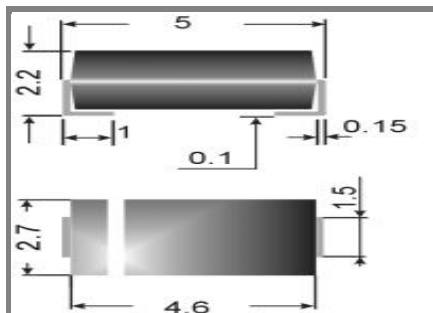


# P4 SMAJ 150...P4 SMAJ 180CA



Surface mount diode

## Unidirectional and bidirectional Transient Voltage Suppressor diodes

P4 SMAJ 150...P4 SMAJ 180CA

**Pulse Power Dissipation: 400 W**

**Maximum Stand-off voltage: 150 ... 180 V**

### Features

- Max. solder temperature: 260°C
- Plastic material has UL classification 94V-0
- For bidirectional types (suffix "C" or "CA") electrical characteristics apply in both directions
- The standard tolerance of the breakdown voltage for each type is  $\pm 10\%$ . Suffix "A" denotes a tolerance of  $\pm 5\%$  for the breakdown voltage.

### 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

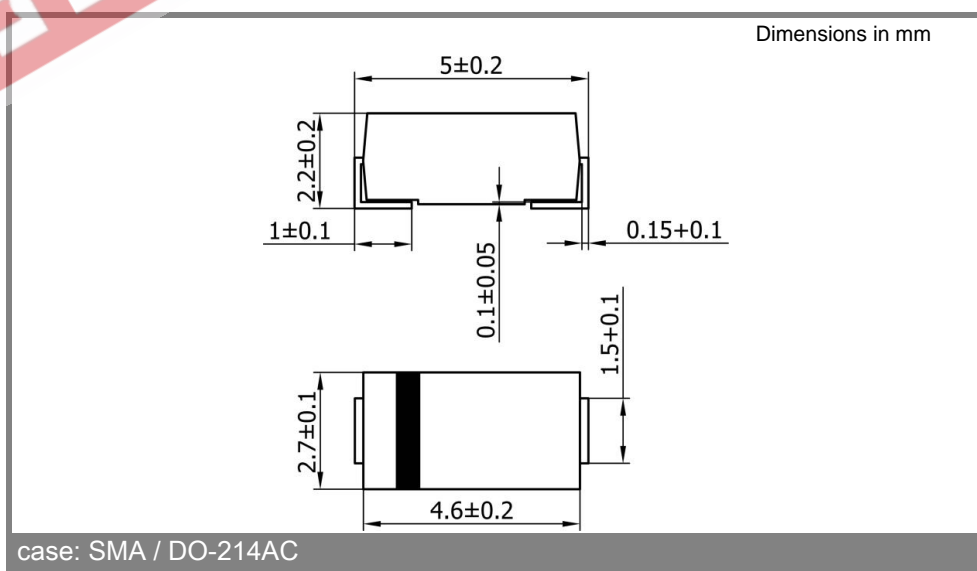
1) Non-repetitive current pulse see curve  $I_{PPM} = f(t_r)$

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

3) Unidirectional diodes only

| Absolute Maximum Ratings |  | $T_A = 25\text{ }^\circ\text{C}$ , unless otherwise specified |                  |
|--------------------------|--|---|------------------|
| Symbol                   | Conditions   | Values  | Units            |
| $P_{PPM}$                | Peak pulse power dissipation (10/1000 $\mu\text{s}$ waveform) <sup>1)</sup> $T_a = 25\text{ }^\circ\text{C}$ | 400   | W                |
| $P_{M(AV)}$              | Steady state power dissipation <sup>2)</sup> , $T_a = 25\text{ }^\circ\text{C}$                              | 1   | W                |
| $I_{FSM}$                | Peak forward surge current, 60 Hz half sine-wave, <sup>3)</sup> $T_a = 25\text{ }^\circ\text{C}$             | 40  | A                |
| $R_{thA}$                | Max. thermal resistance junction to ambient <sup>2)</sup>  | 70  | K/W              |
| $R_{thT}$                | Max. thermal resistance junction to terminal   | 30  | K/W              |
| $T_j$                    | Operating junction temperature   | - 50 ... + 150  | $^\circ\text{C}$ |
| $T_s$                    | Storage temperature  | - 50 ... + 150  | $^\circ\text{C}$ |
| $V_f$                    | Max. instant. forw. voltage $I_f = 25\text{ A}$ <sup>3)</sup>  | <3,5  | V                |
|                          |  | -   | V                |

| Type         | Characteristics                               |                        | Breakdown voltage@ $I_T$ |           | Test current $I_T$<br>mA | Max. clamping voltage@ $I_{PPM}$ |                |
|--------------|---|------------------------|--------------------------|-----------|--------------------------|----------------------------------|----------------|
|              | Max stand-off voltage@ $I_D$<br>$V_{WM}$<br>V | $I_D$<br>$\mu\text{A}$ | min.<br>V                | max.<br>V |                          | $V_C$<br>V                       | $I_{PPM}$<br>A |
| P4 SMAJ 150  | 150   | 5                      | 167                      | 204       | 1                        | 268                              | 1,5            |
| P4 SMAJ 150A | 150   | 5                      | 167                      | 185       | 1                        | 243                              | 1,6            |
| P4 SMAJ 160  | 160   | 5                      | 178                      | 217       | 1                        | 287                              | 1,4            |
| P4 SMAJ 160A | 160   | 5                      | 178                      | 198       | 1                        | 259                              | 1,5            |
| P4 SMAJ 170  | 170   | 5                      | 189                      | 231       | 1                        | 304                              | 1,3            |
| P4 SMAJ 170A | 170   | 5                      | 189                      | 210       | 1                        | 275                              | 1,4            |
| P4 SMAJ 180  | 180   | 5                      | 209                      | 255       | 1                        | 0,9                              | 344            |
| P4 SMAJ 180A | 180   | 5                      | 209                      | 231       | 1                        | 0,91                             | 328            |



# P4 SMAJ 150...P4 SMAJ 180CA

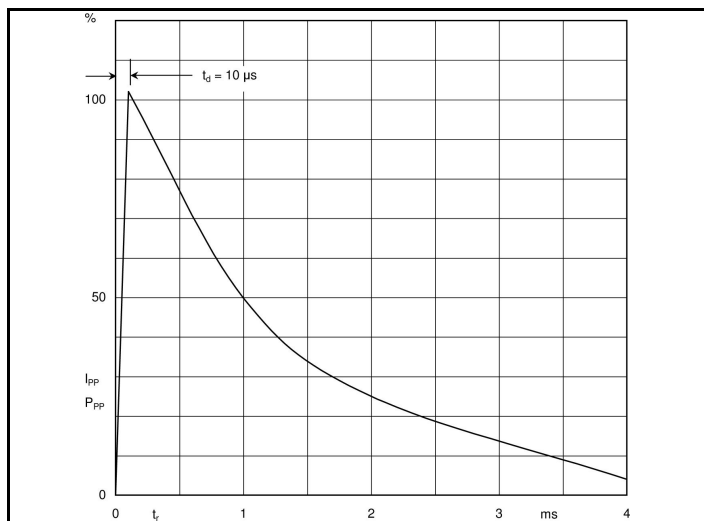


Fig. 1 10/1000  $\mu$ s - pulse waveform

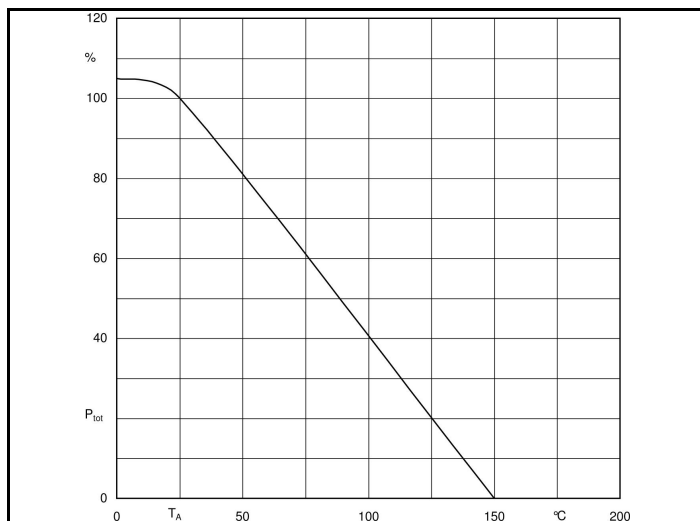


Fig. 2 Rated power dissipation vs. amb.temp. <sup>2)</sup>

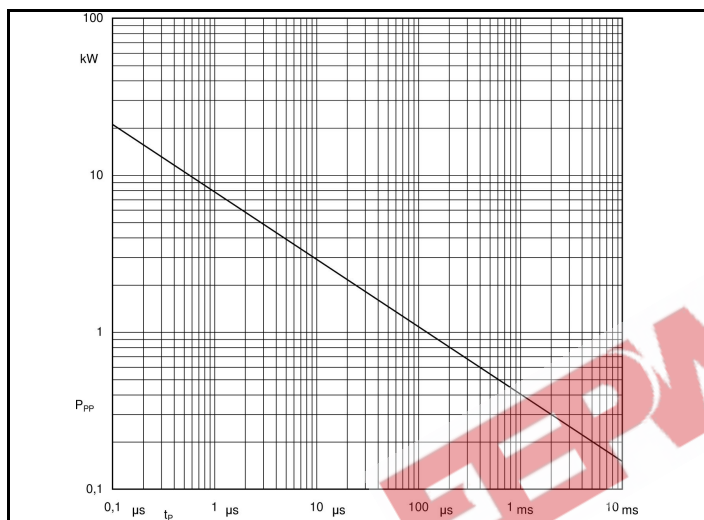


Fig. 3 Peak pulse power versus pulse duration

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