



ZW12000- WELDING DIODE

200-400V_{RRM}

WELDING DIODE

Features:

- . All diffused structure
- . High current density
- . Very low forward voltage drop
- . Ceramic housing hermetic package
- . Ultra-low thermal resistance

W3



ELECTRICAL CHARACTERISTICS AND RATINGS

Reverse Blocking

Device Type	V _{RRM} (1)	V _{RSM} (1)
ZP12000-02	200	300
ZP12000-04	400	500

V_{RRM} = Repetitive peak reverse voltage

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

Repetitive peak reverse leakage current	I _{RRM}	2 mA 50 mA (3)
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Notes:

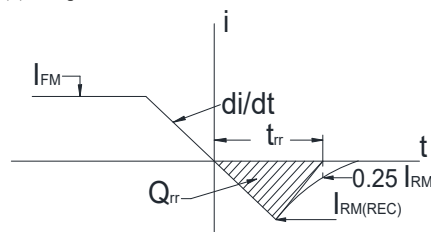
All ratings are specified for T_j=25 °C, unless otherwise stated

(1) Sine half wave, f=50Hz, T_j = -40 to +170°C.

(2) Sine half wave, Pulse width 10 msec. T_j = -40 to +170°C.

(3) Maximum value for T_j = 170 °C.

(4) See parameter definition below :



reverse recovery characteristic

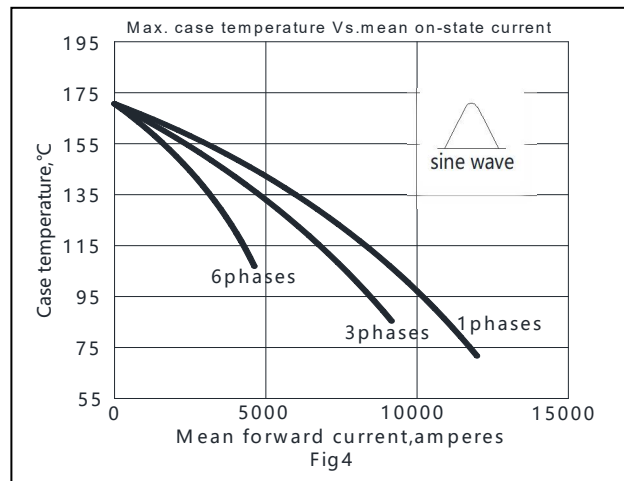
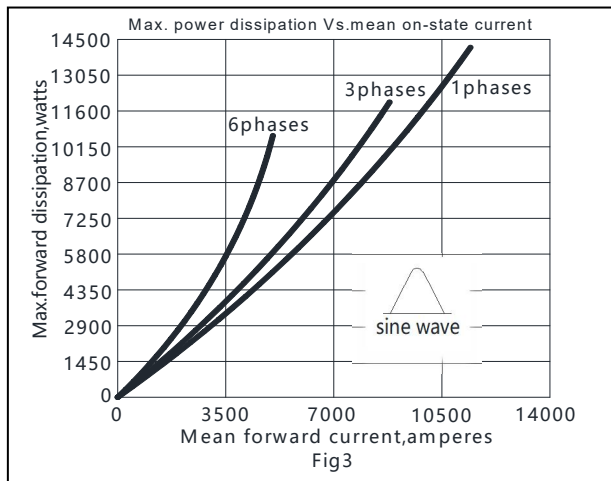
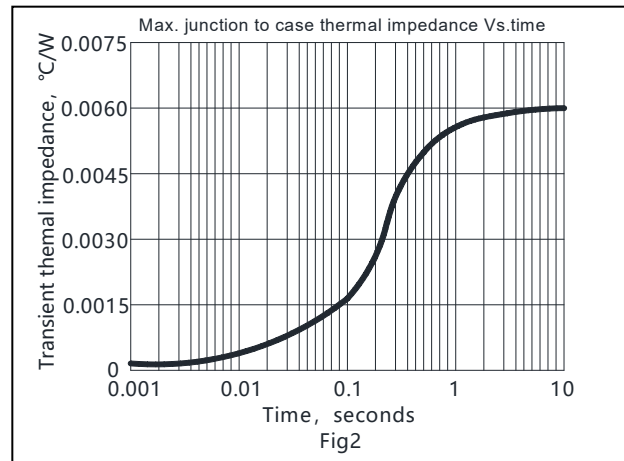
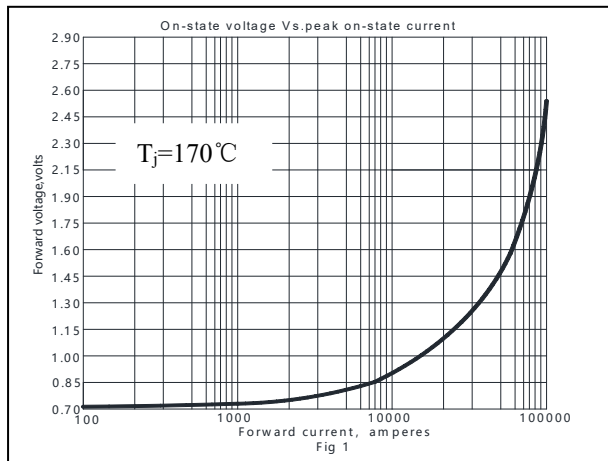
Conducting - on state

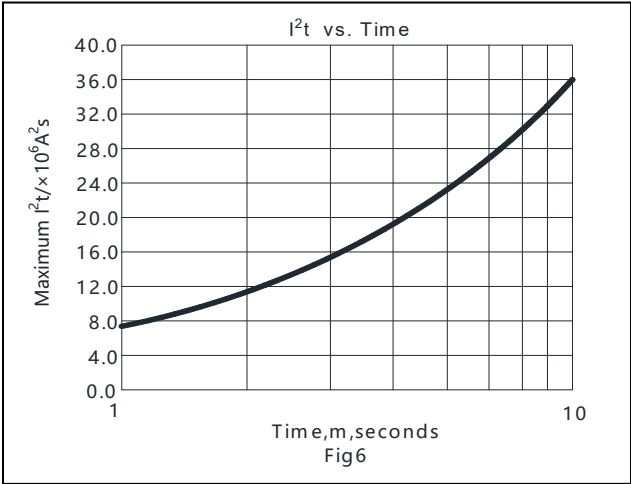
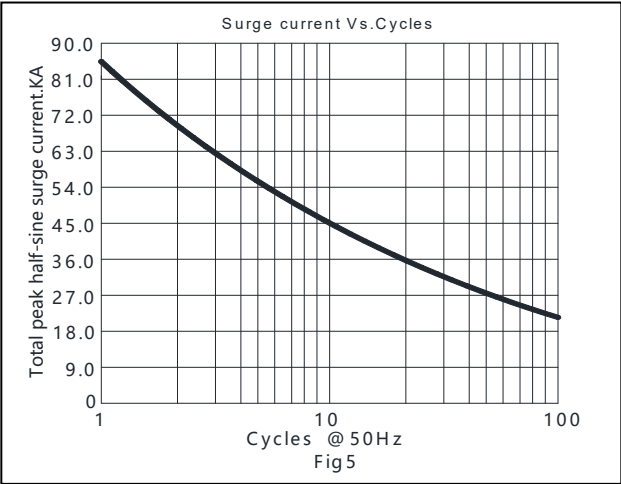
Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Average forward current	I _{F(AV)}		11350		A	Sinewave 180°, T _c =85°C
RMS forward current	I _{FRMS}		17820		A	
Peak one cycle surge (non repetitive) current	I _{FSM}		85000		A	Pulse width 10 msec, sinusoidal wave-shape, 180° conduction, T _j = 170 °C
I square t	I ² t		36 × 10 ⁶		A ² s	Pulse width 10 msec, sinusoidal wave-shape, T _j = 170 °C
Peak forward voltage	V _{FM}		1.01		V	I _{FM} = 5000A; T _j =25°C
Threshold voltage	V _{FO}		0.74		V	T _j =170°C
Slope resistance	r _F		0.018		mΩ	T _j =170°C
Reverse Recovery Current (4)	I _{RM(REC)}				A	di/dt=-25A/us, I _{FM} =1000A, V _R =50V
Reverse Recovery Charge (4)	Q _{rr}		600		μC	di/dt=-25A/us, I _{FM} =1000A, V _R =50V
Reverse Recovery Time (4)	t _{rr}				μs	di/dt=-25A/us, I _{FM} =1000A, V _R =50V

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Operating temperature	T_j	-40	+170		°C	
Storage temperature	T_{stg}	-40	+170		°C	
Thermal resistance - junction to case	$R_{\theta(j-c)}$		0.006		°C/W	Double sided cooled
Thermal resistance - junction to case	$R_{\theta(j-c)}$		0.012		°C/W	Single sided cooled
Thermal resistance - case to heatsink	$R_{\theta(c-s)}$		0.003		°C/W	Double sided cooled
Creepage distance	D_s		4		mm	
Air breakdown distance	D_a		4		mm	
Mounting force	F			35	kN	
Weight	W			205	g	

* Mounting surfaces smooth, flat and greaseless

Graph





CASE OUTLINE AND DIMENSIONS

