

# ZP4500-POWER THYRISTOR

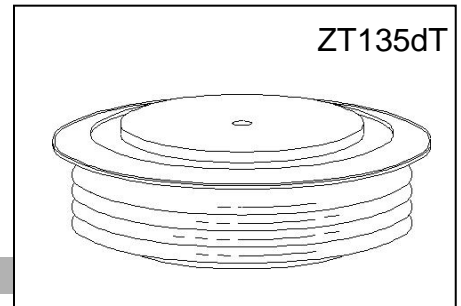
Shanghai Sunco Electronics Co., Ltd.

6800-8500V<sub>DRM</sub>

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**GENERAL PURPOSE HIGH POWER STANDARD RECTIFIER**  
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**Features:**

- . All diffused structure
- . High surge rating
- . Blocking capability up to 8500 volts
- . Ceramic housing hermetic package
- . Pressure assembled device



**ELECTRICAL CHARACTERISTICS AND RATINGS**

**Reverse Blocking**

Device Type	V <sub>RRM</sub> (1)	V <sub>RSM</sub> (1)
ZP4500-68	6800	7000
ZP4500-70	7000	7200
ZP4500-76	7600	7800
ZP4500-80	8000	8200
ZP4500-85	8500	8700

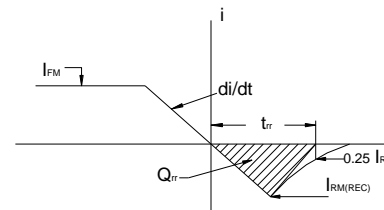
Notes:

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 0 to +125 °C.
- (2) 10 msec. max. pulse width
- (3) Maximum value for T<sub>j</sub> = 125 °C.
- (4) See parameter definition below :

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

Repetitive peak reverse leakage current	I <sub>RRM</sub>	2 mA 30 mA (3)
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REVERSE RECOVERY CHARACTERIST

**Conducting - on state**

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Average forward current	I <sub>F(AV)</sub>		4500		A	Sinewave 180°, T <sub>c</sub> =70°C
RMS forward current	I <sub>FRMS</sub>		7065		A	Nominal value
Peak one cycle surge (non repetitive) current	I <sub>FSM</sub>		44000		A	10 msec (50Hz), sinusoidal wave-shape, 180° conduction, T <sub>j</sub> = 125 °C
I square t	I <sup>2</sup> t		1.4 × 10 <sup>7</sup>		A <sup>2</sup> s	10 msec
Peak forward voltage	V <sub>FM</sub>		1.65		V	I <sub>FM</sub> = 5000A;T <sub>j</sub> =25°C
Threshold voltage	V <sub>FO</sub>		0.95		V	T <sub>j</sub> =125°C,I=0.5 π I <sub>F(AV)</sub> to 1.5 π I <sub>F(AV)</sub>
Slope resistance	r <sub>F</sub>		0.13		mΩ	T <sub>j</sub> =125°C,I=0.5 π I <sub>F(AV)</sub> to 1.5 π I <sub>F(AV)</sub>
Reverse Recovery Current (4)	I <sub>RM(REC)</sub>				A	I <sub>FM</sub> = 500 A; di/dt = -10 A/s;T <sub>j</sub> max
Reverse Recovery Charge (4)	Q <sub>rr</sub>				μC	I <sub>FM</sub> = 500 A; di/dt = -10 A/s;T <sub>j</sub> max
Reverse Recovery Time (4)	t <sub>rr</sub>				μs	I <sub>FM</sub> = 500 A; di/dt = -10 A/s;T <sub>j</sub> max

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Operating temperature	$T_j$	-40	+125		°C	
Storage temperature	$T_{stg}$	-40	+125		°C	
Thermal resistance - junction to case	$R_{\Theta(j-c)}$		0.004		°C/W	Double sided cooled
Thermal resistance - case to heatsink	$R_{\Theta(c-s)}$		0.001		°C/W	Double sided cooled
Mounting force	P			120	kN	
Weight	W			3.60	kg.	

\* Mounting surfaces smooth, flat and greaseless

**CASE OUTLINE AND DIMENSIONS**

