PR (Single Assemblies)

Remember to check the number of assemblies required for your circuit configuration.



### PS (Series Connection)

Connections available as Special Purpose Assemblies with the following options: device selection and matching; chill blocks and fittings (targets); disc clamp designs with additional spring deflection and additional voltage capabilities, corona (CIV, CEV) and Hipot testing, balancing capacitors, resistors.



(11,12) Current Code: Device Specific

### PT (Single Assemblies)

Remember to check the number of assemblies required for your circuit configuration.

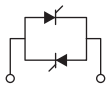


## Three-Phase AC Switch

### Discs, Hockey Puks

Part Number	Voltage	Output Current A <sub>RMS</sub> Amperes	Package Size (inches)	Quantity Required for 3-Phase Circuit	Ambient Temperature (°C)	Inlet Air Velocity (LFM)	Approximate Weight		Outline Drawings	
							(lbs)	(kgs)	Number	Page
PAA6T6200620*	600	400	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PAA6T6201220*	1200	400	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PAA6T6201620*	1600	400	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PAA7T7200645*	600	600	13.125 x 5.625 x 6.25	3	50	1000	13.7	6.2	2	J-12
PAA7T7201245*	1200	600	13.125 x 5.625 x 6.25	3	50	1000	13.7	6.2	2	J-12
PAA7T7201645*	1600	600	13.125 x 5.625 x 6.25	3	50	1000	13.7	6.2	2	J-12
PAA7T7200655*	600	700	13.125 x 5.625 x 6.25	3	50	1000	13.7	6.2	2	J-12
PAA7T7201255*	1200	700	13.125 x 5.625 x 6.25	3	50	1000	13.7	6.2	2	J-12
PAA7T7201655*	1600	700	13.125 x 5.625 x 6.25	3	50	1000	13.7	6.2	2	J-12
PAA7T7S00675*	600	800	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PAA7T7S01275*	1200	800	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PAA7T7S01675*	1600	800	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PAA9T9G00610*	600	1350	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PAA9T9G01210*	1200	1350	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PAA9T9G01610*	1600	1350	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PAA9T9G00612*	600	1700	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PAA9T9G01212*	1200	1700	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PAA9T9G01612*	1600	1700	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PAAATA200616*	600	2100	21.12 x 12.69 x 7.84	3	50	1000	86.4	39.2	5	J-14
PAAATA201216*	1200	2100	21.12 x 12.69 x 7.84	3	50	1000	86.4	39.2	5	J-14
PAAATA201616*	1600	2100	21.12 x 12.69 x 7.84	3	50	1000	86.4	39.2	5	J-14
PAAATA200618*	600	2500	21.12 x 12.69 x 7.84	3	50	1000	86.4	39.2	5	J-14
PAAATA201218*	1200	2500	21.12 x 12.69 x 7.84	3	50	1000	86.4	39.2	5	J-14
PAAATA201618*	1600	2500	21.12 x 12.69 x 7.84	3	50	1000	86.4	39.2	5	J-14

\*Part number represents a single-phase assembly, you will need three assemblies to complete a three-phase circuit.



Single-Phase Assembly –  
(3 Required for Three-Phase Circuit)

# Three-Phase AC Switch

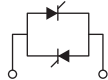
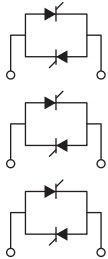
## Isolated Modules

Part Number	Voltage	Output Current A <sub>rms</sub> Amperes	Package Size (inches)	Quantity Required for 3-Phase Circuit	Ambient Temperature (°C)	Inlet Air Velocity (LFM)	Approximate Weight		Outline Drawings	
							(lbs)	(kgs)	Number	Page
PAB1CD430890	800	100	6.00 x 4.92 x 7.00	1	50	800	6.8	3.1	6	J-14
PAB1CD431290	1200	100	6.00 x 4.92 x 7.00	1	50	800	6.8	3.1	6	J-14
PAB1CD431690	1600	100	6.00 x 4.92 x 7.00	1	50	800	6.8	3.1	6	J-14
PAB2CD630815	800	150	9.00 x 4.92 x 7.00	1	50	800	11.0	5.0	8	J-15
PAB2CD631215	1200	150	9.00 x 4.92 x 7.00	1	50	800	11.0	5.0	8	J-15
PAB2CD631615	1600	150	9.00 x 4.92 x 7.00	1	50	800	11.0	5.0	8	J-15
PAB3ND430825	800	200	12.00 x 4.92 x 8.00	1	50	800	18.75	8.5	10	J-16
PAB3ND431225	1200	200	12.00 x 4.92 x 8.00	1	50	800	18.75	8.5	10	J-16
PAB3ND431625	1600	200	12.00 x 4.92 x 8.00	1	50	800	18.75	8.5	10	J-16
PAB2LD430850*	800	300	9.00 x 4.92 x 8.00	3	50	800	12.5	5.6	12	J-16
PAB2LD431250*	1200	300	9.00 x 4.92 x 8.00	3	50	800	12.5	5.6	12	J-16
PAB2LD431650*	1600	300	9.00 x 4.92 x 8.00	3	50	800	12.5	5.6	12	J-16

\*Part number represents a single-phase assembly, you will need three assemblies to complete a three-phase circuit.

PAB1CD430890, PAB1CD431290, PAB1CD431690,  
PAB2CD630815, PAB2CD631215, PAB2CD631615,  
PAB3ND430825, PAB3ND431225, PAB3ND431625

PAB2LD430850, PAB2LD431250, PAB2LD431650

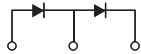


Single-Phase Assembly –  
**(3 Required for Three-Phase Circuit)**

## Three-Phase DC Rectifier Discs, Hockey Pucks

Part Number	Voltage	Output Current Avg Amperes	Package Size (inches)	Quantity Required for 3-Phase Circuit	Ambient Temperature (°C)	Inlet Air Velocity (LFM)	Approximate Weight		Outline Drawings	
							(lbs)	(kgs)	Number	Page
PDA6R6200630*	600	850	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PDA6R6201230*	1200	850	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PDA6R6201630*	1600	850	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PDA7R7S00608*	600	1200	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7R7S01208*	1200	1200	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7R7S01608*	1600	1200	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7R7S00612*	600	1650	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7R7S01212*	1200	1650	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7R7S01612*	1600	1650	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7R7S00616*	600	2450	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7R7S01216*	1200	2450	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7R7S01616*	1600	2450	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA9R9G00612*	600	2700	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9R9G01212*	1200	2700	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9R9G01612*	1600	2700	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9R9G00618*	600	3300	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9R9G01218*	1200	3300	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9R9G01618*	1600	3300	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9R9G00622*	600	4500	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9R9G01222*	1200	4500	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9R9G01622*	1600	4500	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDAARA200636*	600	5800	21.12 x 12.69 x 7.84	3	50	1000	86.4	39.2	5	J-14
PDAARA201236*	1200	5800	21.12 x 12.69 x 7.84	3	50	1000	86.4	39.2	5	J-14
PDAARA201636*	1600	5800	21.12 x 12.69 x 7.84	3	50	1000	86.4	39.2	5	J-14

\*Part number represents a single-phase assembly, you will need three assemblies to complete a three-phase circuit.



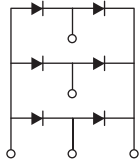
Single-Phase Assembly –  
**(3 Required for Three-Phase Circuit)**

# Three-Phase DC Rectifier Isolated Modules

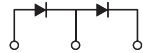
Part Number	Voltage	Output Current A <sub>DC</sub> Amperes	Package Size (inches)	Quantity Required for 3-Phase Circuit	Ambient Temperature (°C)	Inlet Air Velocity (LFM)	Approximate Weight		Outline Drawings	
							(lbs)	(kgs)	Number	Page
PDB1CD410899	800	150	6.00 x 4.92 x 7.00	1	50	800	6.8	3.1	7	J-15
PDB1CD411299	1200	150	6.00 x 4.92 x 7.00	1	50	800	6.8	3.1	7	J-15
PDB1CD411699	1600	150	6.00 x 4.92 x 7.00	1	50	800	6.8	3.1	7	J-15
PDB2CD610816	800	200	9.00 x 4.92 x 7.00	1	50	800	11.0	5.0	9	J-15
PDB2CD611216	1200	200	9.00 x 4.92 x 7.00	1	50	800	11.0	5.0	9	J-15
PDB2CD611616	1600	200	9.00 x 4.92 x 7.00	1	50	800	11.0	5.0	9	J-15
PDB3ND410826	800	300	15.00 x 4.92 x 8.00	1	50	800	18.75	8.5	11	J-16
PDB3ND411226	1200	300	15.00 x 4.92 x 8.00	1	50	800	18.75	8.5	11	J-16
PDB3ND411626	1600	300	15.00 x 4.92 x 8.00	1	50	800	18.75	8.5	11	J-16
PDB2LD410860*	800	450	9.00 x 4.92 x 8.00	3	50	800	12.5	5.6	12	J-16
PDB2LD411260*	1200	450	9.00 x 4.92 x 8.00	3	50	800	12.5	5.6	12	J-16
PDB2LD411660*	1600	450	9.00 x 4.92 x 8.00	3	50	800	12.5	5.6	12	J-16

\*Part number represents a single-phase assembly, you will need three assemblies to complete a three-phase circuit.

PDB1CD410899, PDB1CD411299, PDB1CD411699,  
PDB2CD610816, PDB2CD611216, PDB2CD611616,  
PDB3ND410826, PDB3ND411226, PDB3ND411626



PDB2LD410860, PDB2LD411260, PDB2LD411660



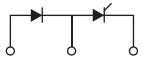
Single Phase Assembly –  
**(3 Required for Three-Phase Circuit)**



## Three-Phase Half Controlled Rectifier Discs, Hockey Puks

Part Number	Voltage	Output Current Apc Amperes	Package Size (inches)	Quantity Required for 3-Phase Circuit	Ambient Temperature (°C)	Inlet Air Velocity (LFM)	Approximate Weight		Outline Drawings	
							(lbs)	(kgs)	Number	Page
PDA6T6R60620*	600	500	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PDA6T6R61220*	1200	500	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PDA6T6R61620*	1600	500	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PDA6T6R60630*	600	600	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PDA6T6R61230*	1200	600	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PDA6T6R61630*	1600	600	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PDA7T7R70645*	600	800	13.125 x 5.625 x 6.25	3	50	1000	13.7	6.2	2	J-12
PDA7T7R71245*	1200	800	13.125 x 5.625 x 6.25	3	50	1000	13.7	6.2	2	J-12
PDA7T7R71645*	1600	800	13.125 x 5.625 x 6.25	3	50	1000	13.7	6.2	2	J-12
PDA7TSRS0665*	600	950	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7TSRS1265*	1200	950	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7TSRS1665*	1600	950	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7TSRS0675*	600	1000	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7TSRS1275*	1200	1000	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7TSRS1675*	1600	1000	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA9T9R90610*	600	1750	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9T9R91210*	1200	1750	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9T9R91610*	1600	1750	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9T9R90612*	600	2200	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9T9R91212*	1200	2200	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9T9R91612*	1600	2200	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDAATARA0618*	600	3300	21.12 x 12.69 x 7.84	3	50	1000	86.4	39.2	5	J-14
PDAATARA1218*	1200	3300	21.12 x 12.69 x 7.84	3	50	1000	86.4	39.2	5	J-14
PDAATARA1618*	1600	3300	21.12 x 12.69 x 7.84	3	50	1000	86.4	39.2	5	J-14

\*Part number represents a single-phase assembly, you will need three assemblies to complete a three-phase circuit.



Single-Phase Assembly –  
(3 Required for Three-Phase Circuit)

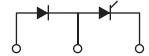
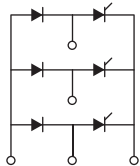
## Three-Phase Half Controlled Rectifier Isolated Modules

Part Number	Voltage	Output Current A <sub>DC</sub> Amperes	Package Size (inches)	Quantity Required for 3-Phase Circuit	Ambient Temperature (°C)	Inlet Air Velocity (LFM)	Approximate Weight		Outline Drawings	
							(lbs)	(kgs)	Number	Page
PDB1CD420890	800	150	6.00 x 4.92 x 7.00	1	50	800	6.8	3.1	7	J-15
PDB1CD421290	1200	150	6.00 x 4.92 x 7.00	1	50	800	6.8	3.1	7	J-15
PDB1CD421690	1600	150	6.00 x 4.92 x 7.00	1	50	800	6.8	3.1	7	J-15
PDB2CD620815	800	200	9.00 x 4.92 x 7.00	1	50	800	11.0	5.0	9	J-15
PDB2CD621215	1200	200	9.00 x 4.92 x 7.00	1	50	800	11.0	5.0	9	J-15
PDB2CD621615	1600	200	9.00 x 4.92 x 7.00	1	50	800	11.0	5.0	9	J-15
PDB3ND420825	800	300	15.00 x 4.92 x 8.00	1	50	800	18.75	8.5	11	J-16
PDB3ND421225	1200	300	15.00 x 4.92 x 8.00	1	50	800	18.75	8.5	11	J-16
PDB3ND421625	1600	300	15.00 x 4.92 x 8.00	1	50	800	18.75	8.5	11	J-16
PDB2LD420850*	800	450	9.00 x 4.92 x 8.00	3	50	800	12.5	5.6	12	J-16
PDB2LD421250*	1200	450	9.00 x 4.92 x 8.00	3	50	800	12.5	5.6	12	J-16
PDB2LD421650*	1600	450	9.00 x 4.92 x 8.00	3	50	800	12.5	5.6	12	J-16

\*Part number represents a single-phase assembly, you will need three assemblies to complete a three-phase circuit.

PDB1CD420890, PDB1CD421290, PDB1CD421690,  
PDB2CD620815, PDB2CD621215, PDB2CD621615,  
PDB3ND420825, PDB3ND421225, PDB3ND421625

PDB2LD420850, PDB2LD421250, PDB2LD421650

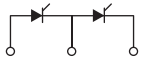


Single-Phase Assembly –  
**(3 Required for Three-Phase Circuit)**

# Three-Phase Full Controlled Rectifier Discs, Hockey Puks

Part Number	Voltage	Output Current Apc Amperes	Package Size (inches)	Quantity Required for 3-Phase Circuit	Ambient Temperature (°C)	Inlet Air Velocity (LFM)	Approximate Weight		Outline Drawings	
							(lbs)	(kgs)	Number	Page
PDA6T6200620*	600	500	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PDA6T6201220*	1200	500	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PDA6T6201620*	1600	500	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PDA6T6200630*	600	600	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PDA6T6201230*	1200	600	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PDA6T6201630*	1600	600	13.125 x 5.75 x 5.75	3	50	1000	12.8	5.8	1	J-12
PDA7T7200645*	600	800	13.125 x 5.625 x 6.25	3	50	1000	13.7	6.2	2	J-12
PDA7T7201245*	1200	800	13.125 x 5.625 x 6.25	3	50	1000	13.7	6.2	2	J-12
PDA7T7201645*	1600	800	13.125 x 5.625 x 6.25	3	50	1000	13.7	6.2	2	J-12
PDA7T7S00665*	600	950	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7T7S01265*	1200	950	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7T7S01665*	1600	950	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7T7S00675*	600	1000	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7T7S01275*	1200	1000	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA7T7S01675*	1600	1000	13.125 x 5.625 x 5.80	3	50	1000	12.8	5.8	3	J-13
PDA9T9G00610*	600	1750	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9T9G01210*	1200	1750	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9T9G01610*	1600	1750	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9T9G00612*	600	2200	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9T9G01212*	1200	2200	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDA9T9G01612*	1600	2200	17.125 x 9.938 x 6.44	3	50	1000	45.0	20.4	4	J-13
PDAATA200618*	600	3300	21.12 x 12.69 x 7.84	3	50	1000	86.4	39.2	5	J-14
PDAATA201218*	1200	3300	21.12 x 12.69 x 7.84	3	50	1000	86.4	39.2	5	J-14
PDAATA201618*	1600	3300	21.12 x 12.69 x 7.84	3	50	1000	86.4	39.2	5	J-14

\*Part number represents a single-phase assembly, you will need three assemblies to complete a three-phase circuit.



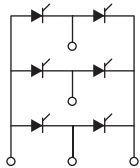
Single-Phase Assembly –  
**(3 Required for Three-Phase Circuit)**

# Three-Phase Full Controlled Rectifier Isolated Modules

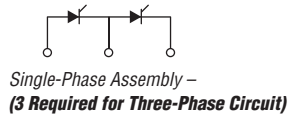
Part Number	Voltage	Output Current A <sub>DC</sub> Amperes	Package Size (inches)	Quantity Required for 3-Phase Circuit	Ambient Temperature (°C)	Inlet Air Velocity (LFM)	Approximate Weight		Outline Drawings	
							(lbs)	(kgs)	Number	Page
PDB1CD430890	800	150	6.00 x 4.92 x 7.00	1	50	800	6.8	3.1	7	J-15
PDB1CD431290	1200	150	6.00 x 4.92 x 7.00	1	50	800	6.8	3.1	7	J-15
PDB1CD431690	1600	150	6.00 x 4.92 x 7.00	1	50	800	6.8	3.1	7	J-15
PDB2CD630815	800	200	9.00 x 4.92 x 7.00	1	50	800	11.0	5.0	9	J-15
PDB2CD631215	1200	200	9.00 x 4.92 x 7.00	1	50	800	11.0	5.0	9	J-15
PDB2CD631615	1600	200	9.00 x 4.92 x 7.00	1	50	800	11.0	5.0	9	J-15
PDB3ND430625	600	300	15.00 x 4.92 x 8.00	1	50	800	18.75	8.5	11	J-16
PDB3ND431225	1200	300	15.00 x 4.92 x 8.00	1	50	800	18.75	8.5	11	J-16
PDB3ND431625	1600	300	15.00 x 4.92 x 8.00	1	50	800	18.75	8.5	11	J-16
PDB2LD430850*	800	450	9.00 x 4.92 x 8.00	3	50	800	12.5	5.6	12	J-16
PDB2LD431250*	1200	450	9.00 x 4.92 x 8.00	3	50	800	12.5	5.6	12	J-16
PDB2LD431650*	1600	450	9.00 x 4.92 x 8.00	3	50	800	12.5	5.6	12	J-16

\*Part number represents a single-phase assembly, you will need three assemblies to complete a three-phase circuit.

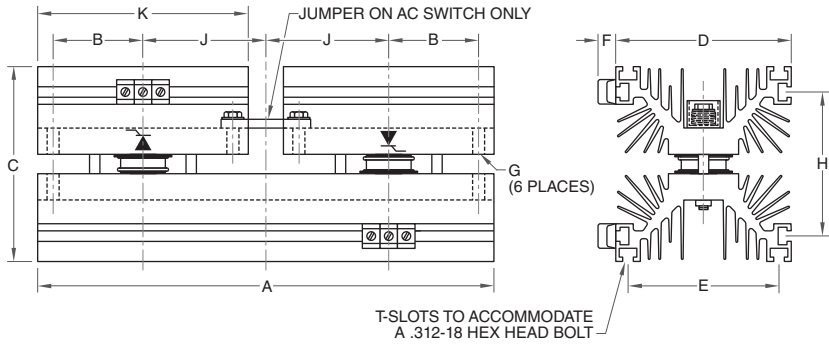
PDB1CD430890, PDB1CD431290, PDB1CD431690,  
PDB2CD630815, PDB2CD631215, PDB2CD631615,  
PDB3ND430625, PDB3ND431225, PDB3ND431625



PDB2LD430850, PDB2LD431250, PDB2LD431650

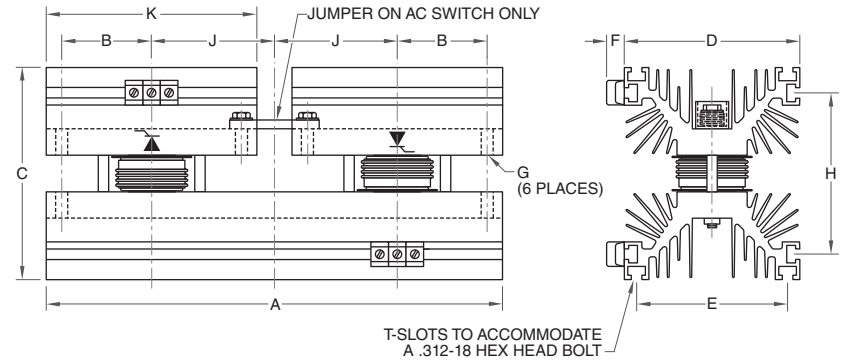


**1** PAA6T6200620, PAA6T6201220, PAA6T6201620, PDA6R6200630, PDA6R6201230, PDA6R6201630, PDA6T6200620, PDA6T6200630, PDA6T6201220, PDA6T6201230, PDA6T6201620, PDA6T6201630, PDA6T6R60620, PDA6T6R60630, PDA6T6R61220, PDA6T6R61230, PDA6T6R61620, PDA6T6R61630



Dim.	Inches	Millimeters
A	13.06 Max.	331.72 Max.
B	2.56	65.0
C	5.60 Max.	142.24 Max.
D	5.06 Max.	128.52 Max.
E	4.25 Ref.	107.9 Ref.
F	0.5 Ref.	12.7 Ref.
G	0.344 Dia.	8.75 Dia.
H	4.10 Ref.	104.14 Ref.
J	3.5 Ref.	88.9 Ref.
K	6.0 Ref.	152.4 Ref.

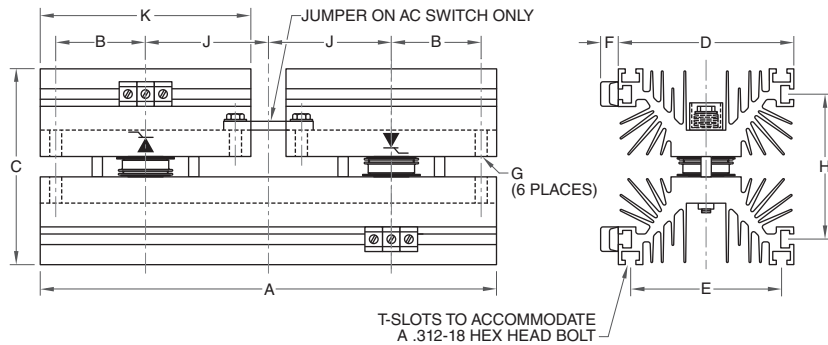
**2** PAA7T7200645, PAA7T7200655, PAA7T7201245, PAA7T7201255, PAA7T7201645, PAA7T7201655, PDA7T7200645, PDA7T7201245, PDA7T7201645, PDA7T7R70645, PDA7T7R71245, PDA7T7R71645



Dim.	Inches	Millimeters
A	13.06 Max.	331.72 Max.
B	2.56	65.0
C	6.06 Max.	153.92 Max.
D	5.06 Max.	128.52 Max.
E	4.25 Ref.	107.9 Ref.
F	0.5 Ref.	12.7 Ref.
G	0.344 Dia.	8.75 Dia.
H	4.59 Ref.	116.58 Ref.
J	3.5 Ref.	88.9 Ref.
K	6.0 Ref.	152.4 Ref.

3

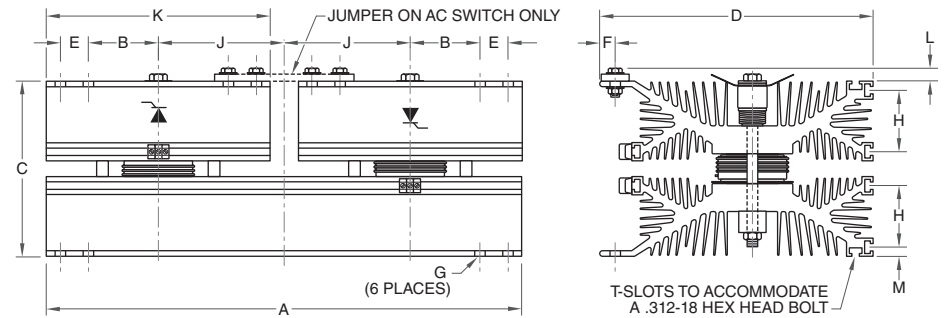
PAA7T7S00675, PAA7T7S01275, PAA7T7S01675, PDA7R7S00608, PDA7R7S00612, PDA7R7S00616, PDA7R7S01208, PDA7R7S01212, PDA7R7S01216, PDA7R7S01608, PDA7R7S01612, PDA7R7S01616, PDA7TSRS0665, PDA7TSRS0675, PDA7TSRS1265, PDA7TSRS1275, PDA7TSRS1665, PDA7TSRS1675, PDA7T7S00665, PDA7T7S00675, PDA7T7S01265, PDA7T7S01275, PDA7T7S01665, PDA7T7S01675



Dim.	Inches	Millimeters
A	13.06 Max.	331.72 Max.
B	2.56	65.0
C	5.64 Max.	143.26 Max.
D	5.06 Max.	128.52 Max.
E	4.25 Ref.	107.9 Ref.
F	0.5 Ref.	12.7 Ref.
G	0.344 Dia.	8.75 Dia.
H	4.13 Ref.	104.9 Ref.
J	3.5 Ref.	88.9 Ref.
K	6.0 Ref.	152.4 Ref.

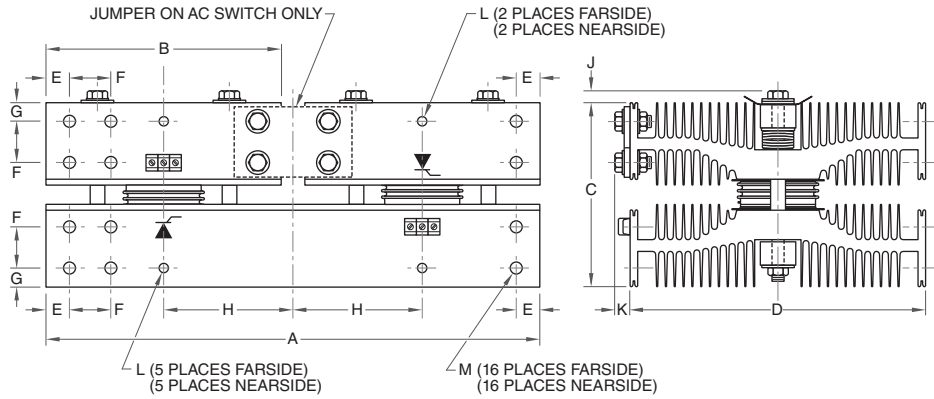
4

PAA9T9G00610, PAA9T9G00612, PAA9T9G01210, PAA9T9G01212, PAA9T9G01610, PAA9T9G01612, PDA9R9G00612, PDA9R9G00618, PDA9R9G00622, PDA9R9G01212, PDA9R9G01218, PDA9R9G01222, PDA9R9G01612, PDA9R9G01618, PDA9R9G01622, PDA9T9G00610, PDA9T9G00612, PDA9T9G01210, PDA9T9G01212, PDA9T9G01610, PDA9T9G01612, PDA9T9R90610, PDA9T9R90612, PDA9T9R91210, PDA9T9R91212, PDA9T9R91610, PDA9T9R91612



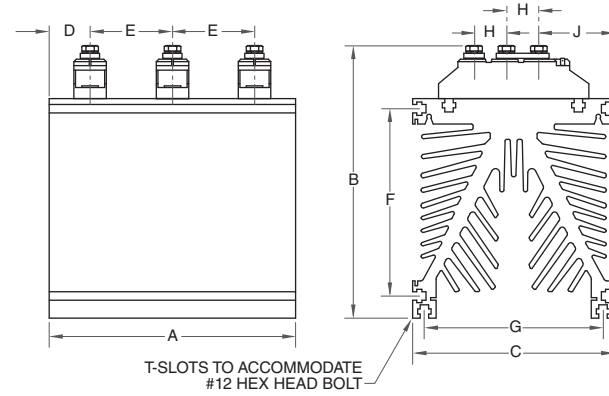
Dim.	Inches	Millimeters
A	17.06 Max.	433.32 Max.
B	2.5	63.5
C	6.3 Max.	160.02 Max.
D	9.86 Max.	250.95 Max.
E	1.0	25.4
F	0.75 Ref.	19.05 Ref.
G	0.375 Dia.	9.525 Dia.
H	2.16 Ref.	54.86 Ref.
J	4.5 Ref.	114.3 Ref.
K	8.0 Ref.	203.2 Ref.
L	0.5 Max.	12.7 Max.
M	0.33 Ref.	8.38 Ref.

**5** PAAATA200616, PAAATA200618, PAAATA201216, PAAATA201218, PAAATA201616, PAAATA201618, PDAARA200636, PDAARA201236, PDAARA201636, PDAATARA0618, PDAATARA1218, PDAATARA1618, PDAATA200618, PDAATA201218, PDAATA201618



Dim.	Inches	Millimeters
A	21.06 Max.	534.92 Max.
B	10.0 Ref.	254.0 Ref.
C	7.89 Max.	200.4 Max.
D	12.69 Max.	322.33 Max.
E	1.0	25.4
F	1.75	44.45
G	0.81	20.57
H	5.50	139.7
J	0.58 Ref.	14.73 Ref.
K	0.65 Ref.	16.51 Ref.

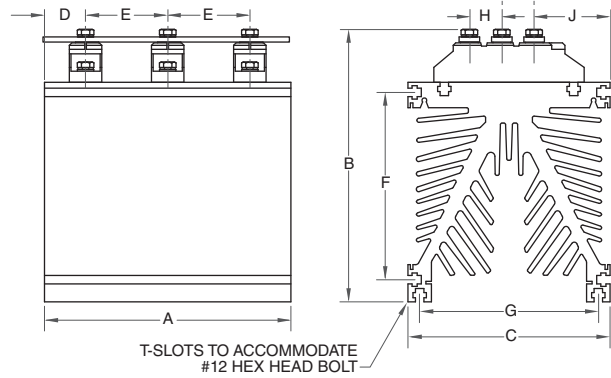
**6** PAB1CD430890, PAB1CD431290, PAB1CD431690



Dim.	Inches	Millimeters
A	6.0	152.5
B	7.0 Max.	177.83 Max.
C	4.92 Max.	125.0 Max.
D	1.0	25.4
E	2.0	50.8
F	4.53	115.06
G	4.33	109.98
H	0.79	20.07
J	1.5	31.1

7

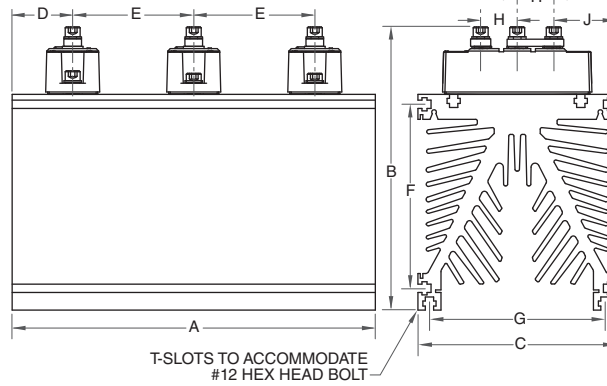
PDB1CD410899, PDB1CD411299, PDB1CD411699,  
PDB1CD420890, PDB1CD421290, PDB1CD421690,  
PDB1CD430890, PDB1CD431290, PDB1CD431690



Dim.	Inches	Millimeters
A	6.0	152.5
B	7.0 Max.	177.83 Max.
C	4.92 Max.	125.0 Max.
D	1.0	25.4
E	2.0	50.8
F	4.53	115.06
G	4.33	109.98
H	0.79	20.07
J	1.5	31.1

8

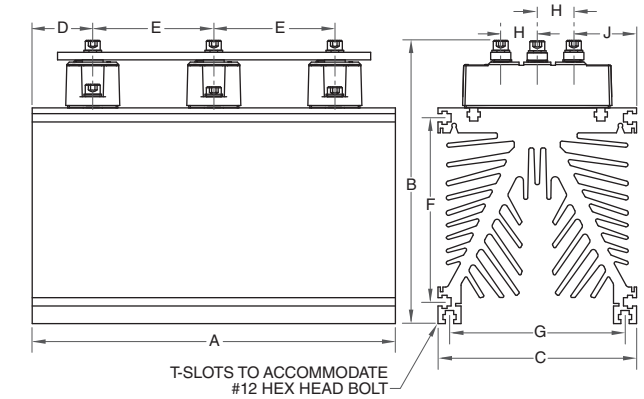
PAB2CD630815, PAB2CD631215, PAB2CD631615



Dim.	Inches	Millimeters
A	9.0	228.6
B	7.0 Max.	177.83 Max.
C	4.92 Max.	125.0 Max.
D	1.5	31.1
E	3.0	76.2
F	4.53	115.06
G	4.33	109.98
H	0.91	23.11
J	1.56	39.62

9

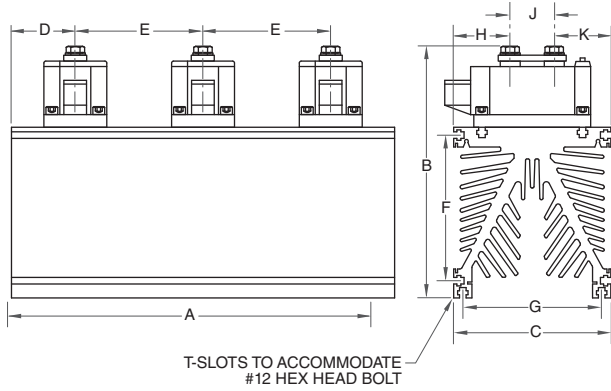
PDB2CD610816, PDB2CD611216, PDB2CD611616,  
PDB2CD620815, PDB2CD621215, PDB2CD621615,  
PDB2CD630815, PDB2CD631215, PDB2CD631615



Dim.	Inches	Millimeters
A	9.0	228.6
B	7.0 Max.	177.83 Max.
C	4.92 Max.	125.0 Max.
D	1.5	31.1
E	3.0	76.2
F	4.53	115.06
G	4.33	109.98
H	0.91	23.11
J	1.56	39.62

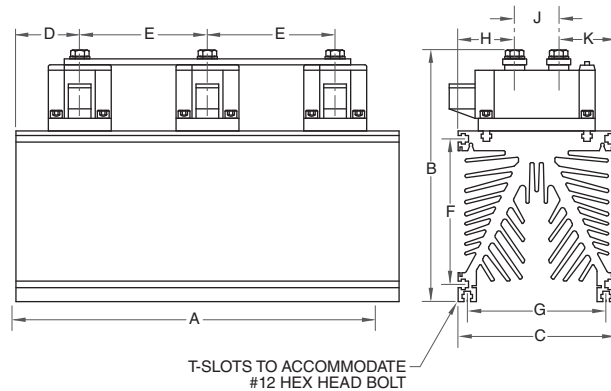


**10** PAB3ND430825, PAB3ND431225, PAB3ND431625



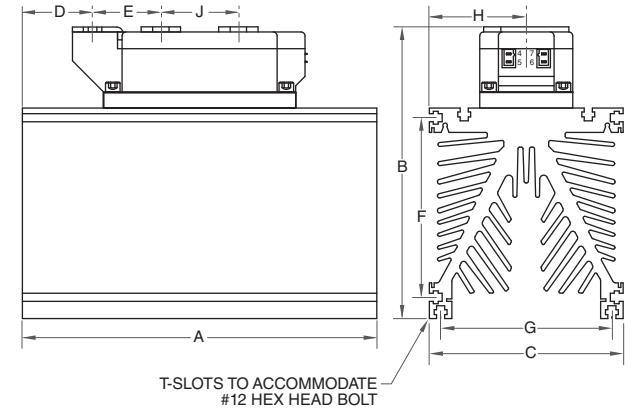
Dim.	Inches	Millimeters
A	12.0	304.8
B	8.0 Max.	203.2 Max.
C	4.92 Max.	125.0 Max.
D	2.0	50.8
E	4.0	101.6
F	4.53	115.06
G	4.33	109.98
H	1.7	43.18
J	1.38	35.05
K	1.77	44.96

**11** PDB3ND410826, PDB3ND411226, PDB3ND411626,  
PDB3ND420825, PDB3ND421225, PDB3ND421625,  
PDB3ND430625, PDB3ND431225, PDB3ND431625



Dim.	Inches	Millimeters
A	12.0	304.8
B	8.0 Max.	203.2 Max.
C	4.92 Max.	125.0 Max.
D	2.0	50.8
E	4.0	101.6
F	4.53	115.06
G	4.33	109.98
H	1.7	43.18
J	1.38	35.05
K	1.77	44.96

**12** PAB2LD430850, PAB2LD431250, PAB2LD431650,  
PDB2LD410860, PDB2LD411260, PDB2LD411660,  
PDB2LD420850, PDB2LD421250, PDB2LD421650,  
PDB2LD430850, PDB2LD431250, PDB2LD431650



Dim.	Inches	Millimeters
A	9.0	228.6
B	8.0 Max.	203.2 Max.
C	4.92 Max.	125.0 Max.
D	1.78	45.21
E	1.73	43.94
F	4.53	115.06
G	4.33	109.98
H	2.46	62.48
J	1.97	50.04

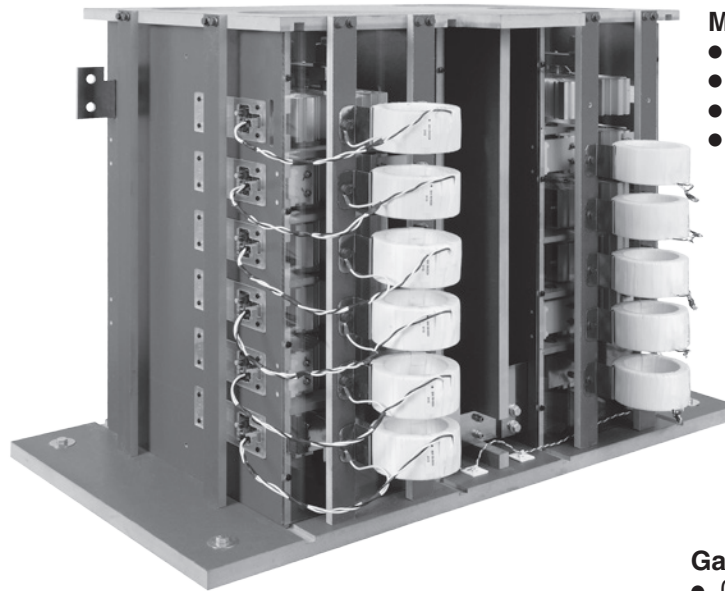
# MEDIUM VOLTAGE SCR & RECTIFIER ASSEMBLIES

*Powerex is your source for Medium Voltage SCR and rectifier assemblies in a wide range of ratings and configurations.*

## Applications Include:

- Motor Controls - Medium Voltage Converters
  - SCR power bridges for solid state starters
  - SCR based input rectifiers
  - Crowbar systems for motor drives
- Wind Power (Alternative Energy)
  - Converters available as diodes or SCRs
  - static var compensation
- Resistance Heating
- Inductive Heating - Input Rectifiers
- Load Commutated Inverter Power Section for Retrofits
- Uninterruptible Power Supplies - SCR Transfer Switches and Input Rectifiers
- Mining - SCR Power Bridges, Solid State Starters and Input Rectifiers
- Power Distribution - SCR Based Switches
- Thyristor Controlled Reactors

Powerex complements its rectifier products with IGBT assemblies for inverters, converters, choppers, and full or half wave bridge units. These assemblies can also be combined to provide a system-wide solution.



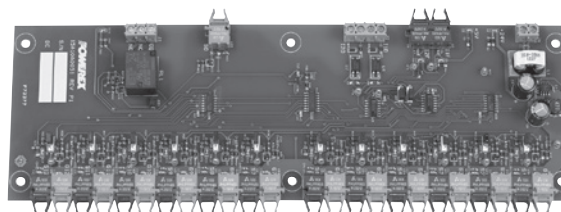
## MV SCR Power Stack

- 5MW, 24kV SCR based power section
- Designed for low partial discharge (low corona)
- Scalable to other voltage and current ratings
- Air cooled, modular design



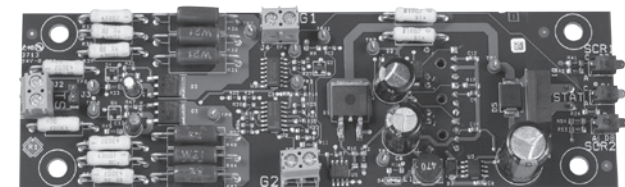
## Gate Power Supply

- Current loop supplies power to all the SCR levels
- Provides excellent voltage isolation between SCRs and controls and also provides high BIL capability



## Fiber Optic Fan Out Board

- Receives SCR gate commands from external controller
- Fans out command to multiple level of SCRs
- Receives and processes feedback from gate boards



## MV Fiber Optic SCR Gate Drive Board

- Receives and conditions power from an isolated loop power supply current transformer, allowing for high voltage isolation
- Provides fiber optic triggering of gates
- Provides fiber optic status feedback for temperature and power supply health monitoring

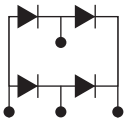
# How to Select the Proper Assembly for Your Needs

Areas to consider when selecting the proper assembly.

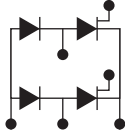
**Application:** \_\_\_\_\_

**Type of Circuit:**

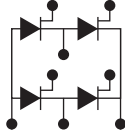
Single-Phase Bridge



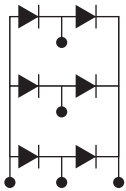
Single-Phase Half Controlled Bridge



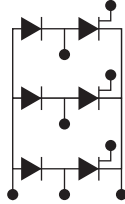
Single-Phase Full Controlled Bridge



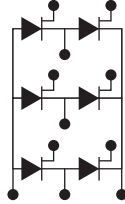
Three-Phase Bridge



Three-Phase Half Controlled Bridge



Three-Phase Full Controlled Bridge



**Power Topology:** \_\_\_\_\_

**Electrical parameters:**

- Source MVA: \_\_\_\_\_
- Maximum Continuous Output Current (Amps): \_\_\_\_\_
- Maximum Overload:
  - Output DC Current (Amps): \_\_\_\_\_
  - Overload Duration (Sec): \_\_\_\_\_
- Input Voltage (Volts) \_\_\_\_\_  
(VAC-RMS for Single Phase, VAC-RMS line-to-line for Three-Phase)
- Line Frequency:
  - 50 Hertz or  60 Hertz Other \_\_\_\_\_ Hz
- Distance to Source: \_\_\_\_\_
- Distance to Load: \_\_\_\_\_

**Environmental Parameters:**

- Maximum Ambient Temperature (°C): \_\_\_\_\_
- Humidity (0-95% Non-Condensing): \_\_\_\_\_
- Maximum Altitude (Feet Above Sea Level): \_\_\_\_\_ ft

Please email this information to our IPP Department at [ipp@pwr.com](mailto:ipp@pwr.com).  
A Powerex engineer will review the information and contact you to discuss your assembly needs.

# IGBT ASSEMBLIES

A leading supplier of IGBTs and other high power semiconductor applications, Powerex also produces POW-R-PAKs™, configurable IGBT power assemblies.

## POW-R-PAK-GenII™

Powerex part numbers beginning with the prefix “NX” denote a GenII version of POW-R-PAK, which are recommended for new designs.

### Applications Include:

- Distributed Power Generation
- Energy Storage
- Industrial Power Supplies
- Motor Drives
- Power Quality

### Basic Circuit Configurations:

- Chopper
- Half-Bridge
- H-Bridge
- Three-Phase Bridge

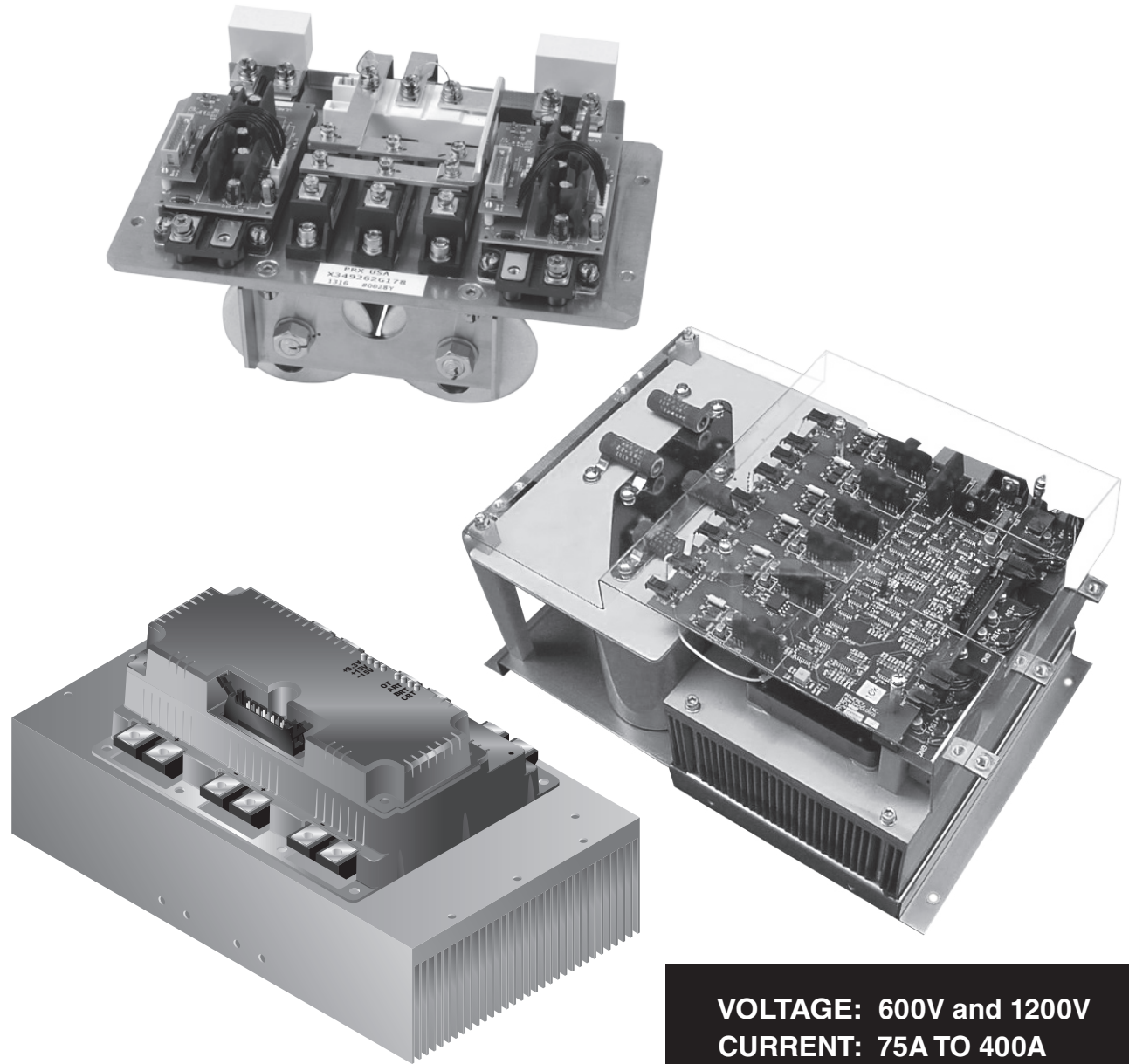
### Additional Available Options:

- Application Specific
- Blower/Fan
- Capacitor Banks

*Note: Custom IGBT Assemblies Also Available*

### TABLE OF CONTENTS

Numbering System .....	K-2
600V & 1200V 3-Phase Assemblies .....	K-4
600V & 1200V H-Bridge Assemblies .....	K-5
Outline Drawings .....	K-6



**VOLTAGE: 600V and 1200V**  
**CURRENT: 75A TO 400A**

## IGBT NX Series IGBT Assembly Overview

To help determine the proper IGBT assembly for your application, the following information is needed.

### (1) Type NX Series IGBTs:

Air Cooled – Is a fan required?

Liquid Cooled – Type of liquid cooling: water or glycol.

### (2) Power:

Single-Phase

Input (VDC) \_\_\_\_\_

Output Freq. \_\_\_\_\_

Output (VAC) \_\_\_\_\_

Output Current (AAC) \_\_\_\_\_

Three-Phase

Input (VDC) \_\_\_\_\_

Output Freq. \_\_\_\_\_

Output (VAC) \_\_\_\_\_

Output Current (AAC) \_\_\_\_\_

### (3) Ambient Temperature (°C)

### (4) Switching Frequency (kHz)

### (5) Circuit Configuration:

Chopper H-Bridge

Half-Bridge Three-Phase Bridge

### (6) Options:

Blower / Fan

Electrolytic Capacitors at 50 µfd/Amp

Film Capacitors at 20 µfd/Amp

No Cap Bank

Application Specific

### (7) Assembly:

Prototype

Production - Estimated Annual Volume

Please email this information to our IPP Department at [ipp@pwr.com](mailto:ipp@pwr.com).

A Powerex engineer will review the information and contact you to discuss your assembly needs.

## NX Numbering System\*

NXD1K2A200A50-XX is a 200KVA IGBT air cooled half-bridge assembly using IGBTs rated at 1200 Volts AC.

NX D 1K2 A 200 A 50 – XX

(1) (2) (3)(4)(5) (6) (7)(8)(9) (10) (11)(12) (13)(14)

### (1) Type:

NX = NX Series IPP Assembly

### (7)(8)(9) KVA Rating

001 to 999

1K0 to 9K2

### (2) Circuit Configuration:

H = Single Brake

D = Half-Bridge

B = H-Bridge

T = Three-Phase Bridge

R = Three-Phase + Brake

E = Chopper

i.e. 200 = 200KVA

i.e. 1K2 = 1200KVA

### (10) Thermal Management

A = Air Cooled

W = Liquid Cooled

### (3)(4)(5) Voltage

001 to 999

1K0 to 9K9

i.e. 600 = 600V

i.e. 1K2 = 1200V

i.e. 1K7 = 1700V

### (11)(12) Ambient Temperature

STD 40°C

Options 50°C

>50°C Consult Factory

### (13)(14) Options

01 to 99

### (6) Voltage Type

A = AC (Active Front End)

D = DC

\*Powerex is in the process of launching Gen II POW-R-PAK™ IGBT Assemblies. Powerex part numbers beginning with the prefix "NX" denote a Gen II version of POW-R-PAK, which are recommended for new designs.

## IGBT PP Series IGBT Assembly Overview

To help determine the proper IGBT assembly for your application, the following information is needed.

### (1) Type PP Series IGBTs:

Air Cooled – Is a fan required?

Liquid Cooled – Type of liquid cooling: water or glycol.

### (2) Power:

Single-Phase

Input (VDC) \_\_\_\_\_

Output Freq. \_\_\_\_\_

Output (VAC) \_\_\_\_\_

Output Current (AAC) \_\_\_\_\_

Three-Phase

Input (VDC) \_\_\_\_\_

Output Freq. \_\_\_\_\_

Output (VAC) \_\_\_\_\_

Output Current (AAC) \_\_\_\_\_

### (3) Ambient Temperature (°C)

### (4) Switching Frequency (kHz)

### (5) Circuit Configuration:

Chopper H-Bridge

Half-Bridge Three-Phase Bridge

### (6) Options:

Blower / Fan

Electrolytic Capacitors at 50 µfd/Amp

Film Capacitors at 20 µfd/Amp

Application Specific

### (7) Assembly:

Prototype

Production - Estimated Annual Volume

Please email this information to our IPP Department at [ipp@pwr.com](mailto:ipp@pwr.com).

A Powerex engineer will review the information and contact you to discuss your assembly needs.

## PP Numbering System

PP400B060-ND is a 400A IGBT H-Bridge assembly using IGBTs rated at 600 Volts AC.

PP 400 B 060 – ND

(1) (2) (3) (4) (5)

#### (1) Type:

PP = PP Series IPP Assembly

#### (4) Voltage

060 = 600V

120 = 1200V

#### (2) Amperes

#### (5) Factory Designation

#### (3) Circuit Configuration:

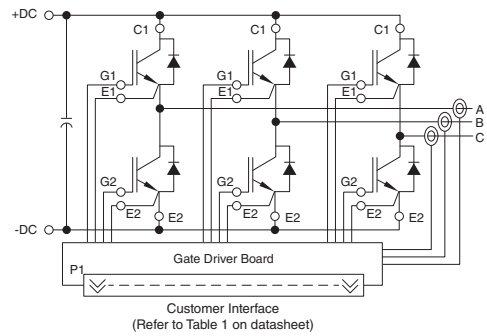
B = H-Bridge

T = 3-Phase

## 600V and 1200V 3-Phase IGBT Assemblies,

(Refer to device datasheets at [www.pwr.com](http://www.pwr.com) for test conditions.)

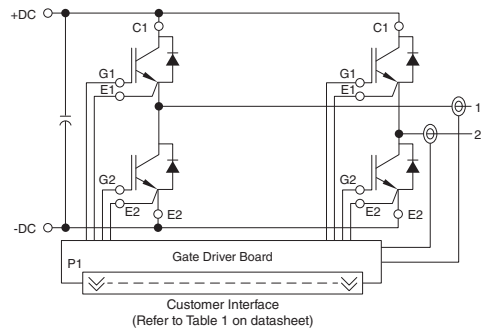
MAXIMUM RATINGS (IGBT Inverter Sector)				ELECTRICAL CHARACTERISTICS (IGBT Part)									THERMAL CHARACTERISTICS			Outline Drawings	
Type	V <sub>CE(S)</sub> Volts	I <sub>C</sub> Amperes	V <sub>RMS</sub> Isolation Volts	Typ. V <sub>CE(SAT)</sub> Volts	V <sub>EC</sub> Volts	I <sub>CE(S)</sub> mA	V <sub>CC(Prot)</sub> Volts	Inductive Load Switching Times				R <sub>th(c-f)</sub> °C/W	IGBT R <sub>th(j-c)</sub> °C/W	DIODES R <sub>th(j-c)</sub> °C/W	Weight lbs		
								t <sub>d(on)</sub> Ns	t <sub>r</sub> Ns	t <sub>d(off)</sub> Ns	t <sub>f(off)</sub> Ns						
PP75T120-ND	1200	75	2500	2.4	3.8	1.0	900	100	50	400	300	0.19	0.22	0.29	24.4	1	K-6
PP150T120-ND	1200	150	2500	2.1	3.8	1.0	900	130	100	450	350	0.022	0.13	0.23	24.4	1	K-6
PP200T060-ND	600	200	2500	1.7	2.6	1.0	900	120	120	300	300	0.07	0.13	0.24	24.4	1	K-6
PP200T120-ND	1200	200	2500	3.0	3.8	1.0	900	130	100	450	350	0.022	0.093	0.17	24.4	1	K-6
PP300T060-ND	600	300	2500	3.0	3.8	1.0	400	550	190	600	350	0.02	0.066	0.12	24.4	1	K-6
PP300T120-ND	1200	300	2500	2.4	3.2	1.0	800	300	80	500	300	0.02	0.05	0.08	33.7	2	K-6



## 600V and 1200V H-Bridge IGBT Assemblies,

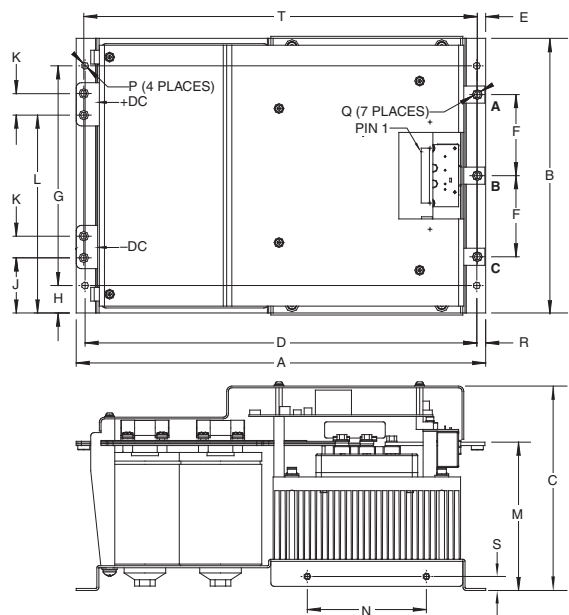
(Refer to device datasheets at [www.pwr.com](http://www.pwr.com) for test conditions.)

MAXIMUM RATINGS (IGBT Inverter Sector)				ELECTRICAL CHARACTERISTICS (IGBT Part)									THERMAL CHARACTERISTICS			Outline Drawings	
Type	V <sub>CE(S)</sub> Volts	I <sub>C</sub> Amperes	V <sub>RMS</sub> Isolation Volts	Typ. V <sub>CE(SAT)</sub> Volts	V <sub>EC</sub> Volts	I <sub>CES</sub> mA	V <sub>CC(Prot)</sub> Volts	Inductive Load Switching Times				R <sub>th(c-f)</sub> °C/W	IGBT R <sub>th(j-c)</sub> °C/W	DIODES R <sub>th(j-c)</sub> °C/W	Weight lbs		
								t <sub>d(on)</sub> Ns	t <sub>r</sub> Ns	t <sub>d(off)</sub> Ns	t <sub>f(off)</sub> Ns						
PP100B120-ND	1200	100	2500	2.1	3.8	1.0	900	100	70	400	350	0.022	0.19	0.34	23	3	K-6
PP150B120-ND	1200	150	2500	2.1	3.8	1.0	900	120	120	300	300	0.022	0.13	0.23	23	3	K-6
PP200B120-ND	1200	200	2500	3.0	3.8	1.0	900	130	100	450	350	0.022	0.093	0.17	23	3	K-6
PP400B060-ND	600	400	2500	3.0	3.8	1.0	400	550	180	600	350	0.02	0.046	0.085	32	4	K-7

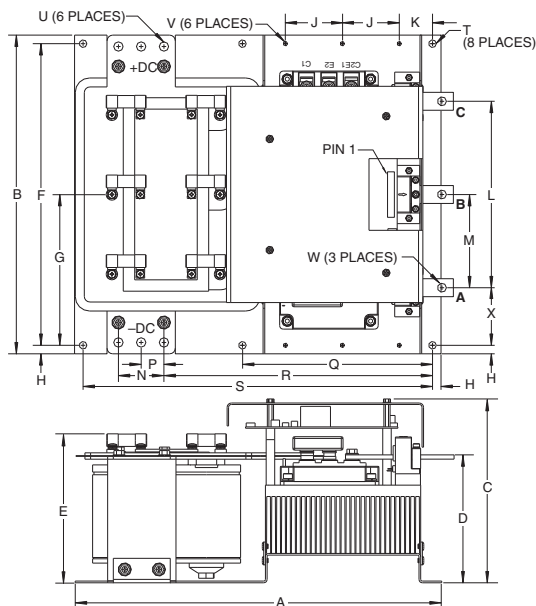




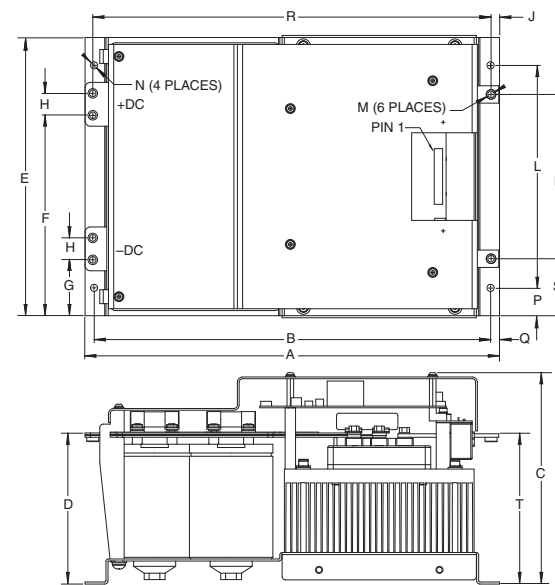
**1** PP75T120-ND, PP150T120-ND, PP200T060-ND,  
PP200T120-ND, PP300T060-ND



**2** PP300T120-ND



**3** PP100B120-ND, PP150B120-ND, PP200B120-ND



Dim.	Inches	Millimeters
A	14.9	378.4
B	10.15	257.8
C	7.4	193.0
D	14.25	362.0
E	0.3	7.7
F	2.95	75.0
G	8.0	203.2
H	1.0	25.4
J	2.01	51.0

Dim.	Inches	Millimeters
K	0.79	20.0
L	7.20	183.0
M	5.4	137.2
N	4.33	110.0
P	0.256 Dia.	6.5 Dia.
Q	M6 Metric	M6
R	0.32	8.2
S	0.51	12.9
T	14.32	363.6

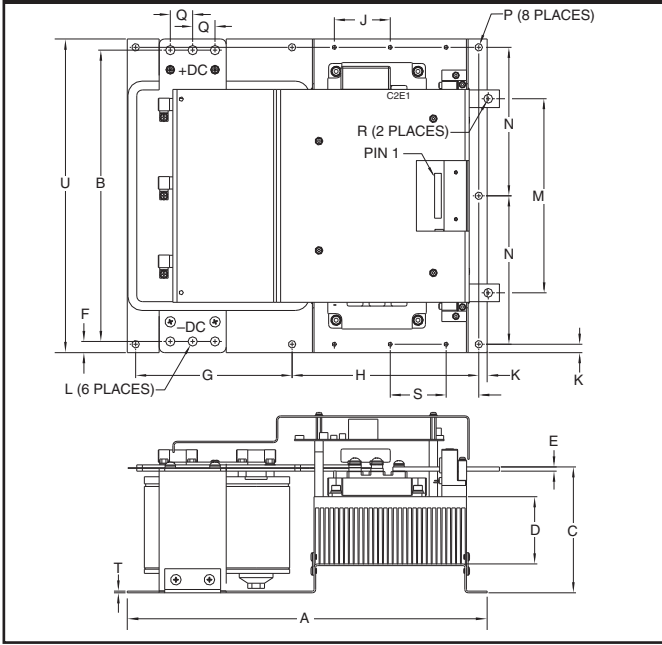
Dim.	Inches	Millimeters
A	16.1	408.9
B	14.0	355.6
C	8.1	205.1
D	5.62	142.7
E	6.54	166.1
F	13.25	336.6
G	6.63	168.3
H	0.38	9.5
J	2.5	63.5
K	1.46	37.1
L	8.19	208.0

Dim.	Inches	Millimeters
M	4.09	104.0
N	2.0	50.8
P	1.0	25.4
Q	8.35	212.09
R	11.8	299.7
S	15.35	389.9
T	0.335 Dia.	8.5 Dia.
U	0.413 Dia.	10.5 Dia.
V	M5 Metric	M5
W	0.394 Dia.	10.0 Dia.
X	2.53	64.3

Dim.	Inches	Millimeters
A	14.9	378.4
B	14.25	362.0
C	7.6	193.0
D	5.43	138.0
E	10.15	257.8
F	7.2	183.0
G	2.01	51.0
H	0.79	20.0
J	0.3	7.7

Dim.	Inches	Millimeters
K	5.91	150.0
L	8.0	203.2
M	M6 Metric	M6
N	0.256 Dia.	6.5 Dia.
P	1.0	25.4
Q	0.32	8.2
R	14.32	363.6
S	2.05	52.0
T	5.4	137.1

# 4 PP400B060-ND



Dim.	Inches	Millimeters	Dim.	Inches	Millimeters
A	16.1	408.9	L	0.41 Dia.	10.5 Dia.
B	13.0	330.2	M	8.66	220.0
C	5.62	142.6	N	6.63	168.3
D	3.0	76.2	P	0.33 Dia.	8.5 Dia.
E	0.19	4.8	Q	1.0	25.4
F	0.5	12.7	R	0.39 Dia.	10.0 Dia.
G	7.0	177.8	S	1.46	37.1
H	8.35	212.1	T	0.07	1.9
J	2.5	63.5	U	14.0	355.6
K	0.38	9.5			

# CUSTOM MODULES (Commercial / Moisture Resistant / Hermetic)

## Capabilities:

Customers looking for application specific custom power modules benefit from Powerex's years of experience in chip manufacturing and design / engineering. Powerex custom power modules employ performance proven features. Soldered-down and wire bonding fabrication and compression bonded encapsulation (CBE) of SCR / Diode elements offer increased switching speeds, lower losses, more efficient cooling and higher power handling capabilities.

## Reliability / Qualification Testing:

Reliability and qualification testing can be performed in accordance to military specifications, including Group A, B and C and specific customer requirements.

## Features:

- Different Circuit Configurations (i.e. Common Emitter, Chopper)
- Different Termination Styles (i.e. Thicker Bus Bars, D-sub Connectors, Press On Pins, etc.)
- Extended Temperature Range, -55°C to 200°C
- Hermetic Modules
- High Voltage Isolation
- Integrated Heatsinks – Both Air and Liquid Cooled by Eliminating the Baseplate
- Larger Free-wheel Diodes
- Low Module Weight
- Moisture Resistance
- Over-current Shutdown
- Package Height, Width and Length
- Temperature and Current Sense

## Substrates:

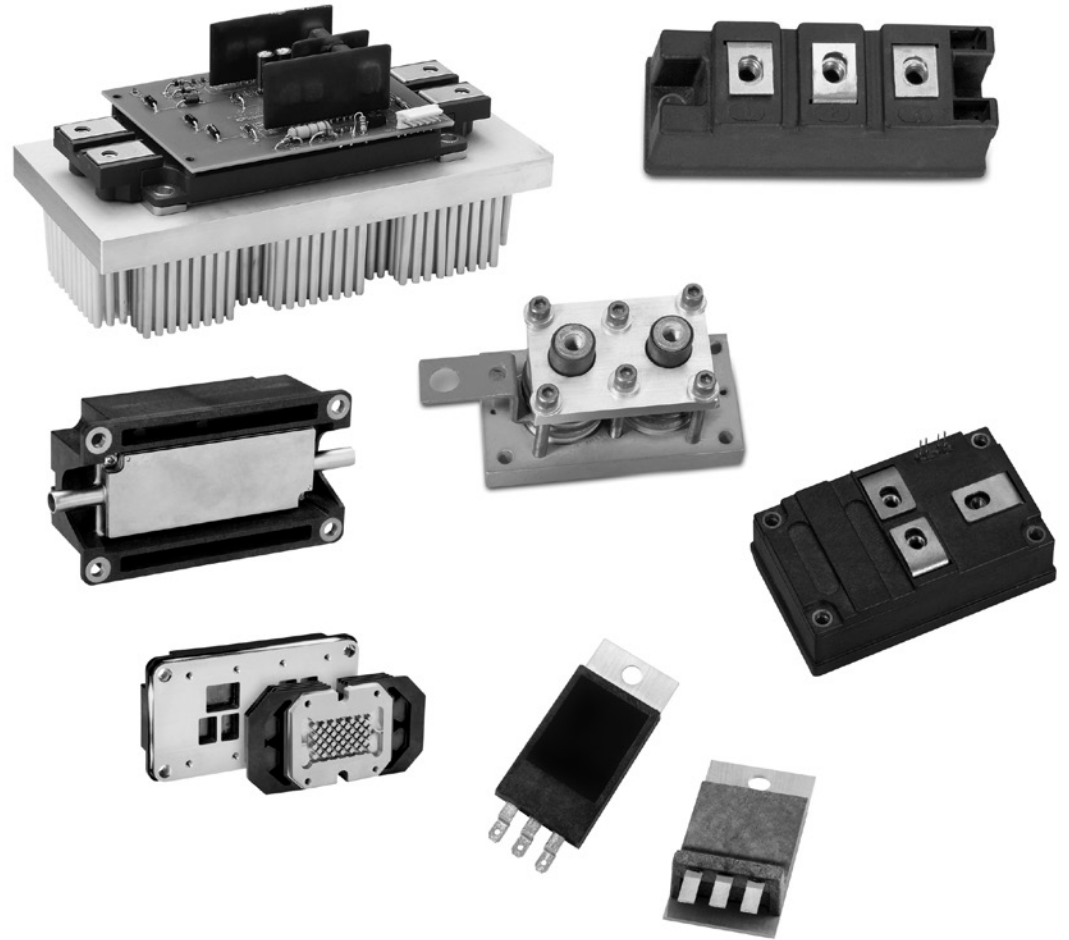
- Alumina
- Aluminum Nitride
- BeO
- IMS

## Die Technology:

- Diode
- FR Diode
- GTO
- HVIGBT
- IGBT
- MOSFET
- SCR
- SiC Diode
- SiC MOSFET

## Packages:

- Custom Development for Both Plastic and Hermetic Packages
- Picture Frame
- Standard IGBT Cases



**VOLTAGE: 30V TO 15,000V**  
**CURRENT: 50A TO 1600A**

## For more information:

visit: <http://www.pwr.com/summary/custom-power-modules.aspx>

email: [globalsales@pwr.com](mailto:globalsales@pwr.com)

phone: 724-925-7272, Option 3 (Applications Engineering Assistance)

DC-DC  
Converters

Gate Drivers  
& IPM  
Interface

Custom  
Modules

IGBT  
Assemblies

Assemblies

Fast Recovery  
Diode Modules

Thyristor &  
Diode  
Modules

Discrete  
Rectifiers

Discrete  
Thyristors

DIPIPM

IPMs

MOSFET  
Modules

Hybrid  
& SiC  
Modules

IGBTs

# GATE DRIVERS & IPM INTERFACE

## Applications Include:

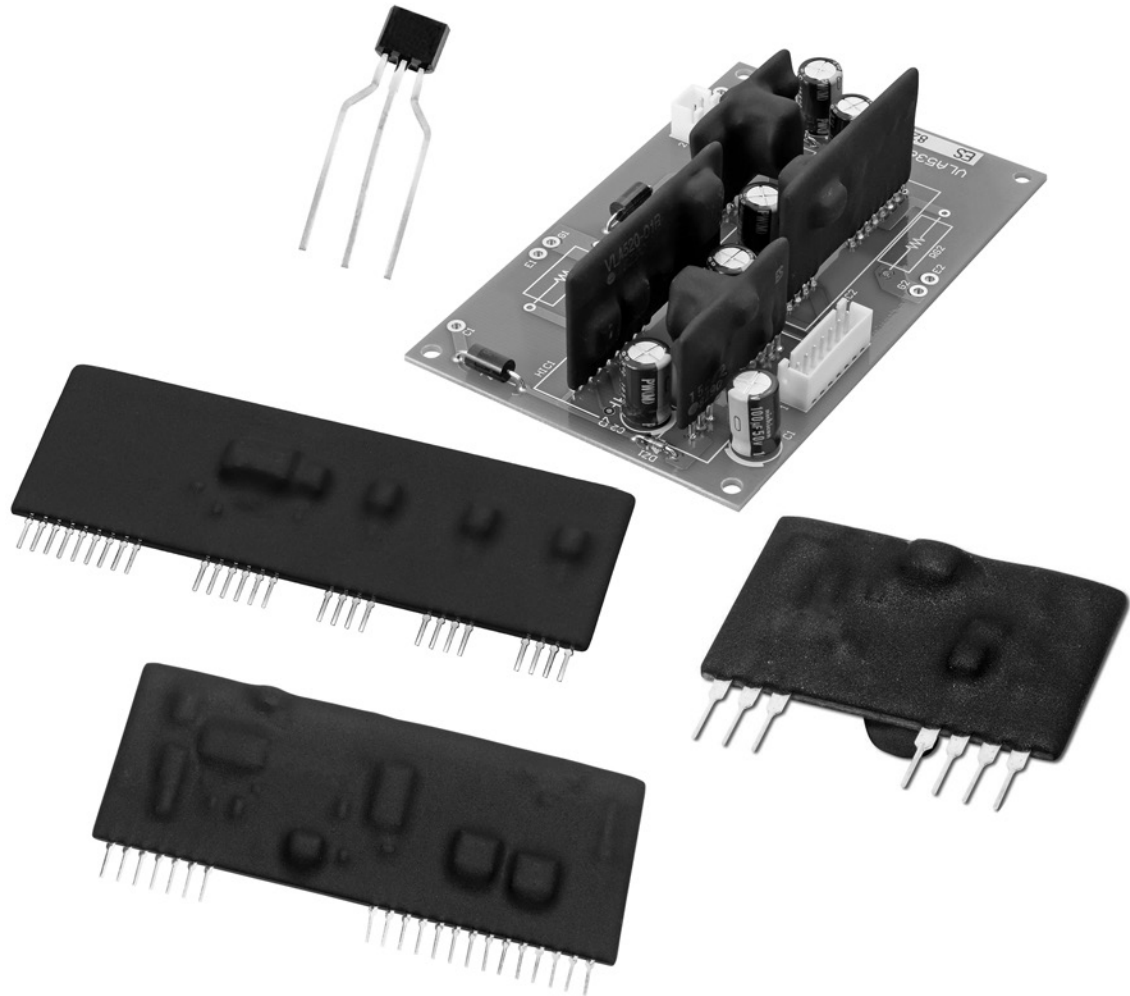
- IGBT Gate Driver Development Kit
- TRIAC Trigger
- IPM Interface

## Packages:

- DIP
- PCB
- SIP
- SMT/SOP
- TO-92S

## TABLE OF CONTENTS

IGBT Gate Drivers .....	M-2
IGBT Gate Driver Development Kits .....	M-4
IPM Interface Board .....	M-4
Silicon Bilateral Switch .....	M-4
Outline Drawings .....	M-5



DC-DC  
Converters

**Gate Drivers  
& IPM  
Interface**

Custom  
Modules

IGBT  
Assemblies

Assemblies

Fast Recovery  
Diode Modules

Thyristor &  
Diode  
Modules

Discrete  
Rectifiers

Discrete  
Thyristors

DIPIM

IPMs

MOSFET  
Modules

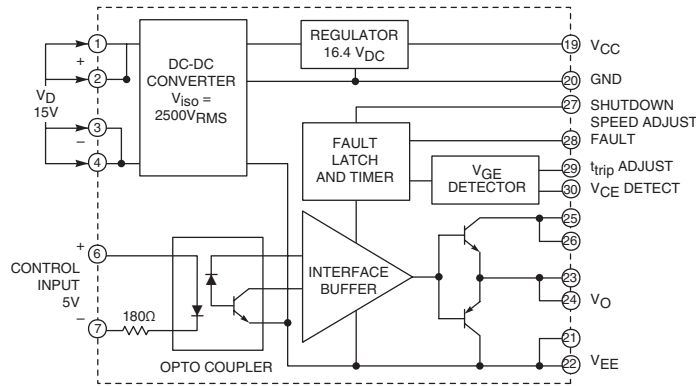
Hybrid  
& SiC  
Modules

IGBTs

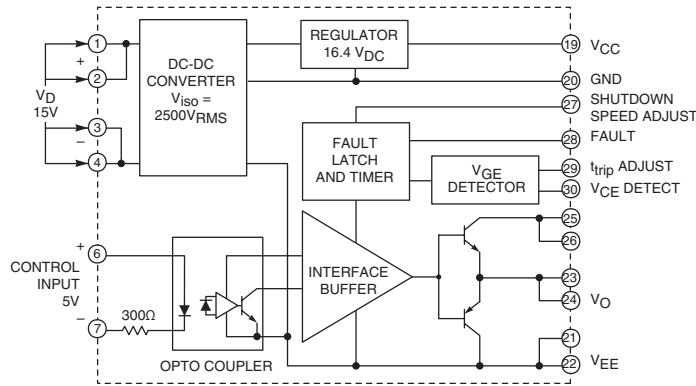
**IGBT Gate Drivers**, (Refer to device datasheets at [www.pwr.com](http://www.pwr.com) for test conditions.)

Type	Integral DC-to-DC Converter	Short-circuit Protection	Soft Shutdown	Input Voltage (Volts)	Output Voltage (Volts)	Output Current (Amperes)	Usable Range	Optimum Range	Outline Drawings Number	Page
M57962K	No	V <sub>CE</sub> Desaturation	Yes			±5	600V, 600A, 1200V 600A, 1700V, 400A	1700V, 400A	10	M-8
M57159L	No	V <sub>CE</sub> Desaturation	Yes				600V, 150A 1200V, 75A	600V, 75A 1200V, 50A	1	M-5
VLA500-01	Yes	V <sub>CE</sub> Desaturation	Yes – Adjustable	15V	+15V/-8V	±12	600V, 800A 1200V, 1400A	600V, 800A 1200V, 1400A	5	M-6
VLA500K-01R	Yes	V <sub>CE</sub> Desaturation	Yes Adjustable	15V	+15V/-8V	±12	1700V, 2400A	1700V, 2400A	6	M-6
VLA502-01	Yes	V <sub>CE</sub> Desaturation	Yes – Adjustable	15V	+15V/-8V	±12	600V and 1200V High Frequency NFH-series Modules		5	M-6
VLA503-01	No	V <sub>CE</sub> Desaturation	Yes			±5	600V, 600A 1200V, 600A	600V, 400A 1200V, 200A	2	M-5
VLA504-01	No	V <sub>CE</sub> Desaturation	Yes			±3	600V, 400A 1200V, 200A	600V, 100A 1200V, 50A	2	M-5
VLA507-01	No	None	No			±3	600V, 200A 1200V, 150A	600V, 200A 1200V, 150A	3	M-5
VLA513-01	No	None	No			±5	600V, 600A 1200V, 400A	600V, 600A 1200V, 400A	4	M-6
VLA536-01R	Yes	V <sub>CE</sub> Desaturation	Yes	15V	+15V/-8V	±5	All 600V and 1200V NX-Series Dual Modules	600V, 600A 1200V, 450A	8	M-7
VLA552-01R	Yes	V <sub>CE</sub> Desaturation	Yes – Adjustable	15V	+15V/-8V	±24	1200V, 2500A 1700V, 1800A	All MPD and New MPD Modules 1200V, 2500A 1700V, 1800A	9	M-7
VLA553-01R	Yes	V <sub>CE</sub> Desaturation	Yes – Adjustable	15V	+15V/-8V	±24	1200V, 2500A 1700V, 1800A	All MPD and New MPD Modules 1200V, 2500A 1700V, 1800A	11	M-8
VLA553-02R	Yes	V <sub>CE</sub> Desaturation	Yes – Adjustable	15V	+15V/-8V	±24	1200V, 2500A 1700V, 1800A	All MPD and New MPD Modules 1200V, 2500A 1700V, 1800A	11	M-8
VLA567-01R	Yes	V <sub>CE</sub> Desaturation	Yes – Adjustable	15V	+15V/-8V	±8	600V, 1000A 1200V, 1000A	600V, 1000A 1200V, 1000A	12	M-8

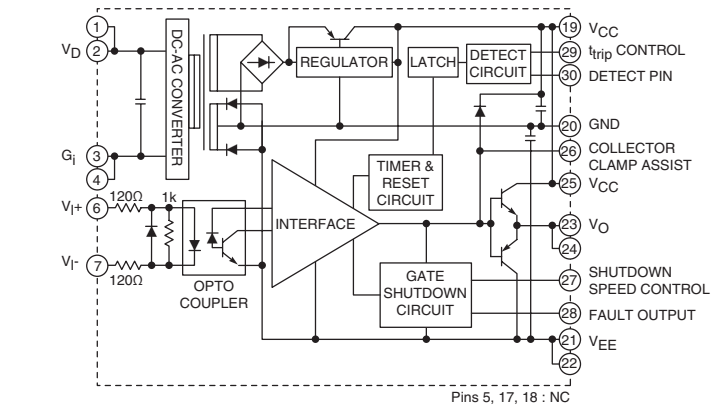
VLA500-01, VLA500K-01R



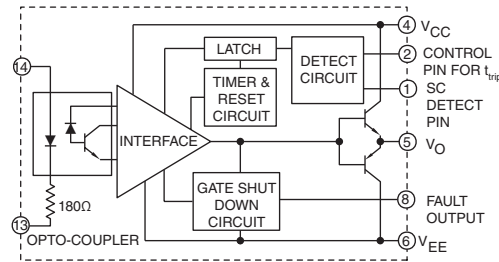
VLA502-01



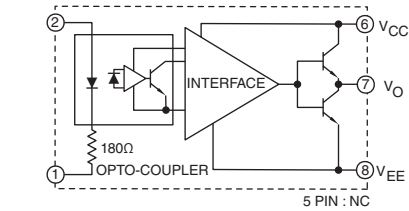
VLA552-01R



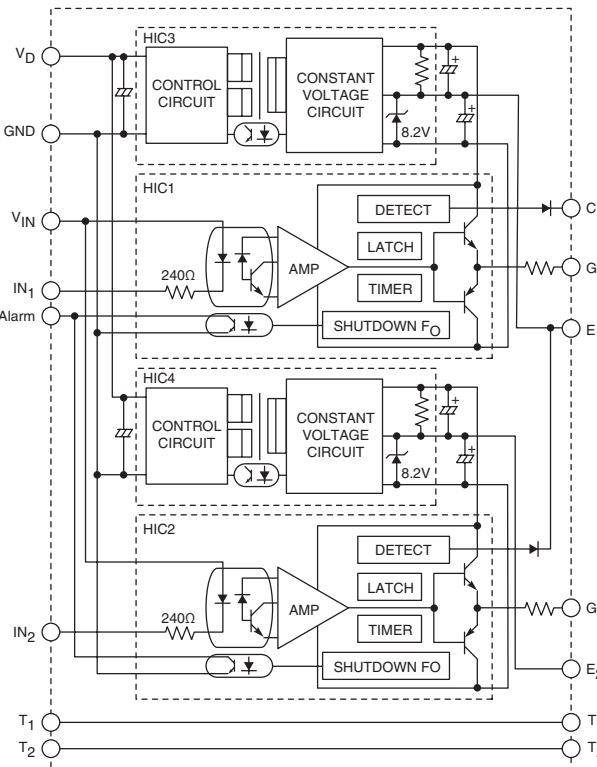
M57159L, M57962K, VLA503-01, VLA504-01



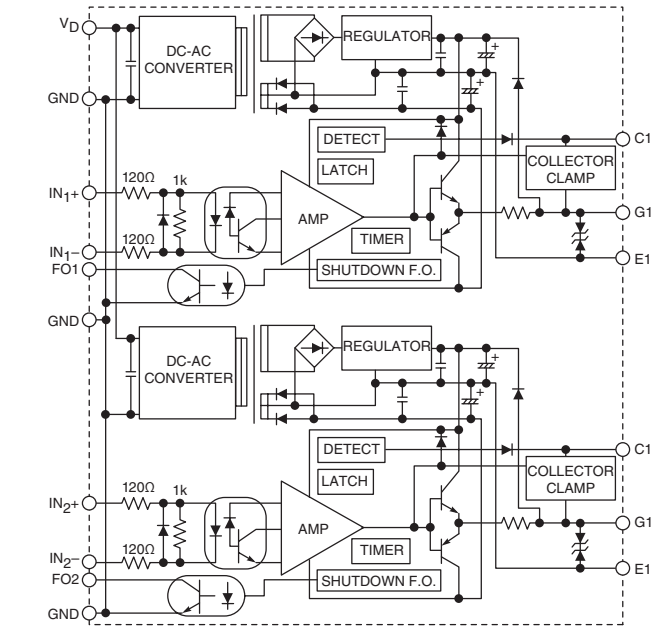
VLA507-01, VLA513-01



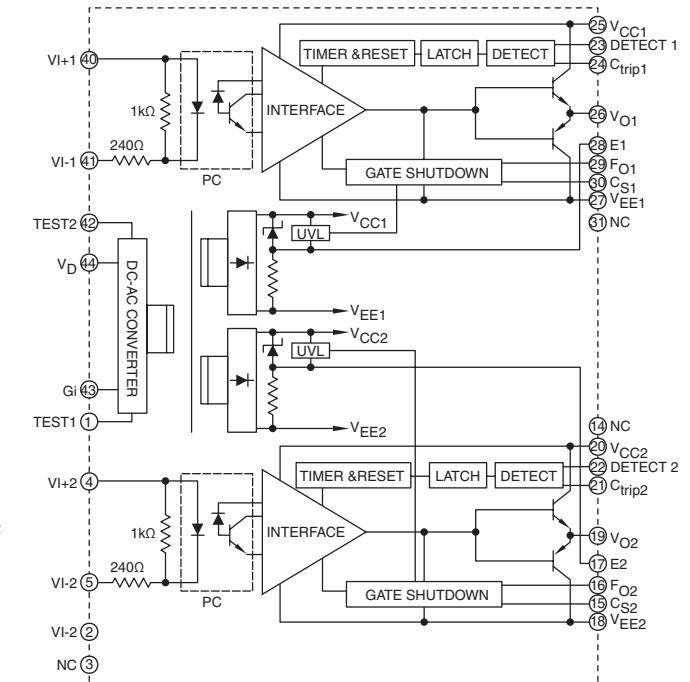
VLA536-01R



VLA553-01R, VLA553-02R



VLA567-01R



## IGBT Gate Driver Development Kits

Part Number	Prototype Board*	Gate Driver Part Number*	Peak Drive Current Amperes	Minimum RG $\Omega$	Desaturation Detection	Typical Module Rating Amperes	Recommended DC-to-DC Converter*
BG2B-1515	BG2B	M57159L-01	$\pm 1.5$	4.2	Yes	Up to 100A	VLA106-15242 (For 15VDC Input)
BG2B-3015	BG2B	VLA504-01	$\pm 3.0$	3.0	Yes	Up to 200A	
BG2B-5015	BG2B	VLA503-01	$\pm 5.0$	2.0	Yes	Up to 600A	VLA106-24242 (For 24VDC Input)
BG2C-3015	BG2C	VLA507	$\pm 3.0$	3.9	No	Up to 200A	
BG2C-5015	BG2C	VLA513	$\pm 5.0$	2.0	No	Up to 600A	
BG2A-NF	BG2A	VLA500-01	$\pm 12.0$	1.0	Yes	Up to 1400A	Included in Gate Driver
BG2A-NFH	BG2A	VLA502-01	$\pm 12.0$	1.0	Yes	Up to 600A NFH Series Devices	
BG2A-K	BG2A	VLA500K	$\pm 12.0$	1.0	Yes	1700V Up to 1000A	Included in Gate Driver
BG2D-5015	BG2D	VLA503-01	$\pm 5.0$	2.0	Yes	Up to 450A NX Series Duals	VLA106-15242
BG2E	BG2E	VLA500-01	$\pm 12.0$	1.0	Yes	Up to 1000A NXL Series Duals	Included in Gate Driver
BG2G-8015	BG2G	VLA567-01R	$\pm 8.0$	2.0	Yes	Up to 1000A	Included in Gate Driver

\*Driver board come with parts noted here and are not assembled.

## Silicon Bilateral Switch,

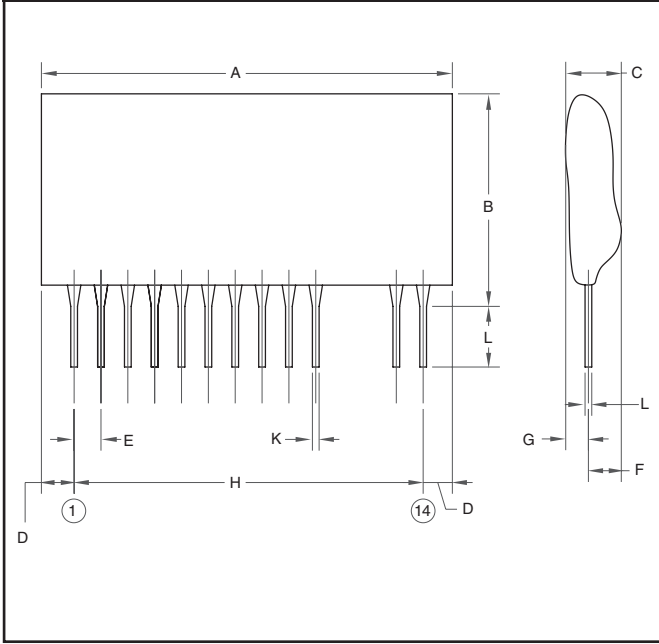
(Refer to device datasheet at [www.pwr.com](http://www.pwr.com) for test conditions.)

ELECTRICAL CHARACTERISTICS										Outline Drawings	
Type	$I_T$ mA	$I_G$ Amperes	$V_S$ VS	$P_T$ mW	$I_S$ $\mu A$	$I_H$ mA	$V_T$ Volts	$I_{GT}$ $\mu A$	$V_{GT}$ $\mu A$	Number	Page
BS08D-T112	175	5	8	450	200	1.5	1.4	10	200	7	M-7

## IPM Interface Board

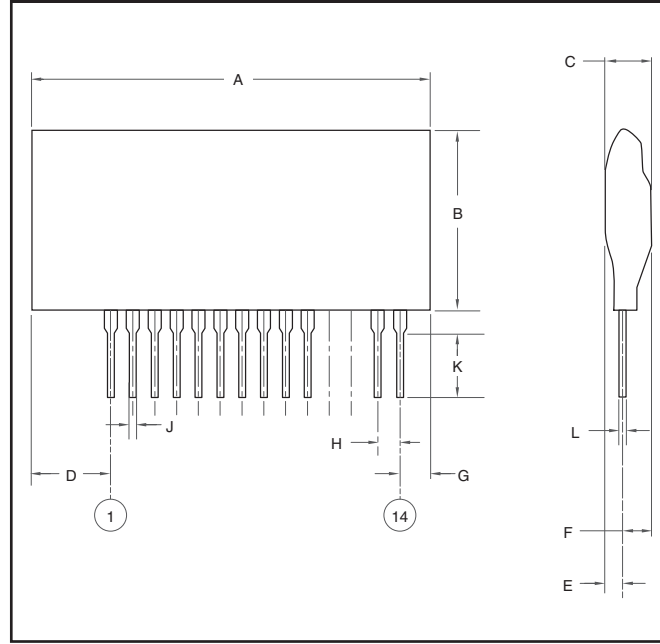
Part Number	Prototype Board	Typical Module Rating Amperes	Recommended DC-to-DC Converter*
BP2B-V	BP2B-V	Up to 800A V1-Series IPM	VLA106-15151

**1** M57159L



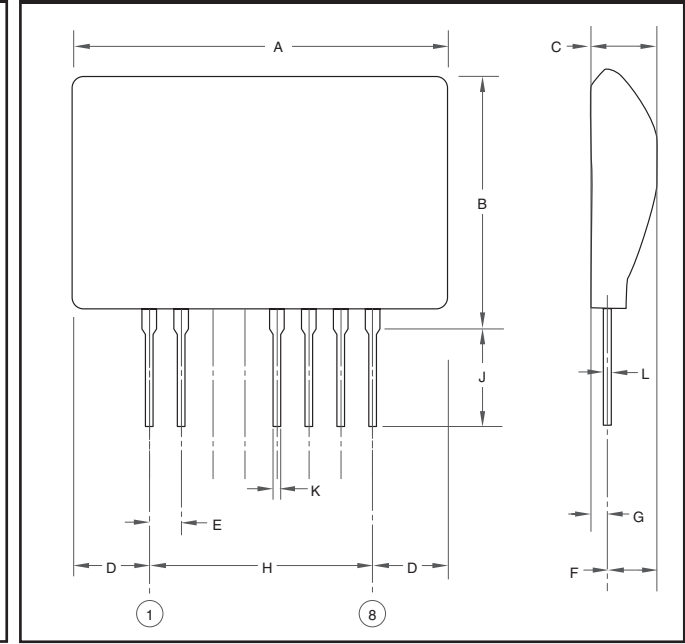
Dim.	Inches	Millimeters
A	1.70 Max.	43.0 Max.
B	0.87 Max.	22.0 Max.
C	0.43 Max.	11.0 Max.
D	0.22 Max.	5.5 Max.
E	0.10	2.54
F	0.34 Max.	8.5 Max.

**2** VLA503-01, VLA504-01



Dim.	Inches	Millimeters
A	2.0 Max.	51.0 Max.
B	1.02 Max.	26.0 Max.
C	0.4 Max.	10.0 Max.
D	0.45 Max.	11.5 Max.
E	0.12 Max.	3.0 Max.
F	0.3 Max.	7.5 Max.

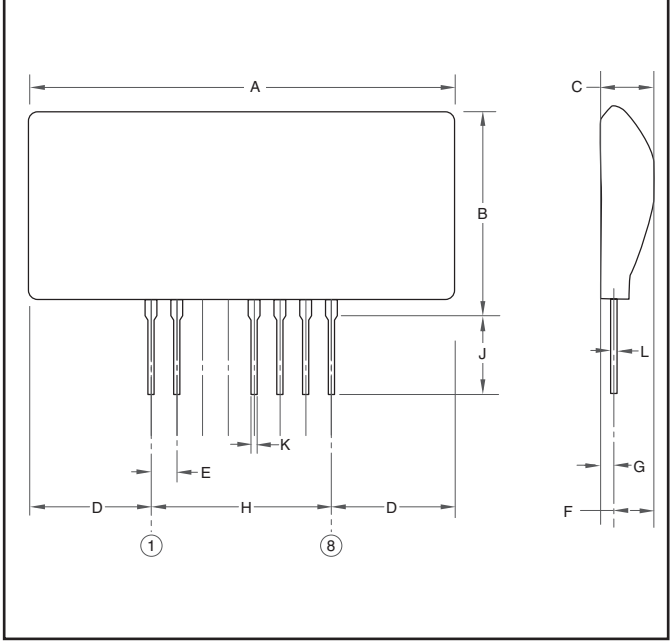
**3** VLA507-01



Dim.	Inches	Millimeters
A	1.18 Max.	30.0 Max.
B	0.79 Max.	20.0 Max.
C	0.28 Max.	7.0 Max.
D	0.24 Max.	6.0 Max.
E	0.10	2.54
F	0.216 Max.	5.5 Max.



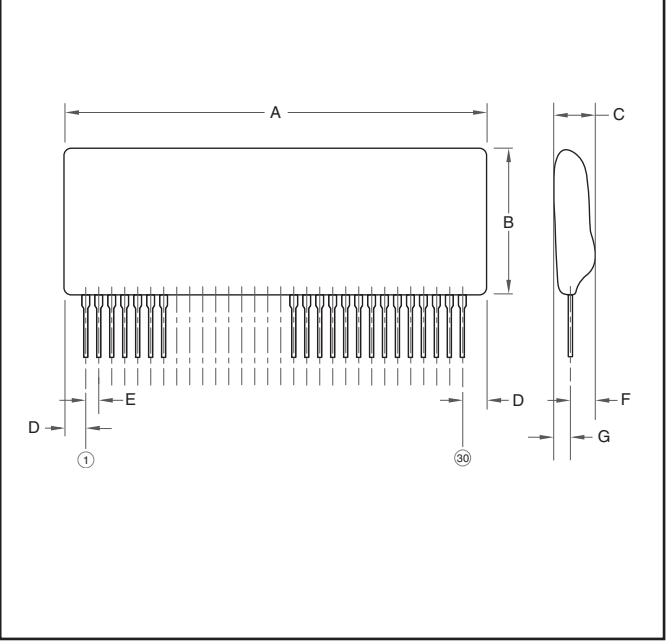
**4** VLA513-01



Dim.	Inches	Millimeters
A	1.85 Max.	47.0 Max.
B	1.063 Max.	27.0 Max.
C	0.28 Max.	7.0 Max.
D	0.59 Max.	15.0 Max.
E	0.10	2.54
F	0.216 Max.	5.5 Max.

Dim.	Inches	Millimeters
G	0.08 Max.	2.0 Max.
H	0.70	17.78
J	0.18±0.06	4.5±1.5
K	0.03	0.75
L	0.02	0.5

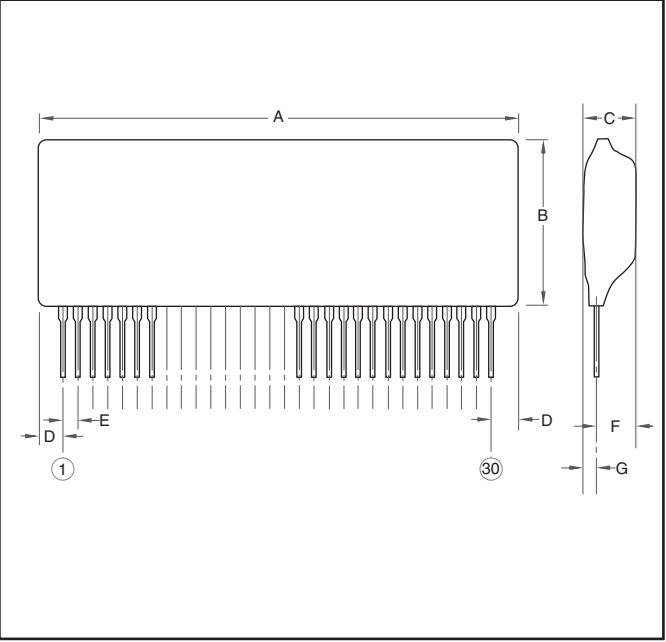
**5** VLA500-01, VLA502-01



Dim.	Inches	Millimeters
A	3.27 Max.	83.0 Max.
B	1.30 Max.	33.0 Max.
C	0.61 Max.	15.5 Max.
D	0.20 Max.	5.0 Max.

Dim.	Inches	Millimeters
E	0.10	2.54
F	0.45 Max.	11.5 Max.
G	0.18 Max.	4.6 Max.

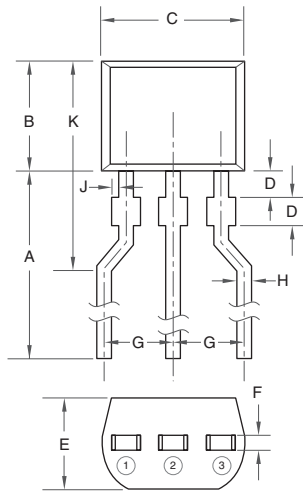
**6** VLA500K-01R



Dim.	Inches	Millimeters
A	3.27 Max.	83.0 Max.
B	1.30 Max.	33.0 Max.
C	0.67 Max.	17.0 Max.
D	0.20 Max.	5.0 Max.

Dim.	Inches	Millimeters
E	0.10	2.54
F	0.45 Max.	11.5 Max.
G	0.24 Max.	6.0 Max.

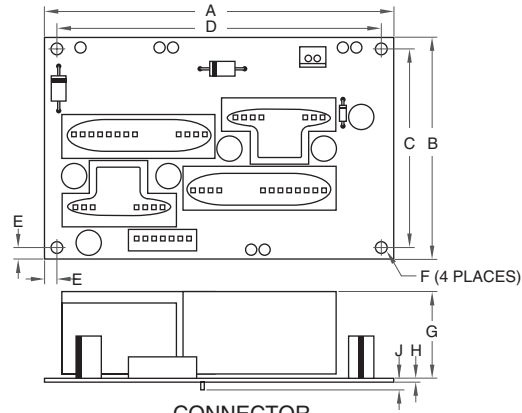
# 7 BS08D-T112



Dim.	Inches	Millimeters
A	0.55 Min.	14.0 Min.
B	0.12 Max.	3.0 Max.
C	0.16	4.0
D	0.39	1.0
E	0.098 Max.	2.5 Max.

Dim.	Inches	Millimeters
F	0.016	0.4
G	0.10	2.5
H	0.018	0.45
J	0.004	0.1
K	0.29 Max.	7.5 Max.

# 8 VLA536-01R



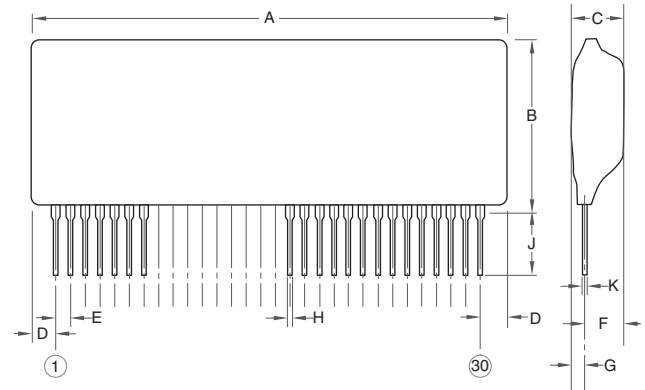
## CONNECTOR

Pin	CN1	CN2
1	V <sub>D</sub>	T <sub>1</sub>
2	GND	T <sub>2</sub>
3	NC	
4	Alarm	
5	IN <sub>1</sub>	
6	IN <sub>2</sub>	
7	V <sub>IN</sub>	

Dim.	Inches	Millimeters
A	3.97±0.04	101.0±1.0
B	2.52±0.02	64.0±0.5
C	2.26	57.5
D	3.75	94.5
E	0.13	3.25

Dim.	Inches	Millimeters
F	0.12 Dia.	3.0 Dia.
G	1.14 Max.	29.0 Max.
H	0.06	1.6
J	0.12 Max.	3.0 Max.

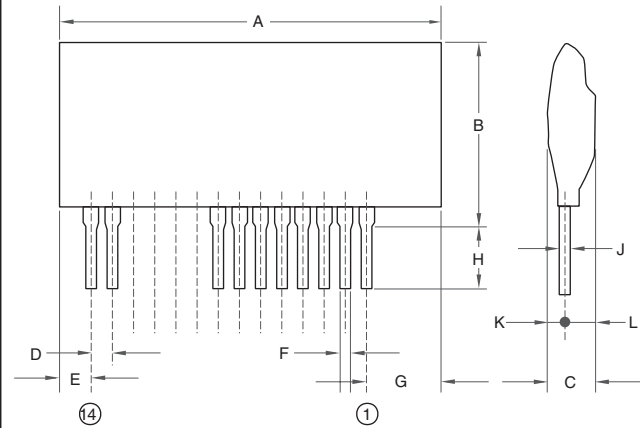
# 9 VLA539-01R, VLA552-01R



Dim.	Inches	Millimeters
A	3.46 Max.	88.0 Max.
B	1.65 Max.	42.0 Max.
C	0.67 Max.	17.0 Max.
D	0.31 Max.	8.0 Max.
E	0.1	2.54

Dim.	Inches	Millimeters
F	0.45 Max.	11.5 Max.
G	0.23 Max.	6.0 Max.
H	0.03±0.004	0.75±0.1
J	0.14±0.04	3.5±1.0
K	0.027 Max.	0.7 Max.

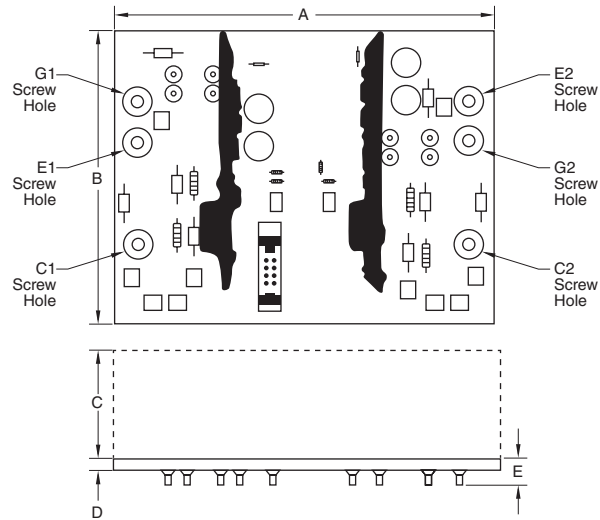
# 10 M57962K



Dim.	Inches	Millimeters
A	2.0 Max.	51.0 Max.
B	1.06 Max.	27.0 Max.
C	0.4 Max.	10.0 Max.
D	0.10	2.54
E	0.26 Max.	6.5 Max.
F	0.02+0.006/-0.004	0.5+0.15/-0.1

Dim.	Inches	Millimeters
G	0.5 Max.	12.5 Max.
H	0.18±0.06	4.5±1.5
J	0.01+0.008/-0.004	0.25+0.2/-0.1
K	0.12 Max.	3.0 Max.
L	0.3 Max.	7.5 Max.

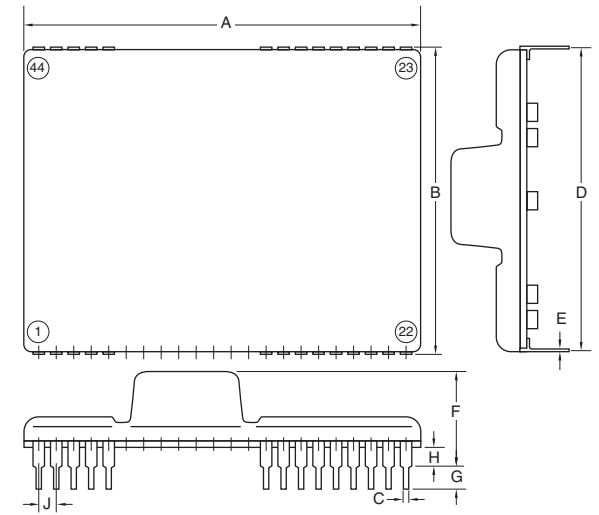
# 11 VLA553-01R, VLA553-02R



Dim.	Inches	Millimeters
A	5.63	143.0
B	4.33	110.0
C	1.69 Max.	43.0 Max.

Dim.	Inches	Millimeters
D	0.063	1.6
E	0.12 Max.	3.0 Max.

# 12 VLA567-01R



Dim.	Inches	Millimeters
A	2.44 Max.	62.0 Max.
B	1.89 Max.	48.0 Max.
C	0.02±0.0039	0.5±0.1
D	1.8	45.72
E	0.01+0.0067/-0.0039	0.27+0.17/-0.1

Dim.	Inches	Millimeters
F	0.67 Max.	17.0 Max.
G	0.177±0.06	4.5±1.5
H	0.14	3.5
J	0.1	2.54

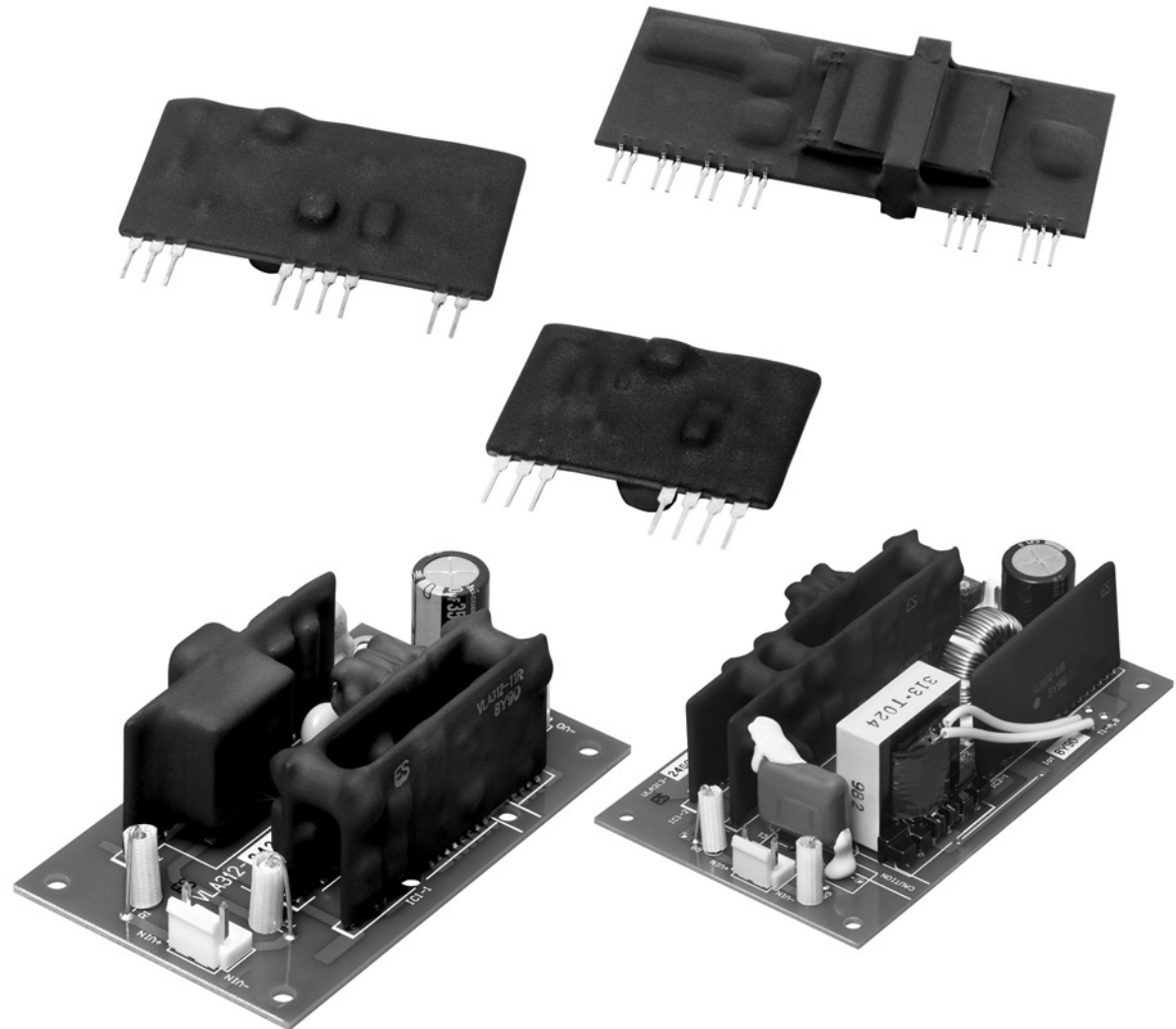
# DC-DC CONVERTERS

## Applications Include:

- Industrial Power Conversions
- Isolated Power for IPMs

## Packages:

- Dual-In-Line
- Prototype IPM Development Kit
- SIP



## TABLE OF CONTENTS

DC-to-DC Converter Modules .....	N-2
Prototype IPM Interface Boards .....	N-3
Outline Drawings .....	N-4

**DC-DC  
Converters**

Gate Drivers  
& IPM  
Interface

Custom  
Modules

IGBT  
Assemblies

Assemblies

Fast Recovery  
Diode Modules

Thyristor &  
Diode  
Modules

Discrete  
Rectifiers

Discrete  
Thyristors

DIPIPM

IPMs

MOSFET  
Modules

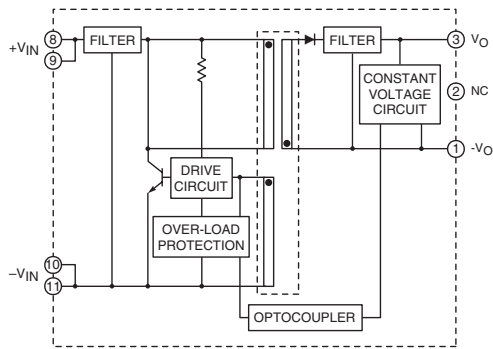
Hybrid  
& SiC  
Modules

IGBTs

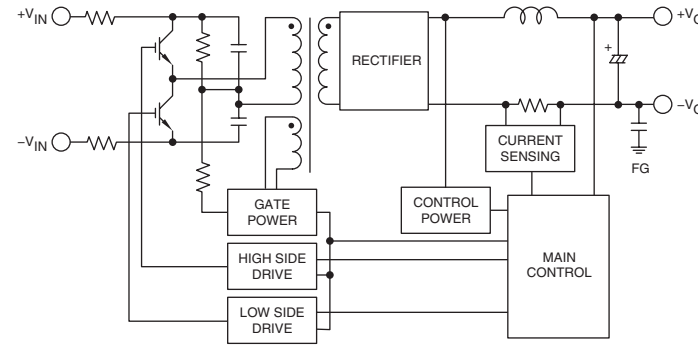
## DC-to-DC Converter Modules for Gate Drive and IPM Control Power

Type	Isolated	Isolated Voltage $V_{RMS}$ (Volts)	Input ( $V_{DC}$ )	Output(s) (Volts A ma)	Power Watts	Primary Application	Outline Drawings	
							Number	Page
M57140-01	Yes	Primary to Secondary = 2500V Secondary to Secondary = 1500V	18-22	4 x 15V	3.0	Isolated Power for IPM Modules	1	N-4
M57182N-315	No	Step Down Converter	140-380	15V	3.0	DIP Control Power	2	N-4
M57184N-715B	No	Step Down Converter	140-380	5, 15V	6.25	DIP Control Power	3	N-4
VLA106-15151	Yes	Primary to Secondary = 2500V	12-18	15V	1.5	Isolated Power for IPM Modules	4	N-5
VLA106-15242	Yes	Primary to Secondary = 2500V	12-18	18V	1.5	Isolated Power for Hybrid Gate Drivers	4	N-5
VLA106-24151	Yes	Primary to Secondary = 2500V	21.6 - 26.4	15V	2.4	Isolated Power for IPM Modules	4	N-5
VLA106-24154	Yes	Primary to Secondary = 2500V	21.6 - 26.4	15V	2.4	Isolated Power for IPM Modules	5	N-5
VLA106-24242	Yes	Primary to Secondary = 2500V	21.6 - 26.4	24V	4.5	Isolated Power for Hybrid Gate Drivers	4	N-5
VLA107-644R	Yes	Primary to Secondary = 2500V	12-24	4x15V	7.2	Isolated Power for IPM Modules	7	N-6
VLA107-677R	Yes	Primary to Secondary = 2500V	12-24	4x15V	11.5	Isolated Power for IPM Modules	7	N-6
VLA312-2425	Yes	Primary to Secondary = 2500V	475 - 850	24V	25.2	Pre-regulator for 460VAC Industrial Controls	8	N-6
VLA313-2450A	Yes	Primary to Secondary = 2500V	400 - 900	24V	50.4	Pre-regulator for 460VAC Industrial Controls	6	N-5

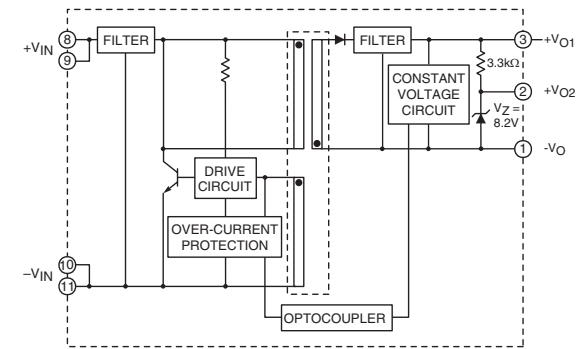
VLA106-15151, VLA106-24151, VLA106-24154



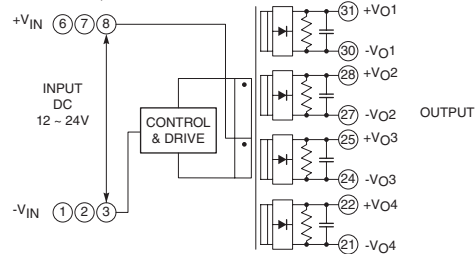
VLA312-2425, VLA313-2450A



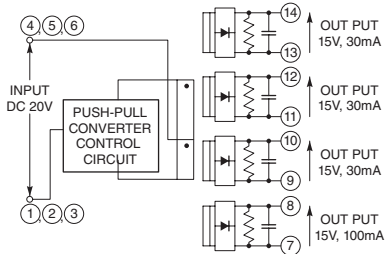
VLA106-15242, VLA106-24242



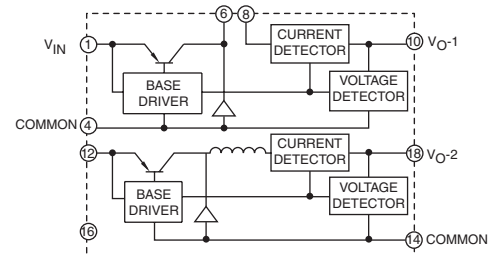
VLA107-644R, VLA107-677R



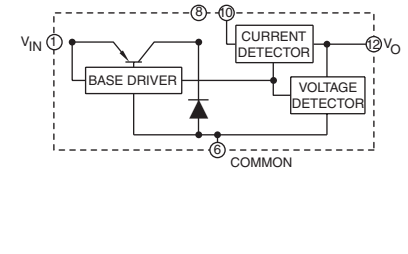
M57140-01



M57184N-715B



M57182N-315



## Prototype IPM Interface Boards

Part Number	L-Series IPM Part Number	Voltage Volts	Current Amperes	Package	Recommended DC-to-DC Converter*
BP7A-LS**	PM50(#L1(*)060	600	50	A or B	VLA106-24151 x 4pc.
BP7B-LS	PM75(#L1(*)060	600	75	C	VLA106-24151 x 3pc.
	PM100(#L1(*)060	600	100		
	PM150(#L1(*)060	600	150		
BP7A-LB**	PM200(#L1(*)060	600	200	C	VLA106-24151 x 3pc.
BP7B-LB	PM300(#L1(*)060	600	300	D	VLA106-24154 x 1pc.
BP6A-L	PM450CLA060	600	450	D	VLA106-24151 x 6pc.
	PM600CLA060	600	600		

Part Number	L-Series IPM Part Number	Voltage Volts	Current Amperes	Package	Recommended DC-to-DC Converter*
BP7A-LS**	PM25(#L1(*)120	1200	25	A or B	VLA106-24151 x 4pc.
BP7B-LS	PM50(#L1(*)120	1200	50	C	VLA106-24151 x 3pc.
	PM75(#L1(*)120	1200	75		
BP7A-LB**	PM100(#L1A120	1200	100	C	VLA106-24151 x 3pc.
BP7B-LB	PM150(#L1A060	1200	150	D	VLA106-24154 x 1pc.
BP6A-L	PM200CLA120	1200	200	D	VLA106-24151 x 6pc.
	PM300CLA120	1200	300		
	PM450CLA120	1200	450		

\*Interface board come with parts noted here and are not assembled.

\*\*For 3.3V Logic

DC-DC Converters

Gate Drivers & IPM Interface

Custom Modules

IGBT Assemblies

Assemblies

Fast Recovery Diode Modules

Thyristor & Diode Modules

Discrete Rectifiers

Discrete Thyristors

DIPIM

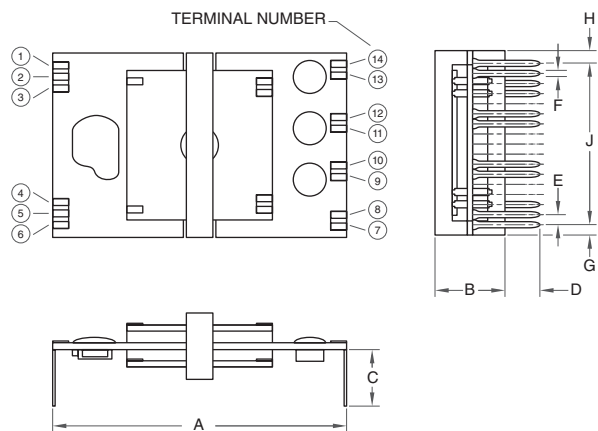
IPMs

MOSFET Modules

Hybrid & SiC Modules

IGBTs

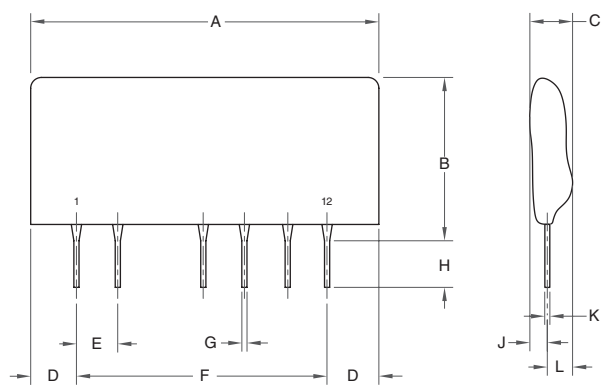
**1** M57140-01



Dim.	Inches	Millimeters
A	2.03	51.5
B	0.71	18.0
C	0.39±0.06	12.5±1.5
D	0.18±0.06	4.5±1.5
E	0.07	1.8

Dim.	Inches	Millimeters
F	0.02	0.55
G	0.08	2.1
H	0.08	2.1
J	1.13	28.8

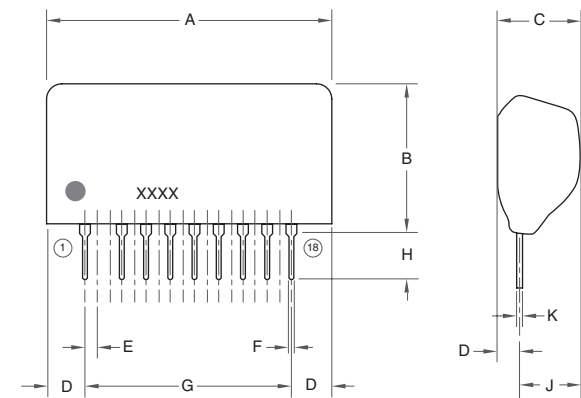
**2** M57182N-315



Dim.	Inches	Millimeters
A	1.38 Max.	35.0 Max.
B	0.79 Max.	20.0 Max.
C	0.34 Max.	8.5 Max.
D	0.14 Max.	3.5 Max.
E	0.02	5.08
F	1.10	27.94

Dim.	Inches	Millimeters
G	0.02	0.55±0.1
H	0.18±0.6	4.5±1.5
J	0.15 Max.	3.8 Max.
K	0.01±0.008	0.35±0.02
L	0.20 Max.	5.0 Max.

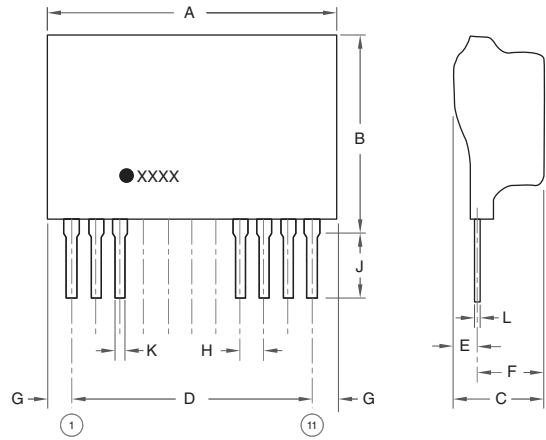
**3** M57184N-715B



Dim.	Inches	Millimeters
A	2.05 Max.	52.0 Max.
B	0.95 Max.	24.0 Max.
C	0.47 Max.	12.0 Max.
D	0.18 Max.	4.5 Max.
E	0.01	2.54

Dim.	Inches	Millimeters
F	0.02±0.004	0.55±0.1
G	1.70	43.18
H	0.16±0.4	4.0±1.0
J	0.3 Max.	7.5 Max.
K	0.01±0.008	0.35±0.2

**4** VLA106-15151, VLA106-15242,  
VLA106-24151, VLA106-24242

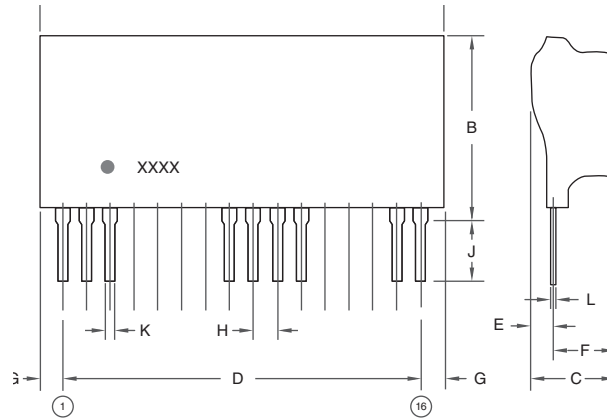


Dim.	Inches	Millimeters
A	1.3	33.0
B	0.945	24.0
C	0.71	18.0
D	1.0	25.4
E	0.22	5.5
F	0.53	13.5

Dim.	Inches	Millimeters
G	0.18	4.5
H	0.10	2.54
J	0.18±0.06	4.5±1.5
K	0.02+0.004/-0.002	0.5+0.1/-0.05
L	0.01+0.01/-0.002	0.25+0.2/-0.05

Note: All dimensions listed are maximums except D.

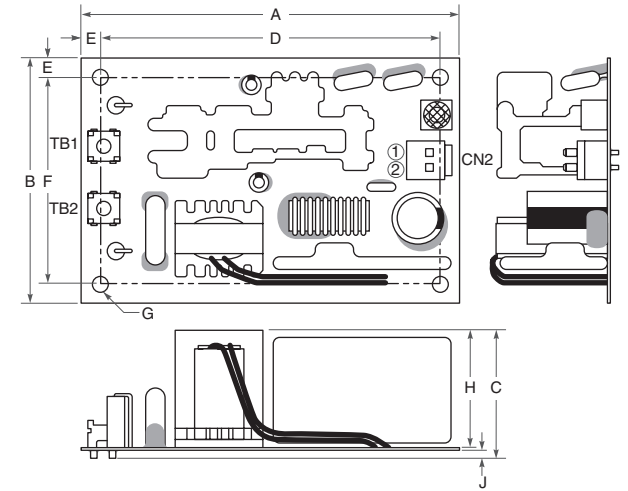
**5** VLA106-24154



Dim.	Inches	Millimeters
A	1.87	47.5
B	0.945	24.0
C	0.71	18.0
D	1.60	40.64
E	0.22	5.5
F	0.53	13.5

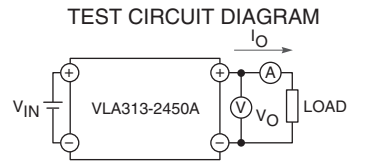
Note: All dimensions listed are maximums except D.

**6** VLA313-2450A



**CONNECTOR**

Parts No.	Polarity
TB1 (OT-047 M3, OSADA)	+VIN
TB2 (OT-047 M3, OSADA)	-VIN
CN2 (B2P-VH, JST)	① +VO ② -VO

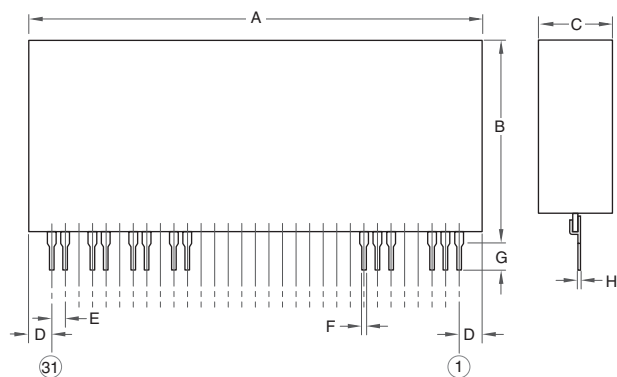


Dim.	Inches	Millimeters
A	4.53±0.012	115.0±0.3
B	2.76±0.012	70.0±0.3
C	1.42 Max.	36.0 Max.
D	4.13±0.012	105.0±0.3
E	0.2	5.0

Dim.	Inches	Millimeters
F	2.36±0.012	60.0±0.3
G	0.14 Dia.	3.5 Dia.
H	1.26 Max.	32.0 Max.
J	0.12 Max.	3.0 Max.



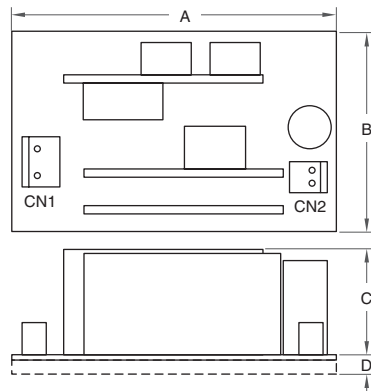
**7** VLA107-644R, VLA107-677R



Dim.	Inches	Millimeters
A	3.42 Max.	87.0 Max.
B	1.53 Max.	39.0 Max.
C	0.55 Max.	14.0 Max.
D	0.21 Max.	5.5 Max.

Dim.	Inches	Millimeters
E	0.1	2.54
F	0.03±0.004	0.75±0.1
G	0.18±0.6	4.5±1.5
H	0.01+0.008/-0.004	0.5+0.2/-0.1

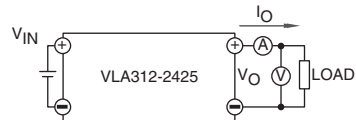
**8** VLA312-2425



**CONNECTOR**

Parts No.	CN1 B2P3-VH, JST	CN2 B2P-VH, JST
Polarity (Pin 1)	-V <sub>IN</sub>	+V <sub>O</sub>
Polarity (Pin 2)	-	-V <sub>O</sub>
Polarity (Pin 3)	+V <sub>IN</sub>	-

**TEST CIRCUIT DIAGRAM**



Dim.	Inches	Millimeters
A	3.54	90.0
B	2.16	55.0
C	1.38	35.0
D	0.20	5.0

Модули, IGBT, IPM, Mitsubishi купить в Минске tel. +375447584780  
www.fotorele.net www.tiristor.by радиодетали, электронные компоненты  
email minsk17@tut.by tel.+375 29 758 47 80 МТС

подробно смотрите ниже: каталог, описание, характеристики, datasheet



QR код

