

ZP4400 - RECTIFIER DIODE

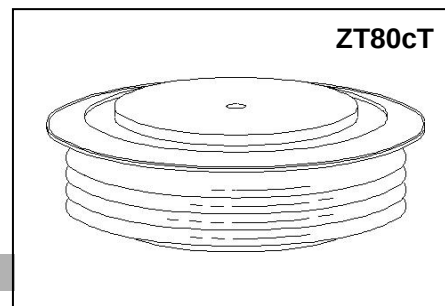
Shanghai Sunco Electronics Co., Ltd.

1800-2400V ^{RRM}

GENERAL PURPOSE HIGH POWER STANDARD RECTIFIER

Features:

- . All Diffused Structure
- . High Surge rating
- . Blocking capability up to 2400 volts
- . Ceramic Housing Hermetic Package
- . Pressure Assembled Device



ELECTRICAL CHARACTERISTICS AND RATINGS

Reverse Blocking

Device Type	V_{RRM} (1)	V_{RSM} (1)
ZP4400-18	1800	2000
ZP4400-20	2000	2200
ZP4400-22	2200	2400
ZP4400-24	2400	2600

V_{RRM} = Repetitive peak reverse voltage

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

Repetitive peak reverse leakage	I_{RRM}	5 mA 100 mA (3)
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Notes:

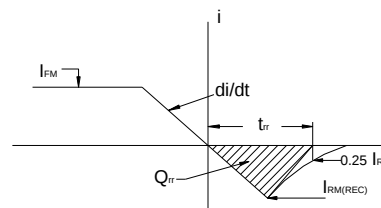
All ratings are specified for $T_j = 25^\circ\text{C}$ unless otherwise stated.

(1) All voltage ratings are specified for an applied 50Hz/60Hz sinusoidal waveform over the temperature range 0 to $+175^\circ\text{C}$.

(2) 10 msec. max. pulse width

(3) Maximum value for $T_j = 175^\circ\text{C}$.

(4) See parameter definition below:



REVERSE RECOVERY CHARACTERIST

Conducting - on state

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Average forward current	$I_{F(AV)}$		4400		A	Sinewave, 180° , $T_c = 100^\circ\text{C}$
RMS forward current	I_{FRMS}		6908		A	Nominal value
Peak one cycle surge (non repetitive) current	I_{FSM}		52800		A	10 msec (50Hz), sinusoidal wave-shape, 180° conduction, $T_j = 175^\circ\text{C}$
I square t	I^2t		14×10^6		A^2s	10 msec
Peak forward voltage	V_{FM}		1.2		V	$I_{FM} = 3000\text{A}$; $T_j = 25^\circ\text{C}$
Threshold voltage	V_{FO}		0.81		V	$T_j = 175^\circ\text{C}$, $I = 0.5 \pi I_{F(AV)}$ to $1.5 \pi I_{F(AV)}$
Slope resistance	r_F		0.062		m Ω	$T_j = 175^\circ\text{C}$, $I = 0.5 \pi I_{F(AV)}$ 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}			5000	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	+175		°C	
Storage temperature	T_{stg}	-40	+175		°C	
Thermal resistance - junction to case	$R_{\theta(j-c)}$		0.010		°C/W	Double sided cooled
Thermal resistance - case to heatsink	$R_{\theta(c-s)}$		0.003		°C/W	Double sided cooled
Mounting force	P	32	39	35	kN	
Weight	W			1.1	kg.	

* Mounting surfaces smooth, flat and greaseless

CASE OUTLINE AND DIMENSIONS