

# P O S I T I O N I N G PSTA500 - Standard Rectifier

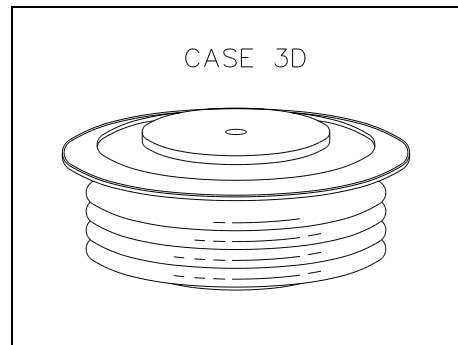
**1500 -**
**3000 V<sub>RRM</sub>; 750 A avg**

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## GENERAL PURPOSE HIGH POWER STANDARD RECTIFIER

**Features:**

- . All Diffused Structure
- . High Surge rating
- . Blocking capability up to 3000 volts
- . Soft Reverse Recovery
- . Rugged Ceramic Hermetic Package
- . Pressure Assembled Device



## ELECTRICAL CHARACTERISTICS AND RATINGS

**Reverse Blocking**

Device Type	V <sub>RRM</sub> (1)	V <sub>RSM</sub> (1)
PSTA500PE	1500	1600
PSTA500L	2000	2100
PSTA500LB	2200	2300
PSTA500LD	2400	2500
PSTA500LM	2600	2700
PSTA500LN	2800	2900
PSTA500CP	3000	3100

 V<sub>RRM</sub> = Repetitive peak reverse voltage

 V<sub>RSM</sub> = Non repetitive peak reverse voltage (2)

Repetitive peak reverse leakage	I <sub>RRM</sub>	20 mA 50 mA (3)
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Notes:

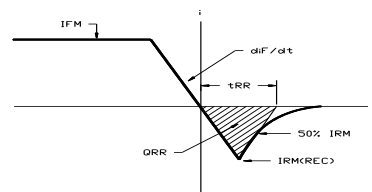
 All ratings are specified for T<sub>j</sub>=25 °C unless otherwise stated.

(1) All voltage ratings are specified for an applied 50Hz/60Hz sinusoidal waveform over the temperature range -40 to +175 °C.

(2) 10 msec. max. pulse width

 (3) Maximum value for T<sub>j</sub> = 175 °C.

(4) See parameter definition below :



REVERSE RECOVERY CHARACTERISTIC

**Conducting - on state**

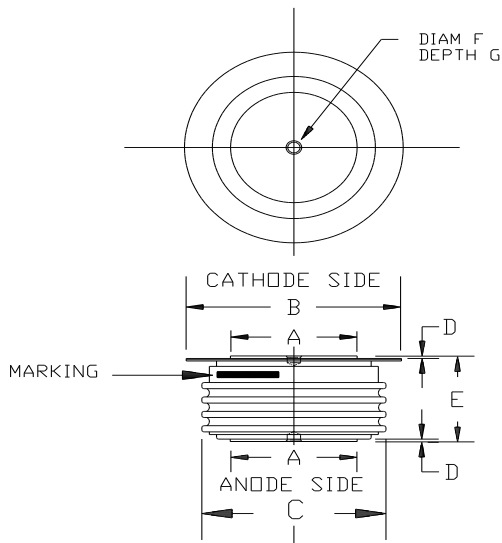
Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Average value of on-state current	I <sub>F(AV)</sub>		750		A	Sinewave, 180° conduction, T <sub>c</sub> = 90°C
RMS value of on-state current	I <sub>FRMS</sub>		1200		A	Nominal value
Peak one cycle surge (non repetitive) current	I <sub>FSM</sub>		10000 9000		A A	8.3 msec (60Hz), sinusoidal wave-shape, 180° conduction, T <sub>j</sub> = 175 °C 10.0 msec (50Hz), sinusoidal wave-shape, 180° conduction, T <sub>j</sub> = 175 °C
I square t	I <sup>2</sup> t		417000		A <sup>2</sup> s	8.3 msec and 10.0 msec
Peak on-state voltage	V <sub>FM</sub>		1.70		V	I <sub>FM</sub> = 2400 A; Duty cycle ≤ 0.01%
Reverse Recovery Current (4)	I <sub>RM(REC)</sub>		*		A	I <sub>FM</sub> = 1000 A; dI <sub>F</sub> /dt = 10 A/μs
Reverse Recovery Charge (4)	Q <sub>rr</sub>		*		μC	
Reverse Recovery Time (4)	t <sub>RR</sub>		*		μs	

**THERMAL AND MECHANICAL CHARACTERISTICS** **PSTA500 - Standard Rectifier**

Parameter	Symb ol	Min.	Max.	Typ.	Units	Conditions
Operating temperature	T <sub>j</sub>	-40	+175		°C	
Storage temperature	T <sub>stg</sub>	-40	+175		°C	
Thermal resistance - junction to case	R <sub>θ(j-c)</sub>		0.040 0.080		°C/W	Double sided cooled Single sided cooled
Thermal resistance - case to sink	R <sub>θ(c-s)</sub>		.015 .030		°C/W	Double sided cooled * Single sided cooled *
Mounting force	P	3500 15.5	4500 19.9		lb. kN	
Weight	W			9 225	oz. g	

\* Mounting surfaces smooth, flat and greased

**CASE OUTLINE AND DIMENSIONS.**



DIMENSIONS	Min. mm	Max. mm	Min. In.	Max. In.
DIAM A	33.02	34.29	1.30	1.35
DIAM B	55.88	63.50	2.20	2.50
DIAM C	--	54.61	--	2.15
D	0.76	--	0.03	--
E	25.40	27.18	1.00	1.07
F	3.30	3.81	0.13	0.15
G	1.78	2.03	0.07	0.08

STRIKE DISTANCE = .73 INCH / 18.5 MM MIN.  
CREEPAGE DISTANCE = 1.17 INCH / 29.7 MM MIN.