

PST MDC170

RECTIFIER DIODE MODULE

Features:

- Heat transfer through aluminum nitride ceramic isolated metal baseplate
- Hard soldered joints for high reliability
- Electrically insulated base plate

Typical applications:

- Rectifier for drives applications
- Rectifiers for UPS
- Battery chargers

ELECTRICAL CHARACTERISTICS AND RATINGS

Reverse blocking

Device Type	V_{RRM} (1)	V_{RSM} (1)
PST MDC170	1600 V	1700 V

V_{RRM} = Repetitive peak reverse voltage

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

Notes:

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

(1) All voltage ratings are specified for an applied 50Hz/60Hz sinusoidal waveform over the temperature range -40 to +135 °C.

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

(3) Maximum value for $T_j = 135\text{ °C}$.

Repetitive peak reverse leakage current	I_{RRM}	10 mA (3)
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Conducting

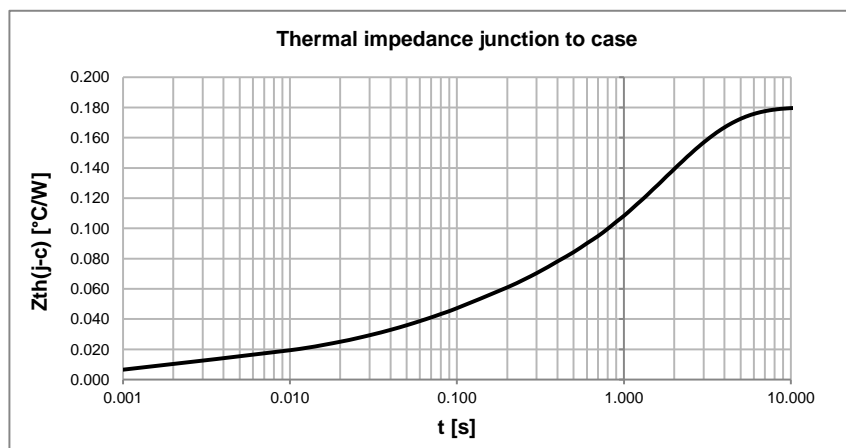
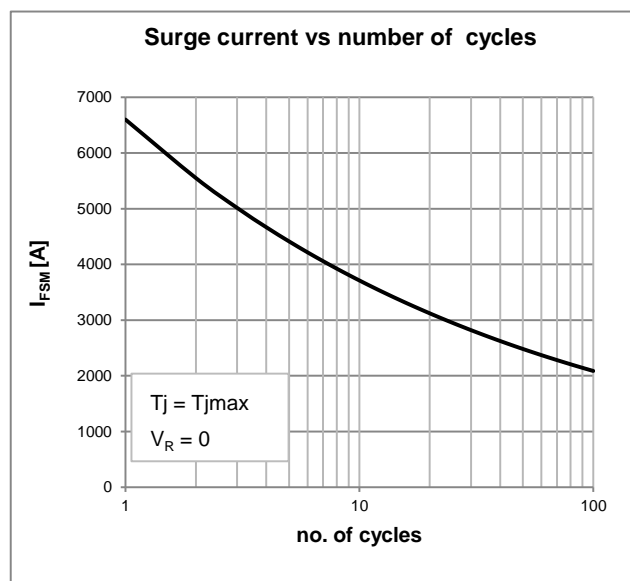
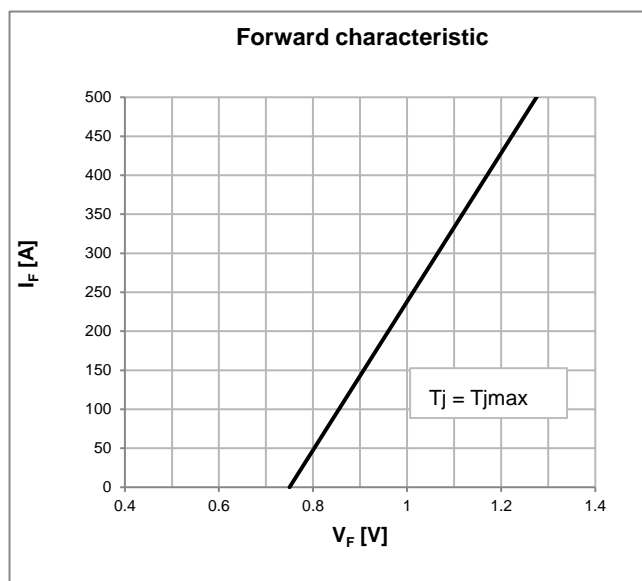
Parameter	Symbol	Min	Max	Typ	Unit	Conditions
Average value of forward current	$I_{F(AV)}$		165		A	50 Hz sinewave, 180° conduction, $T_c = 100\text{ °C}$
RMS value of forward current	$I_{F(RMS)}$		260		A	50 Hz sinewave, 180° conduction, $T_c = 100\text{ °C}$
Peak one cycle surge (non repetitive) current	I_{FSM}		6.6		kA	50 Hz sine wave Half cycle
I square t	$I^2 t$		218		kA ² s	$V_R = 0$ $T_j = 25\text{ °C}$
Peak forward voltage	V_{FM}		1.40		V	Forward current 500 A, $T_j = 25\text{ °C}$
Threshold voltage	$V_{F(TO)}$		0.75		V	$T_j = T_{jmax}$
Forward slope resistance	r_F		1.05		mΩ	$T_j = T_{jmax}$
RMS isolation voltage	V_{INS}		3000		V	AC 50 Hz, 60 s

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Thermal and mechanical characteristics and ratings

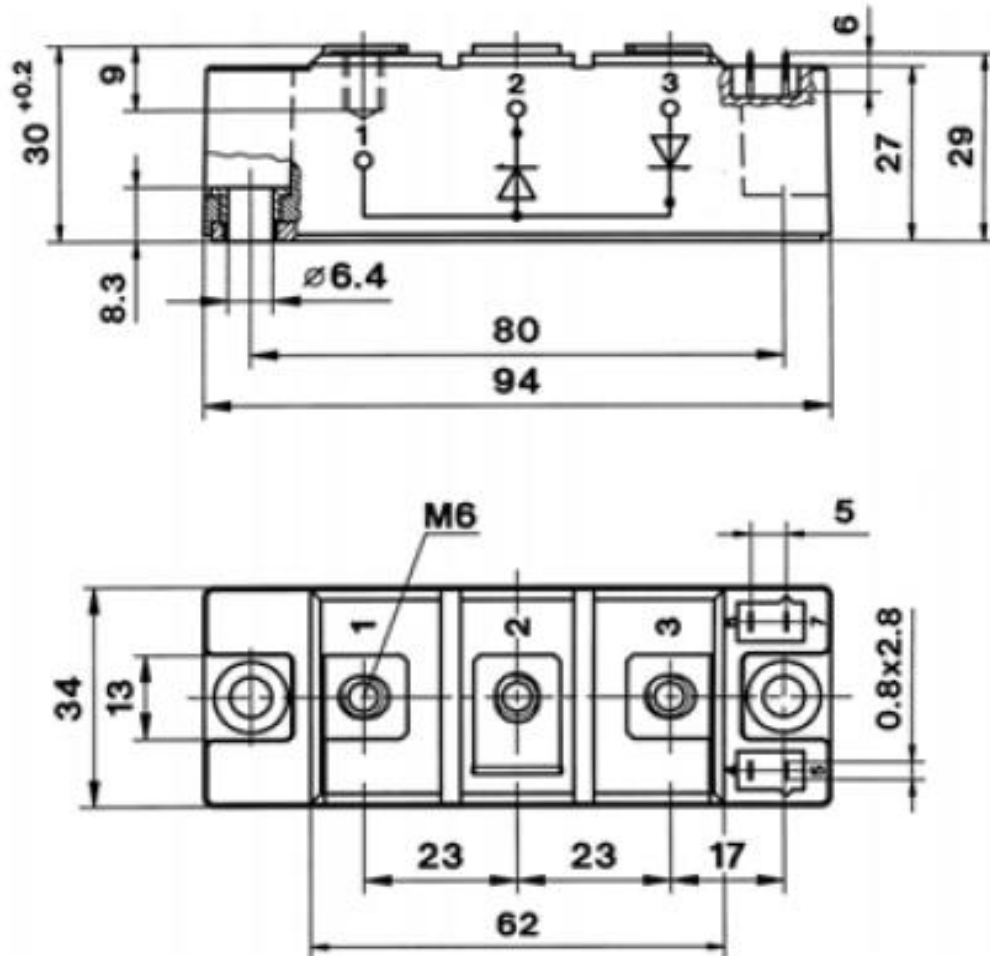
Parameter	Symbol	Min	Max	Typ	Unit	Conditions
Operating temperature	T_j	-40	135		°C	
Storage temperature	T_{stg}	-40	125		°C	
Thermal resistance junction to case (per module)	$R_{th(j-c)}$		0.090		°C/W	SIN 180° conduction mounting surfaces smooth, flat and greased
Thermal resistance case to sink (per module)	$R_{th(c-s)}$		0.050		°C/W	
Mounting torque case-heatsink	T	4.5	5.5		N·m	
Mounting torque busbar-terminals	T	4.5	5.5		N·m	
Weight	W			170	g	



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OUTLINE AND DIMENSIONS



(all dimensions in mm)