

Technical Data

PST MD1080

SINGLE RECTIFIER DIODE MODULE

Features:

- Electrically isolated base plate
- High surge capability
- Precious metal pressure contact

Typical applications:

- DC motor control (e.g. for machine tools)
- Temperature control (e.g. for ovens, chemical processes)
- Professional light dimming (e.g. for studios, theaters)

ELECTRICAL CHARACTERISTICS AND RATINGS

Reverse blocking - Off-state

Device Type	V_{RRM} (1)	V_{RSM} (1)
PST MD1080	2800 V	2900 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 $+150^\circ\text{C}$.

(2) 10 ms max. pulse width

(3) Maximum value for $T_j = T_{jmax}$

(4) Min. value for linear and exponential wave shape to 67% rated V_{DRM} . Gate open. $T_j = T_{jmax}$

Repetitive peak reverse leakage current	I_{RRM}	75 mA (3)
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Conducting

Parameter	Symbol	Min	Max	Typ	Unit	Conditions
Average forward current	I_{FAV}		1080		A	50 Hz sine wave, 180° conduction, $T_c = 100^\circ\text{C}$
RMS forward current	$I_{F(RMS)}$		1696		A	50 Hz sine wave, 180° conduction, $T_c = 100^\circ\text{C}$
Surge non repetitive current	I_{FSM}		30		kA	50 Hz sine wave Half cycle
I squared t	$I^2 t$		4500		kA^2s	$V_R = 0$ $T_j = T_{jmax}$
Peak forward voltage	V_{FM}		1.02		V	On-state current 2000 A, $T_j = T_{jmax}$
Threshold voltage	$V_{F(TO)}$		0.79		V	$T_j = T_{jmax}$
Forward slope resistance	r_F		0.115		m Ω	$T_j = T_{jmax}$
RMS isolation voltage	V_{INS}		4500		V	AC 50 Hz, 60 s

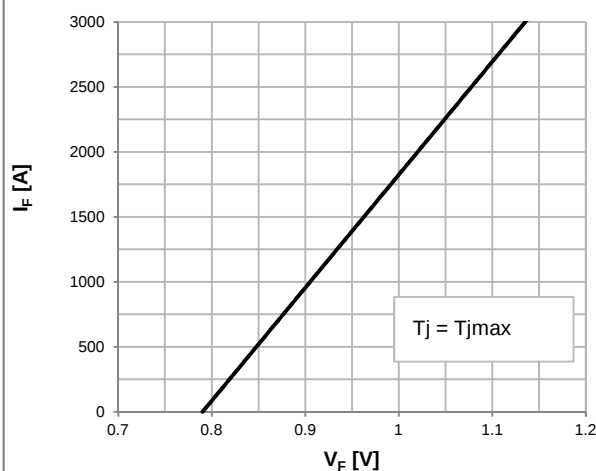
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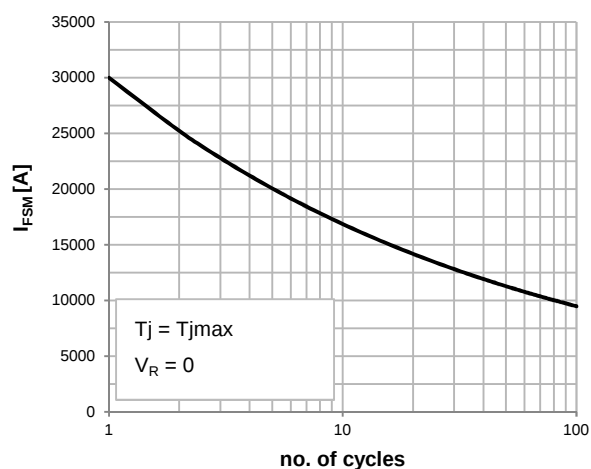
Thermal and mechanical characteristics and ratings

Parameter	Symbol	Min	Max	Typ	Unit	Conditions
Operating temperature	T_j	-40	150		°C	
Storage temperature	T_{stg}	-40	125		°C	
Thermal resistance junction to case	$R_{th(j-c)}$		0.042		°C/W	SIN 180° conduction mounting surfaces smooth, flat and greased
Thermal resistance case to sink	$R_{th(c-s)}$		0.015		°C/W	
Mounting torque case-heatsink	T	4	6		N·m	
Mounting torque busbar-terminals	T	12	18		N·m	
Weight	W			2800	g	

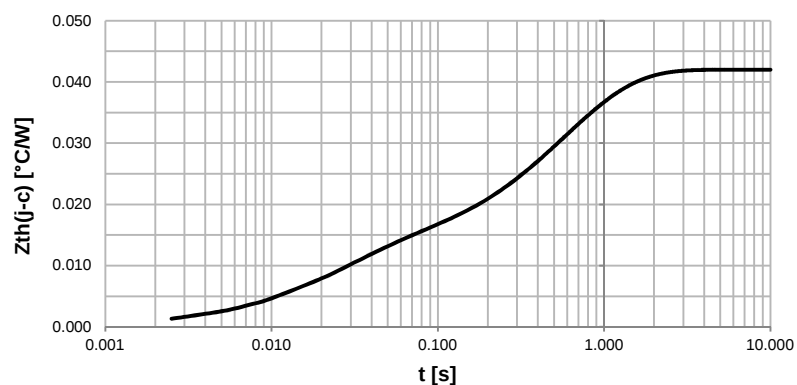
Forward characteristic



Surge current vs number of cycles



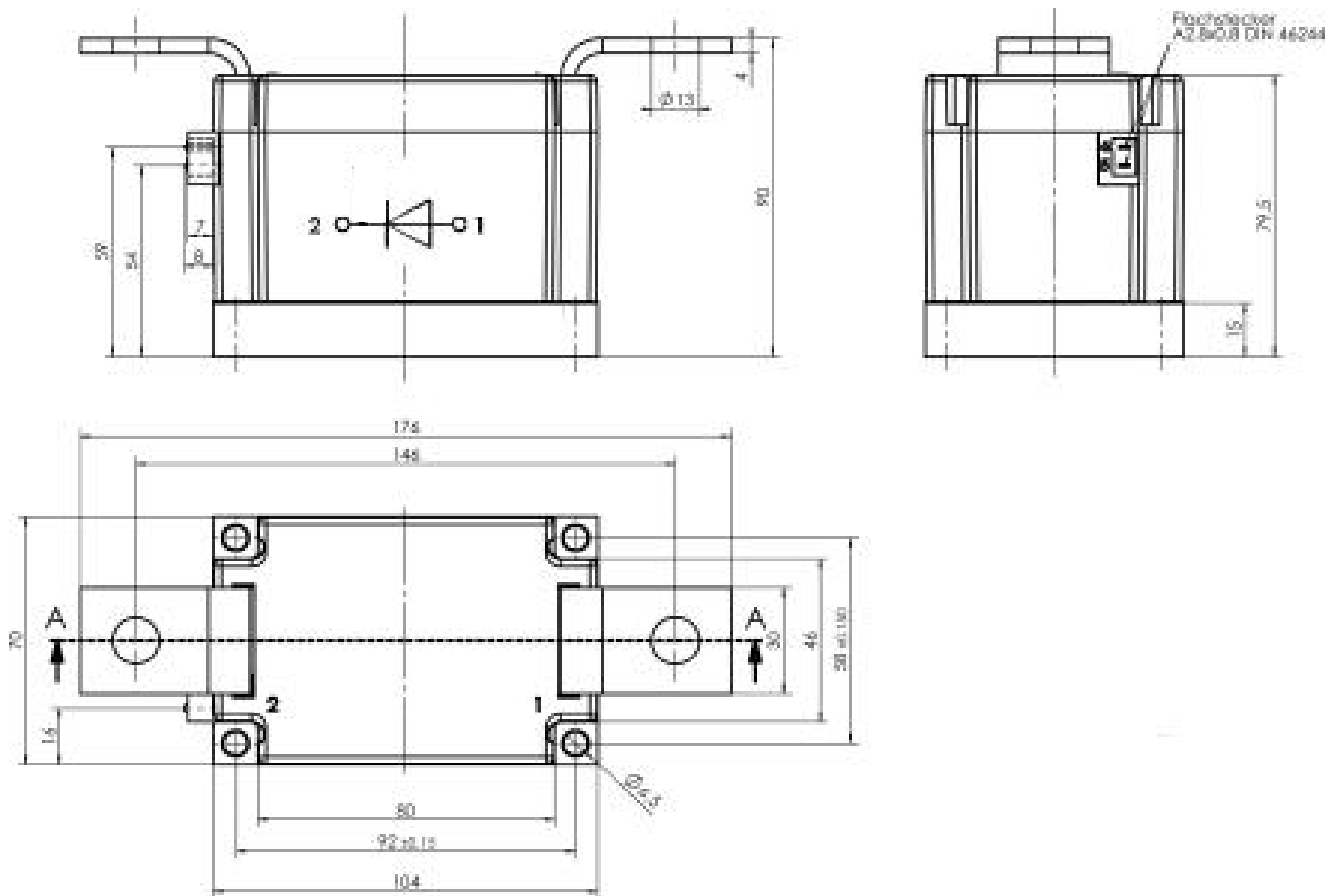
Thermal impedance junction to case



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OUTLINE AND DIMENSIONS



(all dimensions in mm)