



# 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)

|   |           |           |
|---|-----------|-----------|
| Repetitive peak reverse leakage current | $I_{RRM}$ | 75 mA (3) |
|---|-----------|-----------|

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  $T_j = T_{jmax}$

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

#### Conducting

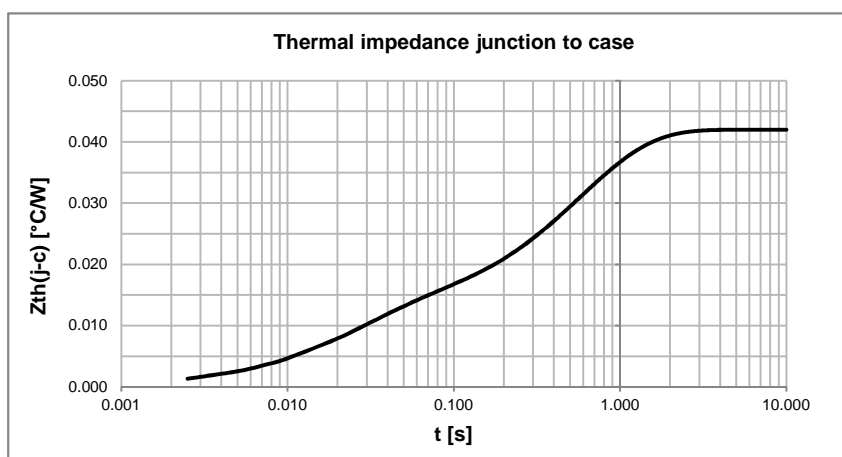
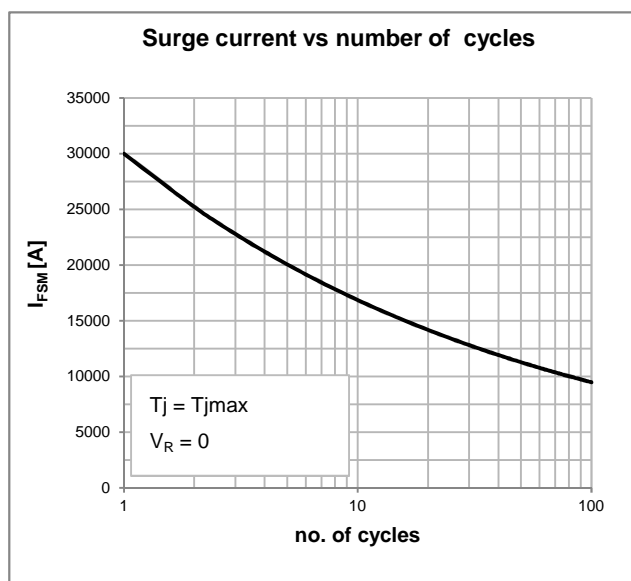
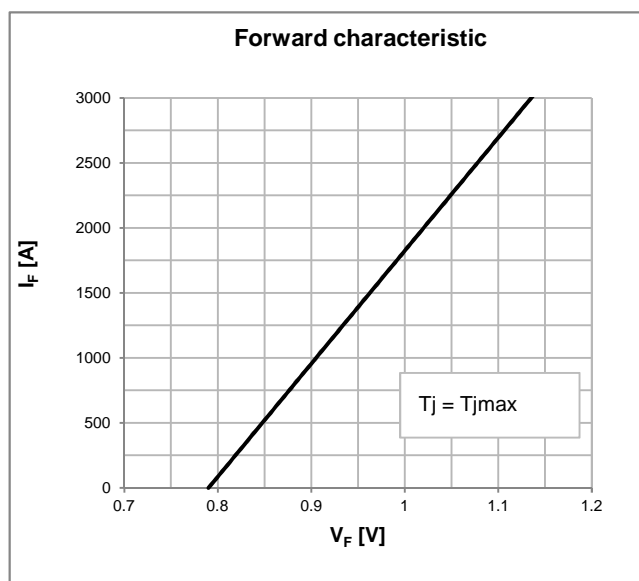
| Parameter                    | Symbol       | Min | Max   | Typ | Unit    | Conditions  |
|------------------------------|--------------|-----|-------|-----|---------|---|
| Average forward current      | $I_{FAV}$    |     | 1080  |     | A       | 50 Hz sine wave, 180° conduction, $T_c = 100\text{ °C}$ |
| RMS forward current          | $I_{F(RMS)}$ |     | 1696  |     | A       | 50 Hz sine wave, 180° conduction, $T_c = 100\text{ °C}$ |
| Surge non repetitive current | $I_{FSM}$    |     | 30    |     | kA      | 50 Hz sine wave<br>Half cycle                           |
| I squared t                  | $I^2 t$      |     | 4500  |     | $kA^2s$ | $V_R = 0$<br>$T_j = T_{jmax}$                           |
| 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 |     | mΩ      | $T_j = T_{jmax}$  |
| RMS isolation voltage        | $V_{INS}$    |     | 4500  |     | V       | AC 50 Hz, 60 s  |

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### Thermal and mechanical characteristics and ratings

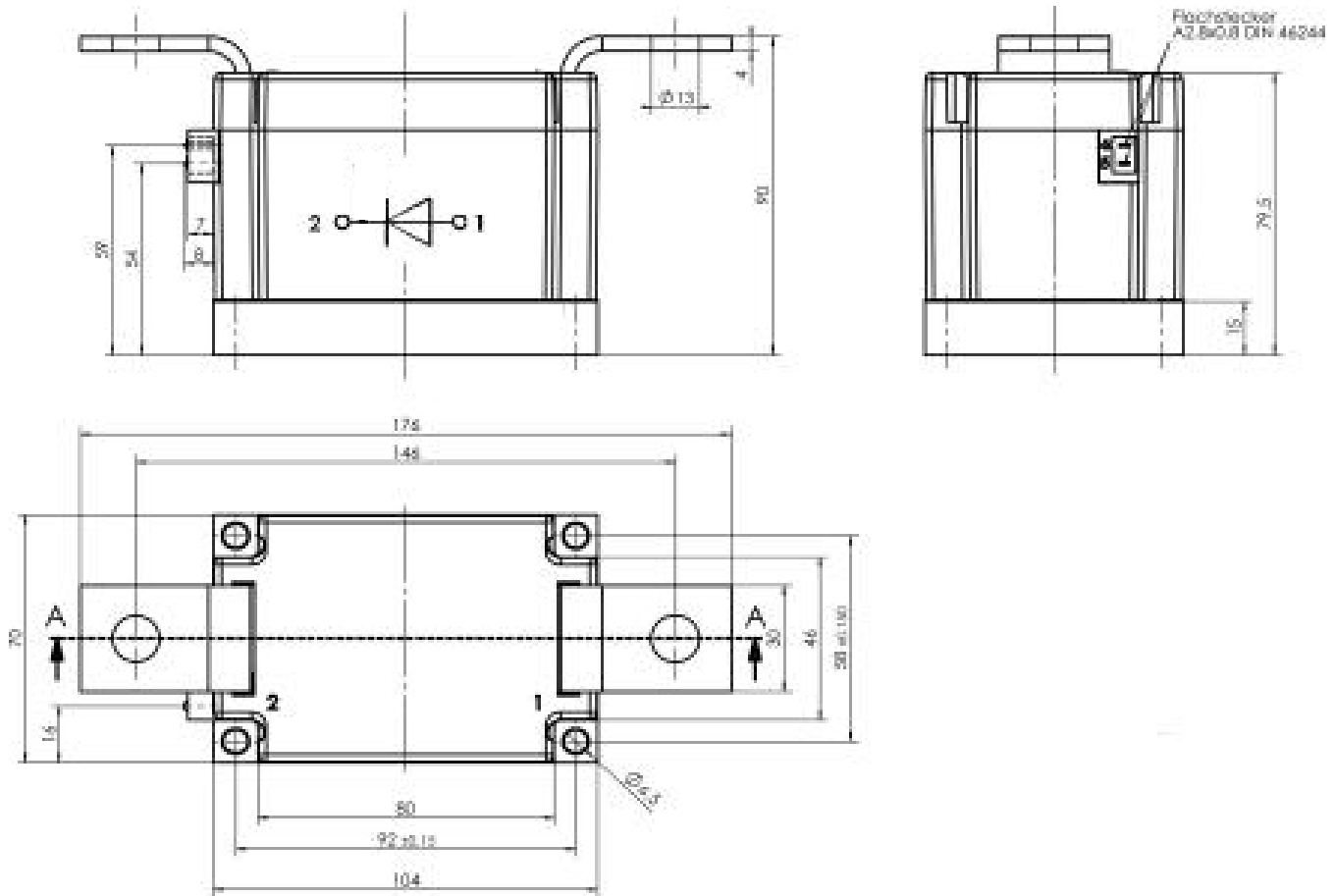
| Parameter                           | Symbol        | Min | Max   | Typ  | Unit | Conditions   |
|-------------------------------------|---------------|-----|-------|------|------|--|
| Operating temperature               | $T_j$         | -40 | 150   |      | °C   |  |
| Storage temperature                 | $T_{stg}$     | -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    |  |



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### OUTLINE AND DIMENSIONS



(all dimensions in mm)