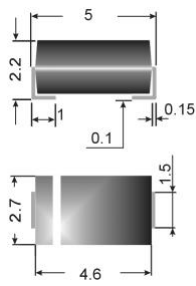


# USA 1A ... USA 1M



## Surface mount diode

## Ultrafast Avalanche Diodes

### USA 1A ... USA 1M

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: SMA / DO-214AC
- Weight approx.: 0,07 g
- Terminals: plated terminals solderable per MIL-STD-750
- Mounting position: any
- Standard packaging: 7500 pieces per reel

1) Max. temperature of the terminals  $T_T = 100\text{ °C}$

2)  $I_F = 1\text{ A}$ ,  $T_J = 25\text{ °C}$

3)  $T_A = 25\text{ °C}$

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>$T_J = 25\text{ °C}$<br>$I_F = 1\text{ A}$<br>$V_F^{(2)}$<br>V | Maximum reverse recovery time<br>$I_F = 0,5\text{ A}$<br>$I_R = 1\text{ A}$<br>$I_{RR} = 0,25\text{ A}$<br>$t_{rr}$<br>ns |
|--------|---------------------|---|--|---|---|
| USA 1A | -                   | 50  | 50   | 1   | 50  |
| USA 1B | -                   | 100   | 100  | 1   | 50  |
| USA 1D | -                   | 200   | 200  | 1   | 50  |
| USA 1G | -                   | 400   | 400  | 1,25  | 50  |
| USA 1J | -                   | 600   | 600  | 1,7   | 75  |
| USA 1K | -                   | 800   | 800  | 1,7   | 75  |
| USA 1M | -                   | 1000  | 1000   | 1,7   | 75  |

### Absolute Maximum Ratings $T_A = 25\text{ °C}$ , unless otherwise specified

| Symbol    | Conditions   | Values         | Units            |
|-----------|--|----------------|------------------|
| $I_{FAV}$ | Max. averaged fwd. current, R-load, $T_T = 100\text{ °C}$ 1) | 1              | A                |
| $I_{FRM}$ | Repetitive peak forward current $f > 15\text{ Hz}$ 1)        | 6              | A                |
| $I_{FSM}$ | Peak fwd. surge current 50 Hz half sinus-wave 3)             | 30             | A                |
| $I^2t$    | Rating for fusing, $t < 10\text{ ms}$ 3)                     | 4,5            | A <sup>2</sup> s |
| $R_{thA}$ | Max. thermal resistance junction to ambient 4)               | 70             | K/W              |
| $R_{thT}$ | Max. thermal resistance junction to terminals                | 30             | K/W              |
| $T_J$     | Operating junction temperature                               | - 50 ... + 150 | °C               |
| $T_s$     | Storage temperature  | - 50 ... + 150 | °C               |

### Characteristics $T_A = 25\text{ °C}$ , unless otherwise specified

| Symbol    | Conditions  | Values | Units |
|-----------|---|--------|-------|
| $I_R$     | Maximum leakage current, $T_J = 25\text{ °C}$ ; $V_R = V_{RRM}$<br>$T_J = \text{°C}$ ; $V_R = V_{RRM}$                      | <3     | 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>( $I_R = 1\text{ mA}$ ; $T_J = 25\text{ °C}$ ; inductive load switched off) | 20     | mJ    |

