

## Technical Data

# PST MDC700/16

## RECTIFIER DIODE MODULE

### Features:

- Heat transfer through aluminum nitride ceramic isolated metal baseplate
- Precious metal pressure contacts for high reliability

### 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

Device Type	$V_{RRM}$ (1)	$V_{RSM}$ (1)
PST MDC700/16	1600 V	1700 V

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  $+150\text{ °C}$ .

(2) 10 ms max. pulse width

(3) Maximum value for  $T_j = 150\text{ °C}$ .

$V_{RRM}$  = Repetitive peak reverse voltage

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

Repetitive peak reverse leakage current	$I_{RRM}$	50 mA (3)
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### Conducting

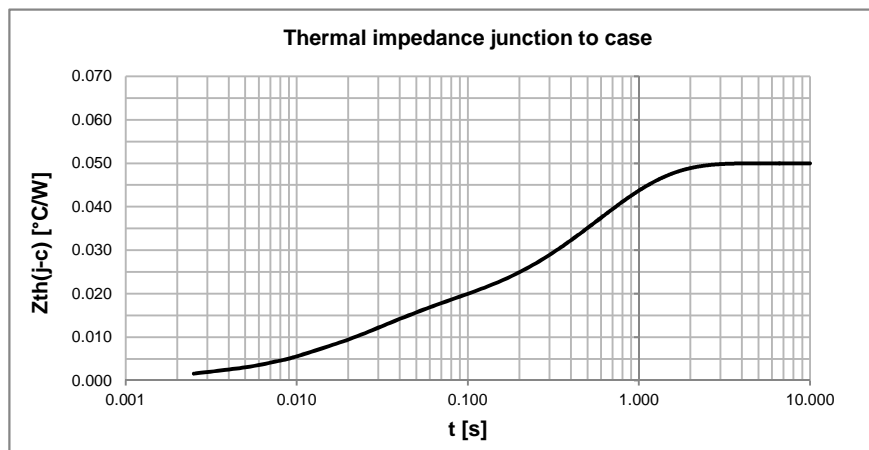
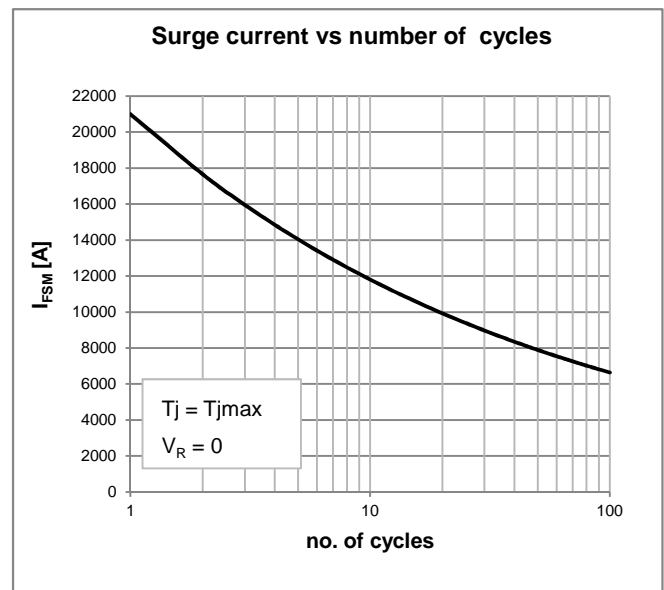
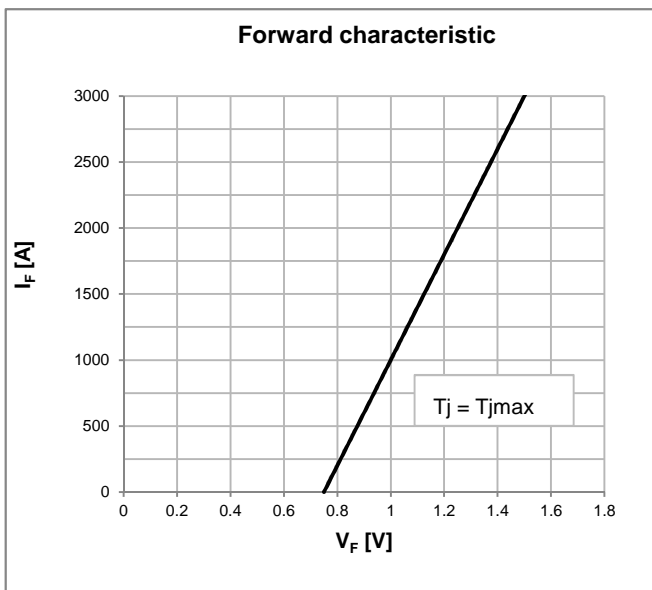
Parameter	Symbol	Min	Max	Typ	Unit	Conditions
Average value of forward current	$I_{F(AV)}$		780		A	50 Hz sinewave, $180^\circ$ conduction, $T_c = 100\text{ °C}$
RMS value of forward current	$I_{F(RMS)}$		1225		A	
Peak one cycle surge (non repetitive) current	$I_{FSM}$		21		kA	50 Hz sinewave, $180^\circ$ conduction, $T_j = T_{jmax}$ , $V_R = 0$
I square t	$I^2 t$		2205		$kA^2s$	$T_j = T_{jmax}$
Peak forward voltage	$V_{FM}$		1.15		V	Forward current 1600 A, $T_{jmax}$
Threshold voltage	$V_{F(TO)}$		0.75		V	$T_j = T_{jmax}$
Forward slope resistance	$r_F$		0.25		$m\Omega$	$T_j = T_{jmax}$
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	150		°C	
Thermal resistance junction to case (per element)	$R_{th(j-c)}$		0.050		°C/W	SIN 180° conduction mounting surfaces smooth, flat and greased
Thermal resistance case to sink (per element)	$R_{th(c-s)}$		0.020		°C/W	
Mounting torque case-heatsink	$T$	4	6		N·m	
Mounting torque busbar-terminals	$T$	12	18		N·m	
Weight	$W$			1600	g	



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### OUTLINE AND DIMENSIONS

