

## Axial lead diode

### Standard silicon rectifier diodes

#### P 2000 A ... P 2000 S

**Forward Current: 20 A**

**Reverse Voltage: 50 to 1200 V**

### Features

- Max. solder temperature: 260°C
- Plastic material has UL classification 94V-0

### Mechanical Data

- Plastic case: 8 x 7,5 [mm]
- Weight approx.: 2,4 g
- Terminals: plated terminals solderable per MIL-STD-750
- Mounting position: any
- Standard packaging: 500 pieces per ammo or 1000 pieces per reel

1) Valid, if leads are kept at ambient temperatur  $T_A = 50^\circ\text{C}$  at a distance 0 mm from case

2)  $I_F = 5 \text{ A}$ ,  $T_j = 25^\circ\text{C}$ ,  $I_F=20\text{A}$  for types: P2000A-G < 940mV, P2000J-S < 1000mV

3)  $T_A = 25^\circ\text{C}$

4) Thermal resistance from junction to lead/terminal at a distance 0 mm from case

5) Max. junction temperatue  $T_j \leq 185^\circ\text{C}$  in reverse mode  $V_R=50\%V_{RRM}$ ,  $T_j \leq 200^\circ\text{C}$  in bypass mode

| Type     | Repetitive peak reverse voltage<br>$V_{RRM}$<br>V | Surge peak reverse voltage<br>$V_{RSM}$<br>V | Max. reverse recovery time<br>$t_{rr}$<br>ns | Max. forward voltage<br>$V_F^2)$ |
|----------|---|--|--|----------------------------------|
| P 2000 A | 50  | 50   | -  | 0,85                             |
| P 2000 B | 100   | 100  | -  | 0,85                             |
| P 2000 D | 200   | 200  | -  | 0,85                             |
| P 2000 G | 400   | 400  | -  | 0,85                             |
| P 2000 J | 600   | 600  | -  | 0,87                             |
| P 2000 K | 800   | 800  | -  | 0,87                             |
| P 2000 M | 1000  | 1000   | -  | 0,87                             |
| P 2000 S | 1200  | 1200   | -  | 0,87                             |

### Absolute Maximum Ratings

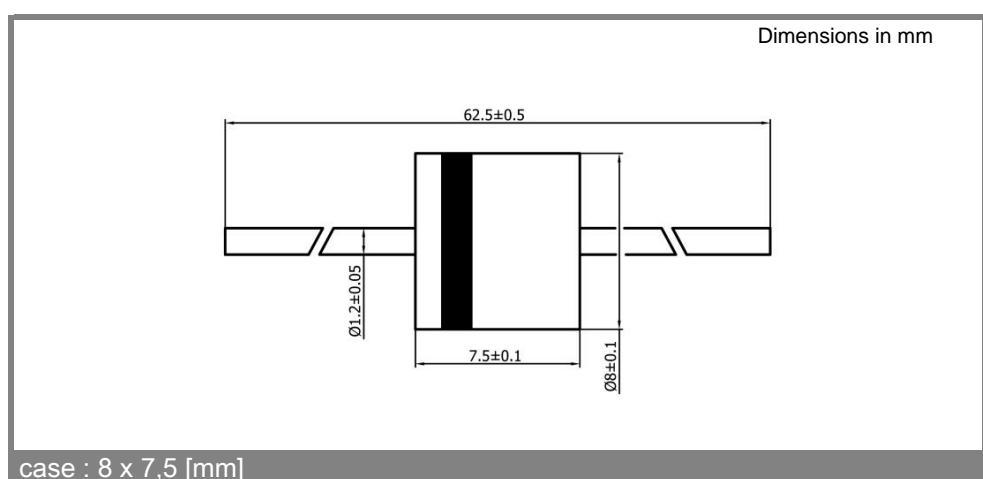
$T_A = 25^\circ\text{C}$ , unless otherwise specified

| Symbol    | Conditions   | Values  | Units                |
|-----------|--|---|----------------------|
| $I_{FAV}$ | Max. averaged fwd. current, R-load, $T_A = 50^\circ\text{C}$ <sup>1)</sup> | 20  | A                    |
| $I_{FRM}$ | Repetitive peak forward current $f > 15 \text{ Hz}^1)$                     | 90  | A                    |
| $I_{FSM}$ | Peak forward surge current 50 Hz half sinus-wave <sup>3)</sup>             | 650   | A                    |
| $i^2t$    | Rating for fusing, $t < 10 \text{ ms}$ <sup>3)</sup>                       | 2100  | $\text{A}^2\text{s}$ |
| $R_{thA}$ | Max. thermal resistance junction to ambient <sup>1)</sup>                  |   | K/W                  |
| $R_{thL}$ | Max. thermal resistance junction to terminals <sup>4)</sup>                | 1   | K/W                  |
| $T_j$     | Operating junction temperature<br>( $T_j \leq 200^\circ\text{C}$ )         | -50 ... +175 ( $T_j \leq 200^\circ\text{C}$ ) | $^\circ\text{C}$     |
| $T_s$     | Storage temperature  | -50 ... +175                                  | $^\circ\text{C}$     |

### Characteristics

$T_A = 25^\circ\text{C}$ , unless otherwise specified

| Symbol    | Conditions  | Values | Units         |
|-----------|---|--------|---------------|
| $I_R$     | Maximum leakage current, $T_j = 25^\circ\text{C}$ ; $V_R = V_{RRM}$   | <25    | $\mu\text{A}$ |
|           | $T_j = ^\circ\text{C}$ ; $V_R = V_{RRM}$  |        |               |
| $C_J$     | Typical junction capacitance<br>(at MHz and applied reverse voltage of V)   | -      | pF            |
| $Q_{rr}$  | Reverse recovery charge<br>( $U_R = V$ ; $I_F = A$ ; $dI_F/dt = A/\text{ms}$ )  | -      | $\mu\text{C}$ |
| $E_{RSM}$ | Non repetitive peak reverse avalanche energy<br>( $I_R = \text{mA}$ ; $T_j = ^\circ\text{C}$ ; inductive load switched off) | -      | mJ            |



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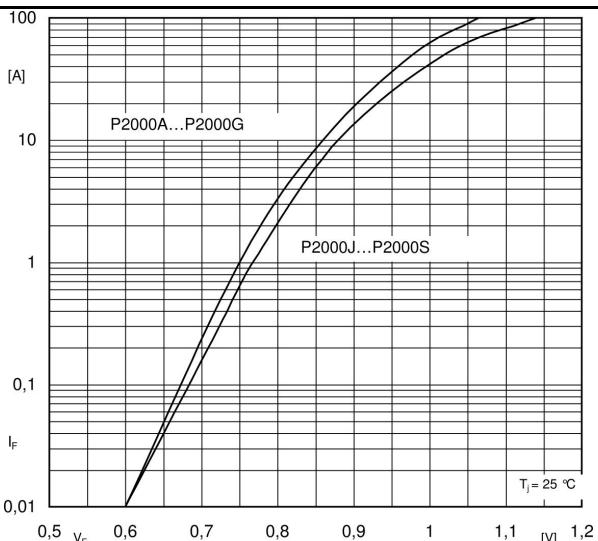


Fig. 1 Forward characteristics (typical values)

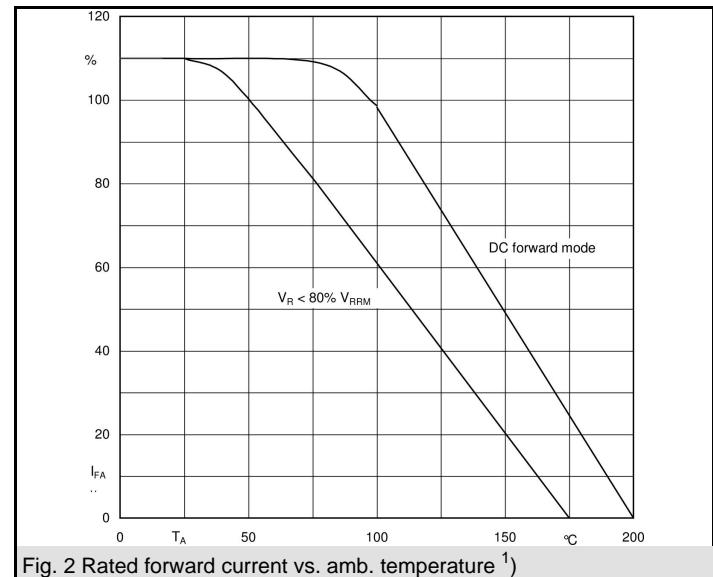


Fig. 2 Rated forward current vs. amb. temperature <sup>1)</sup>

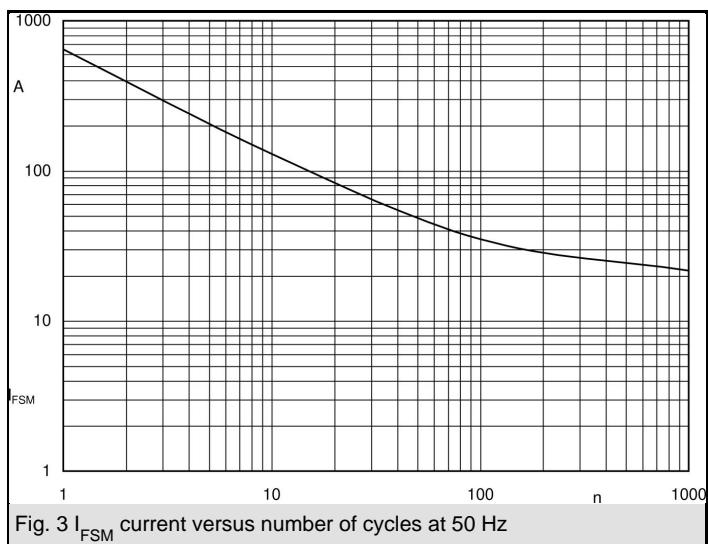


Fig. 3  $I_{FSM}$  current versus number of cycles at 50 Hz

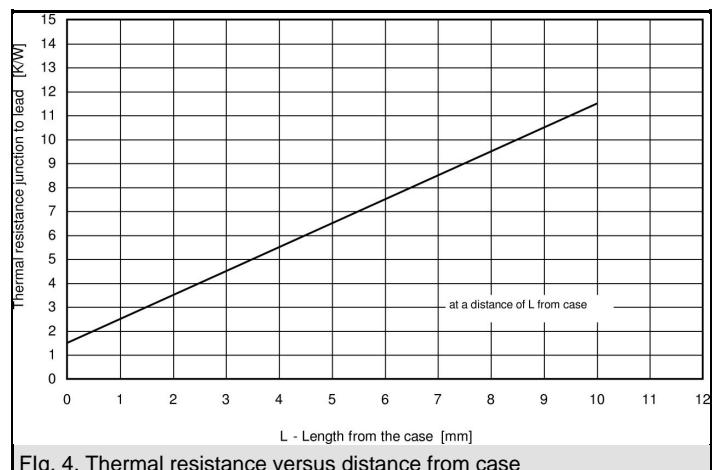


Fig. 4, Thermal resistance versus distance from case