

ZP4000 - RECTIFIER DIODE

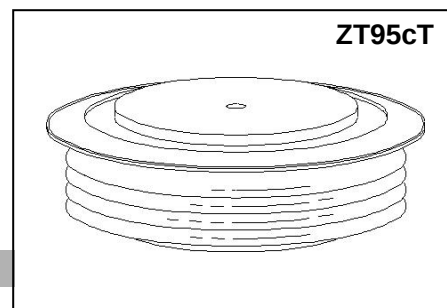
Shanghai Sunco Electronics Co., Ltd.

3600-4500V ^{RRM}

GENERAL PURPOSE HIGH POWER STANDARD RECTIFIER

Features:

- . All Diffused Structure
- . High Surge rating
- . Blocking capability up to 4500 volts
- . Ceramic Housing Hermetic Package
- . Pressure Assembled Device



ELECTRICAL CHARACTERISTICS AND RATINGS

Reverse Blocking

Device Type	V_{RRM} (1)	V_{RSM} (1)
ZP4000-36	3600	3800
ZP4000-38	3800	4000
ZP4000-40	4000	4200
ZP4000-42	4200	4400
ZP4000-45	4500	4700

V_{RRM} = Repetitive peak reverse voltage

V_{RSM} = Non repetitive peak reverse voltage (2)

Repetitive peak reverse leakage	I_{RRM}	5 mA 200 mA (3)
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Notes:

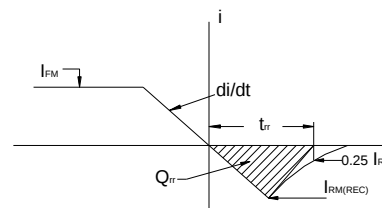
All ratings are specified for $T_j = 25^\circ\text{C}$ unless otherwise stated.

(1) All voltage ratings are specified for an applied 50Hz/60Hz sinusoidal waveform over the temperature range 0 to $+160^\circ\text{C}$.

(2) 10 msec. max. pulse width

(3) Maximum value for $T_j = 160^\circ\text{C}$.

(4) See parameter definition below:



REVERSE RECOVERY CHARACTERIST

Conducting - on state

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Average value of on-state current	$I_{F(AV)}$		4000		A	Sinewave, 180° , $T_c = 100^\circ\text{C}$
RMS value of on-state current	I_{FRMS}		6280		A	Nominal value
Peak one cycle surge (non repetitive) current	I_{FSM}		60000		A	10 msec (50Hz), sinusoidal wave-shape, 180° conduction, $T_j = 160^\circ\text{C}$
I square t	I^2t		1.8×10^7		A^2s	10 msec
Peak on-state voltage	V_{FM}		1.45		V	$I_{FM} = 5000\text{A}$; $T_j = 25^\circ\text{C}$
Threshold voltage	V_{FO}		0.85		V	$T_j = 160^\circ\text{C}$, $I = 0.5 \pi I_{F(AV)}$ to $1.5 \pi I_{F(AV)}$
Slope resistance	r_F		0.09		m Ω	$T_j = 160^\circ\text{C}$, $I = 0.5 \pi I_{F(AV)}$ to $1.5 \pi I_{F(AV)}$
Reverse Recovery Current (4)	$I_{RM(REC)}$				A	$I_{FM} = 500\text{A}$; $di/dt = -10\text{A/s}$; T_{jmax}
Reverse Recovery Charge (4)	Q_{rr}			6000	μC	$I_{FM} = 500\text{A}$; $di/dt = -10\text{A/s}$; T_{jmax}
Reverse Recovery Time (4)	t_{rr}				μs	$I_{FM} = 500\text{A}$; $di/dt = -10\text{A/s}$; T_{jmax}

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Operating temperature	T_j	-40	+160		°C	
Storage temperature	T_{stg}	-40	+160		°C	
Thermal resistance - junction to case	$R_{\theta(j-c)}$		0.008		°C/W	Double sided cooled
Thermal resistance - case to heatsink	$R_{\theta(c-s)}$		0.002		°C/W	Double sided cooled
Mounting force	P	55	65	60	kN	
Weight	W			1.40	kg.	

* Mounting surfaces smooth, flat and greaseless

CASE OUTLINE AND DIMENSIONS