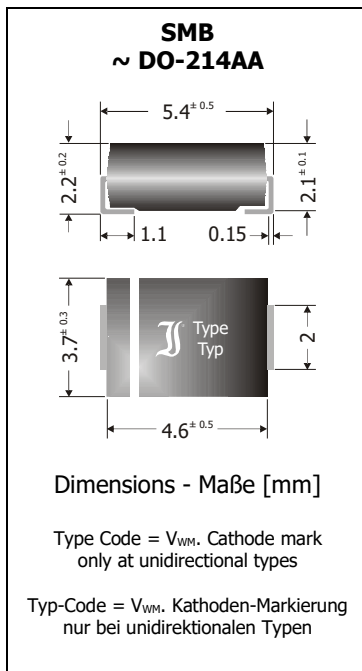


1.0SMBJ5.0A ... 1.0SMBJ120CA
SMD Transient Voltage Suppressor Diodes
SMD Spannungs-Begrenzer-Dioden
P_{PPM} = 1000 W **V_{WM} = 5.0 ... 120 V**
P_{M(AV)} = 5.0 W **V_{BR min} = 6.4 ... 133 V**
T_{jmax} = 150°C

Version 2020-04-21

**Typical Applications**
 Over-voltage protection
 ESD protection
 Free-wheeling diodes
 Commercial grade ¹⁾
Features
 Uni- and Bidirectional versions
 Peak pulse power of 1000 W (10/1000 μs waveform)
 Very fast response time
 Compliant to RoHS, REACH, Conflict Minerals ¹⁾
Mechanical Data ¹⁾
 Taped and reeled
 Weight approx.
 Case material
 Solder & assembly conditions

3000 / 13"

0.1 g

UL 94V-0

260°C/10s

MSL = 1

Typische Anwendungen
 Schutz gegen Überspannung
 ESD-Schutz
 Freilauf-Dioden
 Standardausführung ¹⁾
Besonderheiten
 Uni- und Bidirektionale Versionen
 1000 W Impuls-Verlustleistung (10/1000 μs Strom-Impuls)
 Sehr schnelle Ansprechzeit
 Konform zu RoHS, REACH, Konfliktmineralien ¹⁾
Mechanische Daten ¹⁾

Gegurtet auf Rolle

Gewicht ca.

Gehäusematerial

Löt- und Einbaubedingungen

 For bidirectional types (suffix "CA"), electrical characteristics apply in both directions.
 Für bidirektionale Dioden (mit Suffix "CA") gelten die elektrischen Werte in beiden Richtungen.
Maximum ratings ²⁾**Grenzwerte ²⁾**

| | | | |
|--|--|----------------------------------|------------------------------|
| Peak pulse power dissipation (10/1000 μs waveform) Impuls-Verlustleistung (Strom-Impuls 10/1000 μs) | T _A = 25°C | P _{PPM} | 1000 W ³⁾ |
| Steady state power dissipation – Verlustleistung im Dauerbetrieb | T _T = 75°C | P _{M(AV)} | 5 W |
| Peak forward surge current Stoßstrom in Fluss-Richtung | Half sine-wave Sinus-Halbwellen 60 Hz (8.3 ms) | I _{FSM} | 100 A ⁴⁾ |
| Junction temperature – Sperrschichttemperatur Storage temperature – Lagerungstemperatur | | T _j T _s | -50...+150°C -50...+150°C |

Characteristics**Kennwerte**

| | | | |
|--|---|--------------------------------------|--------------------------------|
| Max. instantaneous forward voltage Augenblickswert der Durchlass-Spannung | I _F = 25 A V _{BR} ≤ 50 V | V _F | < 3.5 V ⁴⁾ |
| Typ. thermal resistance junction to ambient – Typ. Wärmewiderstand Sperrschicht-Umgebung Typ. thermal resistance junction to terminal – Typ. Wärmewiderstand Sperrschicht-Anschluss | | R _{thA} R _{thT} | 45 K/W ⁵⁾ 15 K/W |

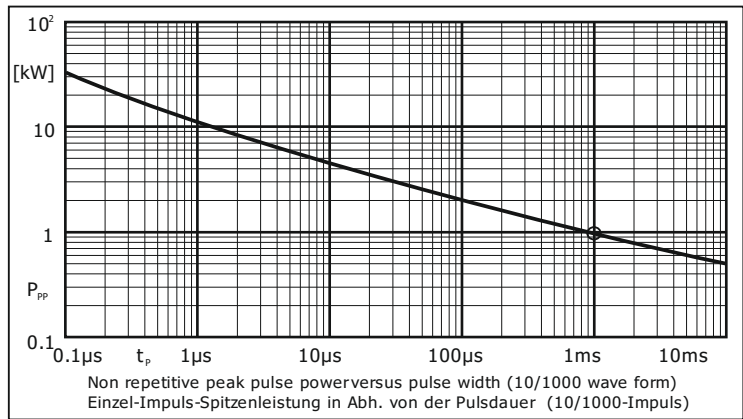
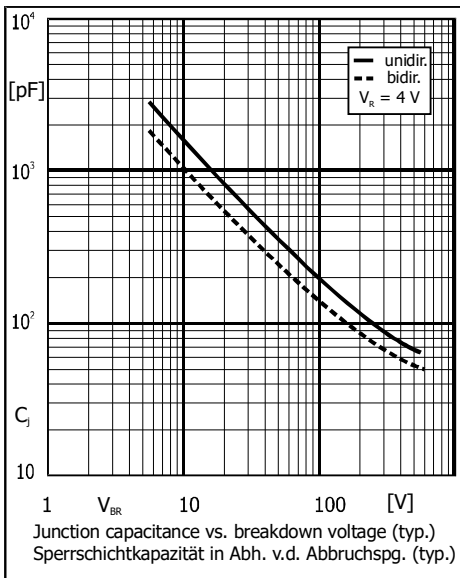
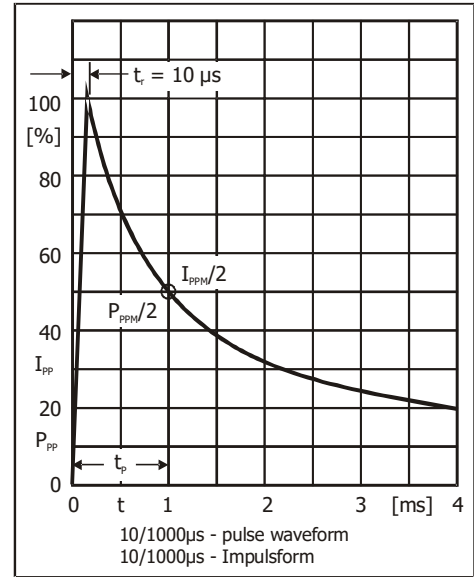
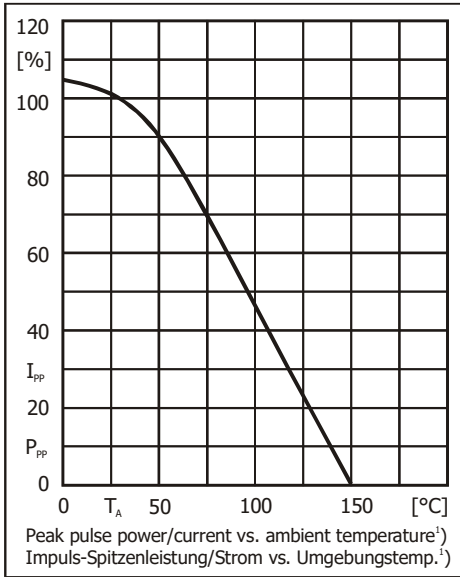
- Please note the [detailed information on our website](#) or at the beginning of the data book
Bitte beachten Sie die [detaillierten Hinweise auf unserer Internetseite](#) bzw. am Anfang des Datenbuches
- T_A = 25°C unless otherwise specified – T_A = 25°C wenn nicht anders angegeben
- Non-repetitive 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)
- Unidirectional diodes only – Nur für unidirektionale Dioden
- Mounted on P.C. board with 25 mm² copper pads at each terminal
Montage auf Leiterplatte mit 25 mm² Kupferbelag (Lötpad) an jedem Anschluss

Characteristics (T_j = 25°C)
Kennwerte (T_j = 25°C)

| Type Typ 1.0SMBJ... | | Stand-off voltage Sperrspannung | Max. rev. current Max. Sperrstrom at / bei V _{WM} ¹⁾ | Breakdown voltage at Abbruch-Spannung bei I _T = 1 mA *) 10 mA | | Max. clamping voltage Max. Begrenzer-Spannung at / bei I _{PPM} (10/1000 μs) | |
|----------------------------------|---------------|------------------------------------|--|--|-------------------------|--|----------------------|
| unidirectional | bidirectional | V _{WM} [V] | I _D [μA] | V _{BR} min [V] | V _{BR} max [V] | V _C [V] | I _{PPM} [A] |
| 5.0A | 5.0CA | 5.0 | 800 | 6.40 *) | 7.00*) | 9.2 | 108.7 |
| 6.0A | 6.0CA | 6.0 | 800 | 6.67 *) | 7.37 *) | 10.3 | 97.1 |
| 6.5A | 6.5CA | 6.5 | 500 | 7.22 *) | 8.0 *) | 11.2 | 89.3 |
| 7.0A | 7.0CA | 7.0 | 200 | 7.78 *) | 8.6 *) | 12.0 | 83.3 |
| 7.5A | 7.5CA | 7.5 | 100 | 8.33 | 9.21 | 12.9 | 77.5 |
| 8.0A | 8.0CA | 8.0 | 50 | 8.89 | 9.83 | 13.6 | 73.5 |
| 8.5A | 8.5CA | 8.5 | 10 | 9.44 | 10.40 | 14.4 | 69.4 |
| 9.0A | 9.0CA | 9.0 | 5 | 10.00 | 11.10 | 15.4 | 64.9 |
| 10A | 10CA | 10 | 5 | 11.10 | 12.30 | 17.0 | 58.8 |
| 11A | 11CA | 11 | 5 | 12.20 | 13.50 | 18.2 | 54.9 |
| 12A | 12CA | 12 | 5 | 13.30 | 14.70 | 19.9 | 50.3 |
| 13A | 13CA | 13 | 1 | 14.40 | 15.90 | 21.5 | 46.5 |
| 14A | 14CA | 14 | 1 | 15.60 | 17.20 | 23.2 | 43.1 |
| 15A | 15CA | 15 | 1 | 16.70 | 18.50 | 24.4 | 41.0 |
| 16A | 16CA | 16 | 1 | 17.8 | 19.70 | 26.0 | 38.5 |
| 17A | 17CA | 17 | 1 | 18.90 | 20.90 | 27.6 | 36.2 |
| 18A | 18CA | 18 | 1 | 20.00 | 22.10 | 29.3 | 34.2 |
| 20A | 20CA | 20 | 1 | 22.20 | 24.50 | 30.8 | 32.4 |
| 22A | 22CA | 22 | 1 | 24.40 | 26.90 | 35.5 | 28.2 |
| 24A | 24CA | 24 | 1 | 26.70 | 29.50 | 38.9 | 25.7 |
| 26A | 26CA | 26 | 1 | 28.90 | 31.90 | 42.1 | 23.8 |
| 28A | 28CA | 28 | 1 | 31.10 | 34.40 | 45.4 | 22.0 |
| 30A | 30CA | 30 | 1 | 33.30 | 36.80 | 48.4 | 20.7 |
| 33A | 33CA | 33 | 1 | 36.70 | 40.60 | 53.3 | 18.8 |
| 36A | 36CA | 36 | 1 | 40.00 | 44.20 | 58.1 | 17.2 |
| 40A | 40CA | 40 | 1 | 44.40 | 49.10 | 64.5 | 15.5 |
| 43A | 43CA | 43 | 1 | 47.80 | 52.80 | 69.4 | 14.4 |
| 45A | 45CA | 45 | 1 | 50.00 | 55.30 | 72.7 | 13.8 |
| 48A | 48CA | 48 | 1 | 53.30 | 58.90 | 77.4 | 12.9 |
| 51A | 51CA | 51 | 1 | 56.70 | 62.70 | 82.4 | 12.1 |
| 54A | 54CA | 54 | 1 | 60.00 | 66.30 | 87.1 | 11.5 |
| 58A | 58CA | 58 | 1 | 64.40 | 71.20 | 93.6 | 10.7 |
| 60A | 60CA | 60 | 1 | 66.70 | 73.70 | 96.8 | 10.3 |
| 64A | 64CA | 64 | 1 | 71.10 | 78.60 | 103 | 9.7 |
| 70A | 70CA | 70 | 1 | 77.80 | 86.00 | 113 | 8.8 |
| 75A | 75CA | 75 | 1 | 83.30 | 92.10 | 121 | 8.3 |
| 78A | 78CA | 78 | 1 | 86.70 | 95.80 | 126 | 7.9 |
| 85A | 85CA | 85 | 1 | 94.40 | 104 | 137 | 7.3 |
| 90A | 90CA | 90 | 1 | 100 | 111 | 146 | 6.8 |
| 100A | 100CA | 100 | 1 | 111 | 123 | 162 | 6.2 |
| 110A | 110CA | 110 | 1 | 122 | 135 | 177 | 5.6 |
| 120A | 120CA | 120 | 5 | 133 | 148 | 193 | 3.1 |

1 Bi-directional types with V_{WM} ≤ 10V have double reverse current limit – Bidirektionale Typen mit V_{WM} ≤ 10V haben die doppelte Sperrstromgrenze

1.0SMBJ5.0A ... 1.0SMBJ120CA



Disclaimer: See data book page 2 or [website](#)
Haftungsausschluss: Siehe Datenbuch Seite 2 oder [Internet](#)

1 Mounted on P.C. board with 50 mm² copper pads at each terminal
Montage auf Leiterplatte mit 50 mm² Kupferbelag (Lötpad) an jedem Anschluss