

## Surface mount diode

## Standard silicon rectifier diodes

### SM 4001...SM 4007

Forward Current: 1 A

Reverse Voltage: 50 to 1000 V

### Features

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

### Mechanical Data

- Plastic case Melf / DO-213AB
- Weight approx.: 0,12 g
- Terminals: plated terminals solderable per MIL-STD-750
- Mounting position : any
- Standard packaging: 5000 pieces per reel

1) Max. temperature of the terminals  $T_T = 75^\circ\text{C}$

2)  $I_F = 1\text{ A}$ ,  $T_j = 25^\circ\text{C}$

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

4) Mounted on P.C. board with 25 mm<sup>2</sup> copper pads at each terminal

| Type    | Polarity color band | Repetitive peak reverse voltage<br>$V_{RRM}$<br>V | Surge peak reverse voltage<br>$V_{RSM}$<br>V | Maximum forward voltage<br>$T_j = 25^\circ\text{C}$<br>$I_F = 1\text{ A}$<br>$V_F^{(2)}$<br>V | Maximum reverse recovery time<br>$I_F = -\text{A}$<br>$I_R = -\text{A}$<br>$I_{RR} = -\text{A}$<br>$t_{rr}$<br>ns |
|---------|---------------------|---------------------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| SM 4001 | -                   | 50                                                | 50                                           | 1,1                                                                                           | -                                                                                                                 |
| SM 4002 | -                   | 100                                               | 100                                          | 1,1                                                                                           | -                                                                                                                 |
| SM 4003 | -                   | 200                                               | 200                                          | 1,1                                                                                           | -                                                                                                                 |
| SM 4004 | -                   | 400                                               | 400                                          | 1,1                                                                                           | -                                                                                                                 |
| SM 4005 | -                   | 600                                               | 600                                          | 1,1                                                                                           | -                                                                                                                 |
| SM 4006 | -                   | 800                                               | 800                                          | 1,1                                                                                           | -                                                                                                                 |
| SM 4007 | -                   | 1000                                              | 1000                                         | 1,1                                                                                           | -                                                                                                                 |

### Absolute Maximum Ratings

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

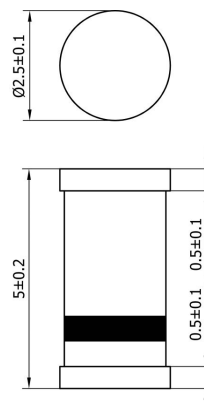
| Symbol    | Conditions                                                   | Values     | Units            |
|-----------|--------------------------------------------------------------|------------|------------------|
| $I_{FAV}$ | Max. averaged fwd. current, R-load, $T_T = 75^\circ\text{C}$ | 1          | A                |
| $I_{FRM}$ | Repetitive peak forward current $f > 15\text{ Hz}^{(1)}$     | 10         | A                |
| $I_{FSM}$ | Peak fwd. surge current 50 Hz half sinus-wave <sup>3)</sup>  | 40         | A                |
| $I^2t$    | Rating for fusing, $t < 10\text{ ms}^{(3)}$                  | 8          | A <sup>2</sup> s |
| $R_{thA}$ | Max. thermal resistance junction to ambient <sup>4)</sup>    | 45         | K/W              |
| $R_{thT}$ | Max. thermal resistance junction to terminals                | 10         | K/W              |
| $T_j$     | Operating junction temperature                               | -50...+175 | °C               |
| $T_s$     | Storage temperature                                          | -50...+175 | °C               |

### Characteristics

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

| Symbol    | Conditions                                                                                                                | Values | Units |
|-----------|---------------------------------------------------------------------------------------------------------------------------|--------|-------|
| $I_R$     | Maximum leakage current, $T_j = 25^\circ\text{C}$ ; $V_R = V_{RRM}$                                                       | <5     | μA    |
|           | $T_j = 100^\circ\text{C}$ ; $V_R = V_{RRM}$                                                                               | <50    | μA    |
| $C_J$     | Typical junction capacitance<br>(at MHz and applied reverse voltage of V)                                                 | -      | pF    |
| $Q_{rr}$  | Reverse recovery charge<br>( $U_R = V$ ; $I_F = A$ ; $dI_F/dt = A/ms$ )                                                   | -      | μC    |
| $E_{RSM}$ | Non repetitive peak reverse avalanche energy<br>( $L = \text{mH}$ ; $T_j = ^\circ\text{C}$ ; inductive load switched off) | -      | mJ    |

Dimensions in mm



case: Melf / DO-213AB

