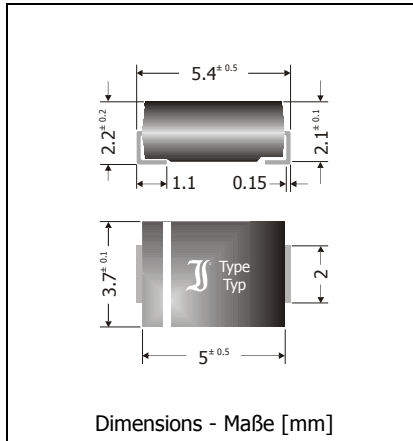


## P6SMB220 ... P6SMB550CA

**Surface mount unidirectional and bidirectional Transient Voltage Suppressor Diodes**  
**Unidirektionale und bidirektionale Spannungs-Begrenzer-Dioden für die Oberflächenmontage**

Version 2010-12-06



|                                                                                       |                     |
|---------------------------------------------------------------------------------------|---------------------|
| Peak pulse power dissipation<br>Impuls-Verlustleistung                                | 600 W               |
| Nominal breakdown voltage<br>Nominale Abbruch-Spannung                                | 220...550 V         |
| Plastic case<br>Kunststoffgehäuse                                                     | ~ SMB<br>~ DO-214AA |
| Weight approx. – Gewicht ca.                                                          | 0.1 g               |
| Plastic material has UL classification 94V-0<br>Gehäusematerial UL94V-0 klassifiziert |                     |
| Standard packaging taped and reeled<br>Standard Lieferform gegurtet auf Rollen        |                     |



For bidirectional types, suppressor characteristics apply in both directions; add suffix "C" or "CA".  
 Für bidirektionale Dioden gelten die Begrenzer-Eigenschaften in beiden Richtungen;  
 es ist das Suffix "C" oder "CA" zu ergänzen.

**TVS diodes having stand-off voltage  $V_{WM} = 5.0 \dots 170$  V: please refer to datasheet P6SMBJ5.0 ... 170CA**  
**TVS-Dioden mit Sperrspannung  $V_{WM} = 5.0 \dots 170$  V: siehe Datenblatt P6SMBJ5.0 ... 170CA**

### Maximum ratings and Characteristics

### Grenz- und Kennwerte

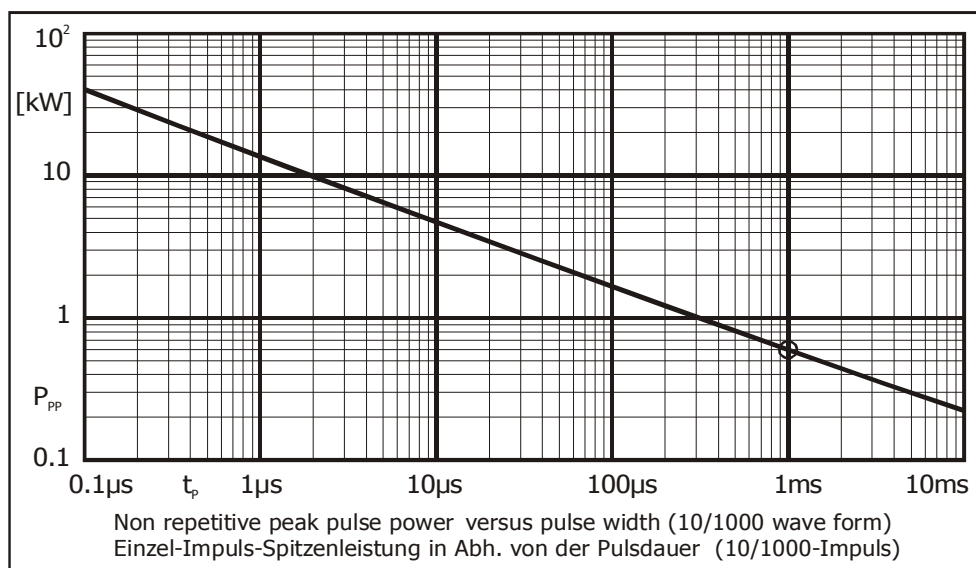
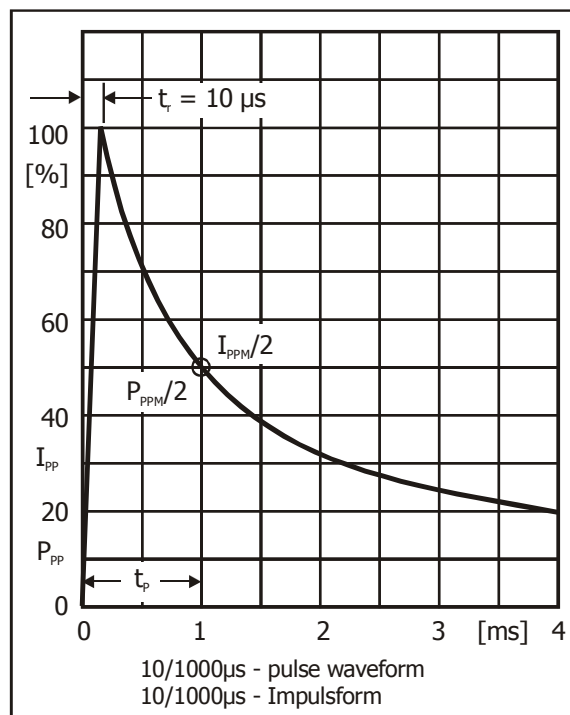
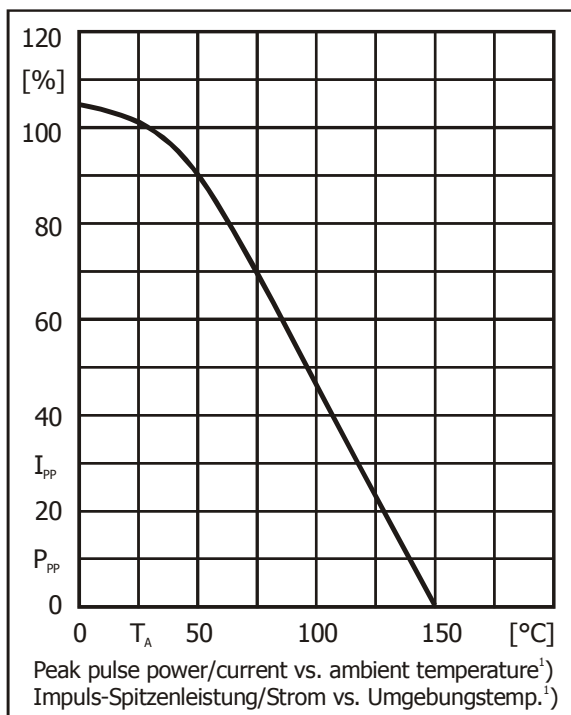
|                                                                                                                  |                          |             |                        |
|------------------------------------------------------------------------------------------------------------------|--------------------------|-------------|------------------------|
| Peak pulse power dissipation (10/1000 $\mu$ s waveform)<br>Impuls-Verlustleistung (Strom-Impuls 10/1000 $\mu$ s) | $T_A = 25^\circ\text{C}$ | $P_{PPM}$   | 600 W <sup>1)</sup>    |
| Steady state power dissipation<br>Verlustleistung im Dauerbetrieb                                                | $T_T = 75^\circ\text{C}$ | $P_{M(AV)}$ | 5 W                    |
| Peak forward surge current, 60 Hz half sine-wave<br>Stoßstrom für eine 60 Hz Sinus-Halbwellen                    | $T_A = 25^\circ\text{C}$ | $I_{FSM}$   | 100 A <sup>2)</sup>    |
| Max. instantaneous forward voltage<br>Augenblickswert der Durchlass-Spannung                                     | $I_F = 25$ A             | $V_F$       | < 3.0 V <sup>2)</sup>  |
| Operating junction temperature – Sperrschichttemperatur                                                          |                          | $T_j$       | -50...+150°C           |
| Storage temperature – Lagerungstemperatur                                                                        |                          | $T_S$       | -50...+150°C           |
| Thermal resistance junction to ambient air<br>Wärmewiderstand Sperrschicht – umgebende Luft                      |                          | $R_{thA}$   | < 45 K/W <sup>3)</sup> |
| Thermal resistance junction to terminal<br>Wärmewiderstand Sperrschicht – Anschluss                              |                          | $R_{thT}$   | < 15 K/W               |

- 1 Non-repetitive pulse see curve  $I_{pp} = f(t)$  /  $P_{pp} = f(t)$   
Höchstzulässiger Spitzenwert eines einmaligen Impulses, siehe Kurve  $I_{pp} = f(t)$  /  $P_{pp} = f(t)$
- 2 Unidirectional diodes only – Nur für unidirektionale Dioden
- 3 Mounted on P.C. board with 50 mm<sup>2</sup> copper pads at each terminal  
Montage auf Leiterplatte mit 50 mm<sup>2</sup> Kupferbelag (Lötpad) an jedem Anschluss

**Maximum ratings**
**Grenzwerte**

| Type<br>Typ | Breakdown voltage at $I_T = 1\text{ mA}$<br>Abbruch-Spannung bei $I_T = 1\text{ mA}$ |           | Stand-off voltage<br>Sperrspannung | Max. rev. current<br>Max. Sperrstrom<br>at / bei $V_{WM}$ | Max. clamping voltage<br>Max. Begrenzer-Spannung<br>at / bei $I_{PPM}$ (10/1000 $\mu\text{s}$ ) |               |
|-------------|--------------------------------------------------------------------------------------|-----------|------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------|
|             | $V_{BR}$ [V]                                                                         |           | $V_{WM}$ [V]                       | $I_D$ [ $\mu\text{A}$ ]                                   | $V_C$ [V]                                                                                       | $I_{PPM}$ [A] |
| P6SMB220    | $220 \pm 10\%$                                                                       | 198...242 | 175                                | 5                                                         | 344                                                                                             | 1.7           |
| P6SMB220A   | $220 \pm 5\%$                                                                        | 209...231 | 185                                | 5                                                         | 328                                                                                             | 1.8           |
| P6SMB250    | $250 \pm 10\%$                                                                       | 225...275 | 202                                | 5                                                         | 360                                                                                             | 1.7           |
| P6SMB250A   | $250 \pm 5\%$                                                                        | 237...263 | 214                                | 5                                                         | 344                                                                                             | 1.7           |
| P6SMB300    | $300 \pm 10\%$                                                                       | 270...330 | 243                                | 5                                                         | 430                                                                                             | 1.4           |
| P6SMB300A   | $300 \pm 5\%$                                                                        | 285...315 | 256                                | 5                                                         | 414                                                                                             | 1.4           |
| P6SMB350    | $350 \pm 10\%$                                                                       | 315...385 | 284                                | 5                                                         | 504                                                                                             | 1.2           |
| P6SMB350A   | $350 \pm 5\%$                                                                        | 332...368 | 300                                | 5                                                         | 482                                                                                             | 1.2           |
| P6SMB400    | $400 \pm 10\%$                                                                       | 360...440 | 324                                | 5                                                         | 574                                                                                             | 1.0           |
| P6SMB400A   | $400 \pm 5\%$                                                                        | 380...420 | 342                                | 5                                                         | 548                                                                                             | 1.1           |
| P6SMB440    | $440 \pm 10\%$                                                                       | 396...484 | 356                                | 5                                                         | 631                                                                                             | 1.0           |
| P6SMB440A   | $440 \pm 5\%$                                                                        | 418...462 | 376                                | 5                                                         | 602                                                                                             | 1.0           |
| P6SMB480    | $480 \pm 10\%$                                                                       | 432...528 | 388                                | 5                                                         | 686                                                                                             | 0.87          |
| P6SMB480A   | $480 \pm 5\%$                                                                        | 456...504 | 408                                | 5                                                         | 658                                                                                             | 0.91          |
| P6SMB530    | $530 \pm 10\%$                                                                       | 477...583 | 429                                | 5                                                         | 764                                                                                             | 0.79          |
| P6SMB530A   | $530 \pm 5\%$                                                                        | 503...556 | 477                                | 5                                                         | 729                                                                                             | 0.82          |
| P6SMB550    | $550 \pm 10\%$                                                                       | 495...605 | 445                                | 5                                                         | 793                                                                                             | 0.76          |
| P6SMB550A   | $550 \pm 5\%$                                                                        | 522...577 | 495                                | 5                                                         | 760                                                                                             | 0.79          |

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**TVS-Dioden mit Sperrspannung  $V_{WM} = 5.0 \dots 170\text{ V}$ : siehe Datenblatt P6SMBJ5.0 ... 170CA**



1 Mounted on P.C. board with  $50 \text{ mm}^2$  copper pads at each terminal  
 Montage auf Leiterplatte mit  $50 \text{ mm}^2$  Kupferbelag (Lötpad) an jedem Anschluss