

PST 64DN04

**HIGH POWER DIODE FOR MEDIUM FREQUENCY WELDING
WITHOUT HOUSING ULTRATHIN DEVICE**

Features

- High current capability
- Very low thermal impedance
- High power cycling capability

ELECTRICAL CHARACTERISTICS AND RATINGS

Reverse blocking

Device Type	V_{RRM} (1)	V_{RSM} (1)
PST 64DN04	400 V	500 V

V_{RRM} = Repetitive peak reverse voltage

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

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 -40 to $+180^\circ\text{C}$.

(2) 10 ms max. pulse width

(3) Maximum value for $T_j = 180^\circ\text{C}$.

Repetitive peak reverse leakage current	I_{RRM}	100 mA (3)
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Conducting

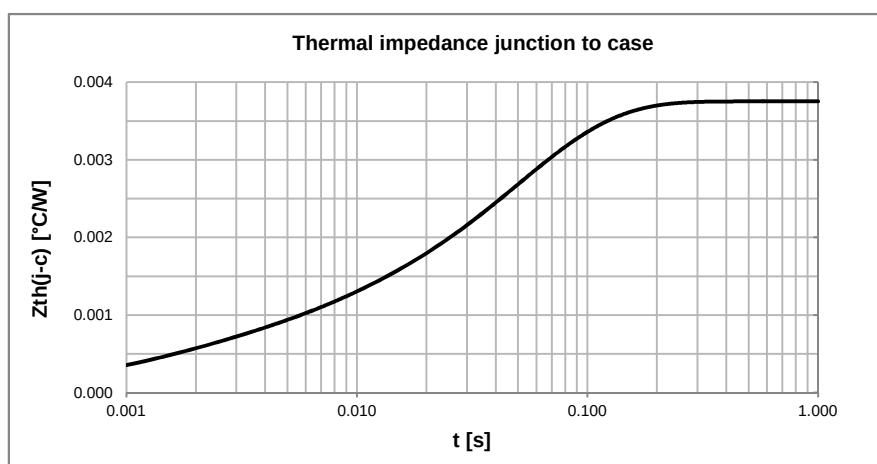
Parameter	Symbol	Min	Max	Typ	Unit	Conditions
Average value of forward current	$I_{F(AV)}$		8500		A	50 Hz sinewave, 180° conduction, $T_c = 129^\circ\text{C}$
RMS value of forward current	$I_{F(RMS)}$		13345		A	
Peak one cycle surge (non repetitive) current	I_{FSM}		95		kA	50 Hz sinewave, 180° conduction, $T_j = T_{jmax}$, $V_R = 0$
I square t	$I^2 t$		45125		kA^2s	$T_j = T_{jmax}$
Peak forward voltage	V_{FM}		0.98		V	Forward current 10 kA, T_{jmax}
Threshold voltage	$V_{F(TO)}$		0.7		V	$T_j = T_{jmax}$
Forward slope resistance	r_F		0.029		m Ω	$T_j = T_{jmax}$

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Thermal and mechanical characteristics and ratings

Parameter	Symbol	Min	Max	Typ	Unit	Conditions
Operating temperature	T_j	-40	180		°C	
Storage temperature	T_{stg}	-40	180		°C	
Thermal resistance junction to case	$R_{th(j-c)}$		0.0038		°C/W	Double side cooled , DC
Thermal resistance junction to case	$R_{th(j-c)}$		0.0046		°C/W	Double side cooled, 180° sin
Thermal resistance case to sink	$R_{th(c-s)}$		0.0020		°C/W	Double side cooled, mounting surfaces smooth, flat and greased
Mounting force	F	60	80		kN	
Weight	W		150		g	

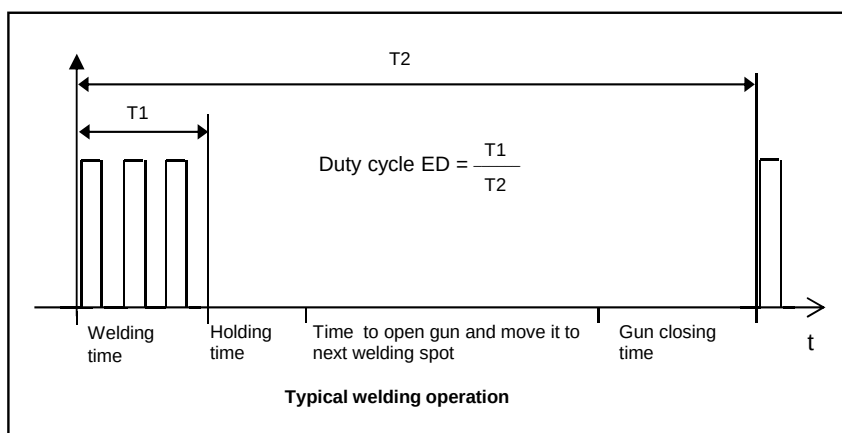
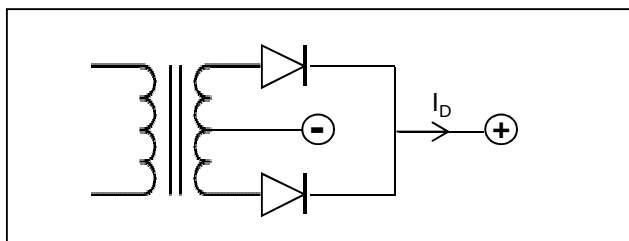


Analytical expression for $Z_{th(j-c)}$				
$Z_{th(j-c)}(t) = \sum_i A_i \cdot (1 - \exp(-t / \tau_i))$				
i	1	2	3	
A_i	4.6E-04	2.9E-03	3.9E-04	[°C/W]
τ_i	5.4E-03	5.0E-02	1.2E-03	[s]

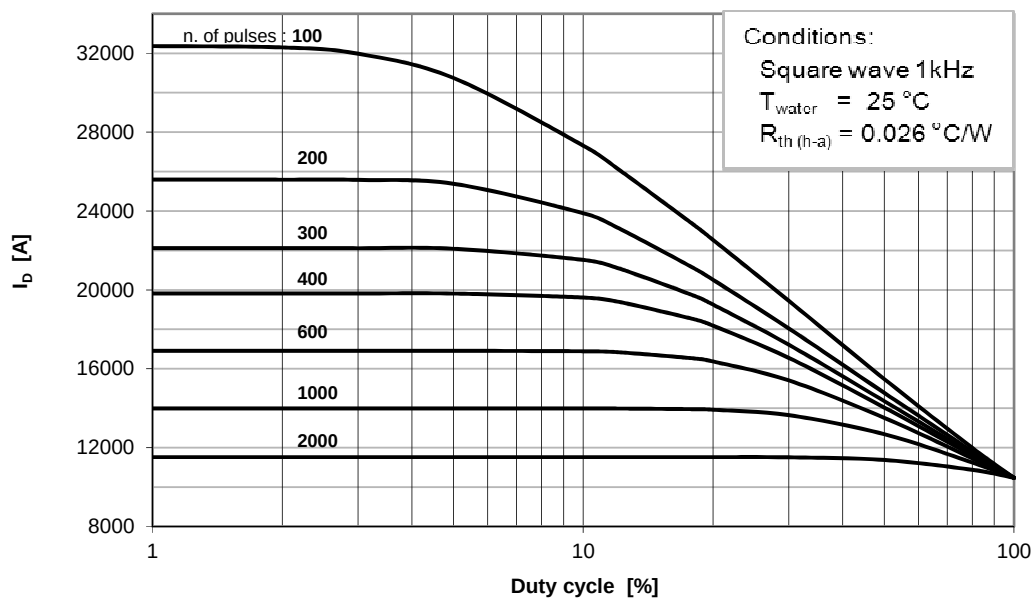
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Output current (I_D) capability for center tap configuration

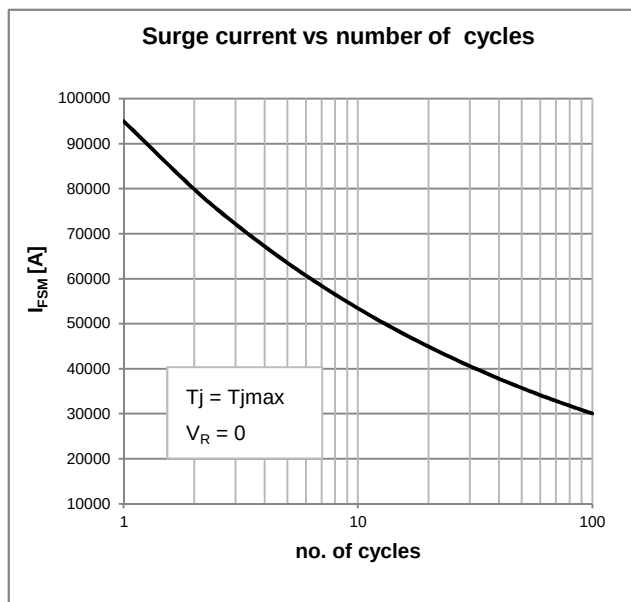
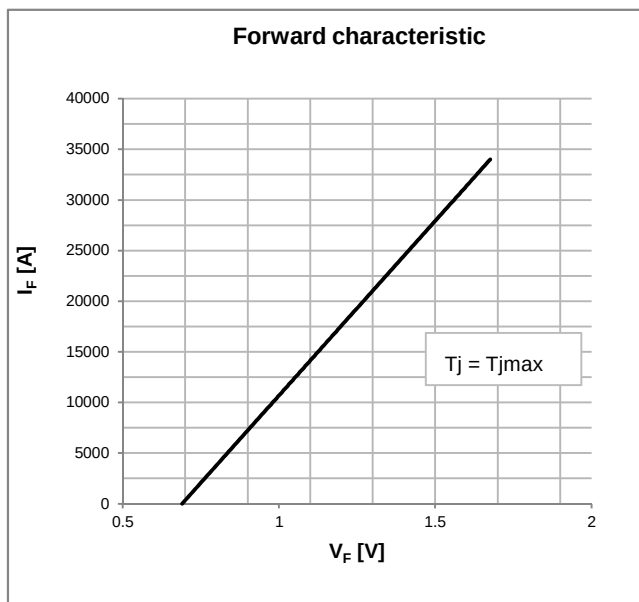


Output current capability

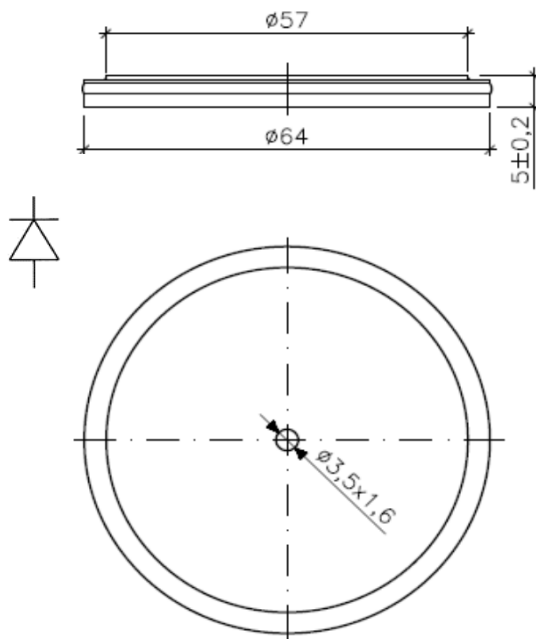


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OUTLINE AND DIMENSIONS



Notice

- We recommend to protect the diode with a temperature resistant O-Ring.
- All the characteristics given in this data sheet are guaranteed only with uniform clamping force, cleaned and lubricated heatsink surfaces with flatness < 0.03 mm and roughness $< 2\mu m$