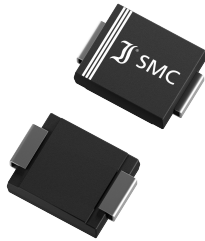
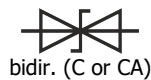
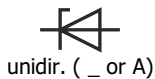


3.0SMCJ5.0A ... 3.0SMCJ170CA
SMD Transient Voltage Suppressor Diodes
SMD Spannungs-Begrenzer-Dioden
P_{PPM} = 3000 W
P_{M(AV)} = 6.0 W
T_{jmax} = 150°C
V_{WM} = 5.0 ... 170 V
V_{BR} = 6.8 ... 200 V

Version 2021-12-06

SMC
 ~ DO-214AB
SPICE Model & STEP File ¹⁾**Marking**

Type = Part number. Cathode mark only at unidirectional types

Typ = Artikel-Nr. Kathoden-Markierung nur bei unidirektionalen Typen

HS Code 85411000**Typical Applications**
 Over-voltage protection
 ESD protection
 Free-wheeling diodes
 Commercial / industrial grade
 Suffix -Q: AEC-Q101 compliant ¹⁾
 Suffix -AQ: AEC-Q101 qualified ¹⁾
Features
 Uni- and Bidirectional versions
 Peak pulse power of 3000 W
 (10/1000 µs waveform)
 Very fast response time
 Compliant to RoHS (exemp. 7a),
 REACH, Conflict Minerals ¹⁾
Mechanical Data ¹⁾
 Taped and reeled
 Weight approx.
 Case material
 Solder & assembly conditions


3000 / 13"

0.21 g

UL 94V-0

260°C/10s

MSL = 1

Typische Anwendungen
 Schutz gegen Überspannung
 ESD-Schutz
 Freilauf-Dioden
 Standardausführung
 Suffix -Q: AEC-Q101 konform ¹⁾
 Suffix -AQ: AEC-Q101 qualifiziert ¹⁾
Besonderheiten
 Uni- und Bidirektionale Versionen
 3000 W Impuls-Verlustleistung
 (10/1000 µs Strom-Impuls)
 Sehr schnelle Ansprechzeit
 Konform zu RoHS (Ausn. 7a),
 REACH, Konfliktmineralien ¹⁾
Mechanische Daten ¹⁾

Gegurtet auf Rolle

Gewicht ca.

Gehäusematerial

Löt- und Einbaubedingungen

 For bidirectional types (suffix "C" or "CA"), electrical characteristics apply in both directions.
 Für bidirektionale Dioden (mit Suffix "C" oder "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)	P _{PPM}	3000 W ³⁾
Steady state power dissipation – Verlustleistung im Dauerbetrieb T _T = 75°C	P _{M(AV)}	6 W
Peak forward surge current Stoßstrom in Fluss-Richtung	Half sine-wave Sinus-Halbwellen 60 Hz (8.3 ms)	I _{FSM} 300 A ⁴⁾
Junction temperature – Sperrschichttemperatur Storage temperature – Lagerungstemperatur	T _j T _s	-50...+150°C -50...+150°C

Characteristics**Kennwerte**

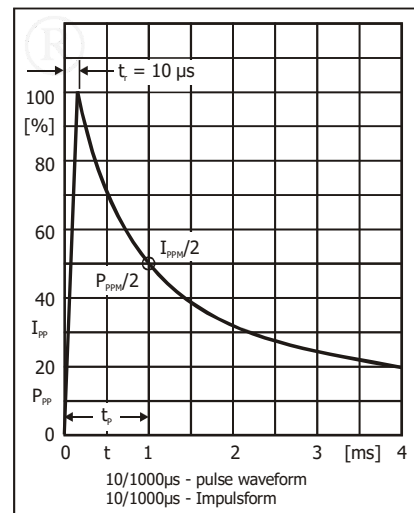
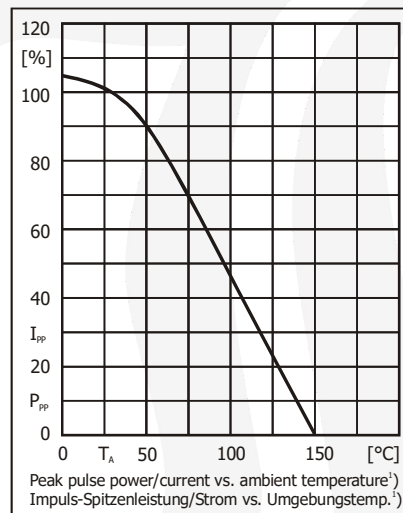
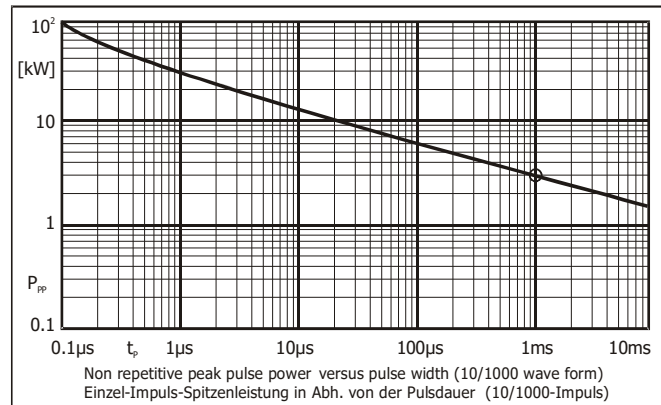
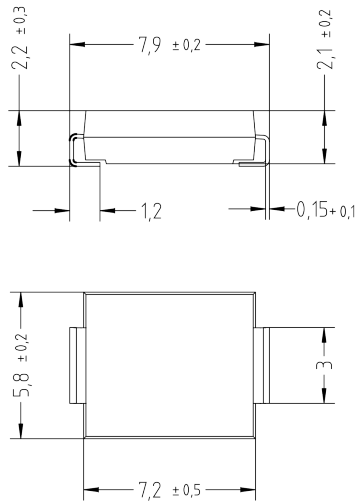
Max. instantaneous forward voltage Augenblickswert der Durchlass-Spannung	I _F = 25 A V _{BR} ≤ 200 V	V _F	< 3.0 V ⁴⁾
Typ. thermal resistance junction to ambient – Typ. Wärmewiderstand Sperrschicht – Umgebung Typ. thermal resistance junction to terminal – Typ. Wärmewiderstand Sperrschicht – Anschluss		R _{thA} R _{thT}	33 K/W ⁵⁾ 10 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 PCB with 50 mm² copper pad per terminal – Montage auf Leiterplatte mit 50 mm² Lötpad je Anschluss

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

Type Typ	) Q ¹⁾ -Q ²⁾ A ³⁾ -AQ ⁴⁾	Stand-off voltage Sperrspg.	Max. rev. current Max. Sperrstrom at / bei V _{WM} ³⁾	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]
	3.0SMCJ5.0A	3.0SMCJ5.0CA	5.0	800	6.4 *)	7.2 *)	9.2	326.0
	3.0SMCJ6.0A	3.0SMCJ6.0CA	6.0	800	6.6 *)	7.4 *)	10.3	291.2
	3.0SMCJ6.5A	3.0SMCJ6.5CA	6.5	500	7.2 *)	8.0 *)	11.2	267.8
	3.0SMCJ7.0A	3.0SMCJ7.0CA	7.0	200	7.8 *)	8.6 *)	12.0	250.0
	3.0SMCJ7.5A	3.0SMCJ7.5CA	7.5	100	8.3	9.2	12.9	232.5
	3.0SMCJ8.0A	3.0SMCJ8.0CA	8.0	50	8.9	9.9	13.6	220.5
	3.0SMCJ8.5A	3.0SMCJ8.5CA	8.5	20	9.4	10.4	14.4	208.3
	3.0SMCJ9.0A	3.0SMCJ9.0CA	9.0	10	10.0	11.1	15.4	194.8
	3.0SMCJ10A ^{A)}	3.0SMCJ10CA ^{A)}	10	5	11.1	12.3	17.0	176.4
	3.0SMCJ11A ^{A)}	3.0SMCJ11CA ^{A)}	11	5	12.2	13.5	18.2	164.8
	3.0SMCJ12A ^{A)}	3.0SMCJ12CA ^{A)}	12	5	13.3	14.8	19.9	150.7
	3.0SMCJ13A ^{A)}	3.0SMCJ13CA ^{A)}	13	5	14.4	16.0	21.5	139.5
	3.0SMCJ14A ^{A)}	3.0SMCJ14CA ^{A)}	14	5	15.6	17.3	23.2	129.3
	3.0SMCJ15A ^{A)}	3.0SMCJ15CA ^{A)}	15	5	16.7	18.6	24.4	122.9
	3.0SMCJ16A ^{A)}	3.0SMCJ16CA ^{A)}	16	5	17.8	19.8	26.0	115.3
	3.0SMCJ17A ^{A)}	3.0SMCJ17CA ^{A)}	17	5	18.9	21.0	27.6	108.7
	3.0SMCJ18A ^{A)}	3.0SMCJ18CA ^{A)}	18	5	20.0	22.2	29.2	102.7
	3.0SMCJ20A ^{A)}	3.0SMCJ20CA ^{A)}	20	5	22.2	24.6	32.4	92.5
	3.0SMCJ22A ^{A)}	3.0SMCJ22CA ^{A)}	22	5	24.4	27.1	35.5	84.5
	3.0SMCJ24A ^{Q A)}	3.0SMCJ24CA ^{Q A)}	24	5/5/1	26.7	29.6	38.9	77.1
	3.0SMCJ26A ^{A)}	3.0SMCJ26CA ^{A)}	26	5	28.9	32.1	42.1	71.2
	3.0SMCJ28A ^{A)}	3.0SMCJ28CA ^{A)}	28	5	31.1	34.5	45.4	66.0
	3.0SMCJ30A ^{Q A)}	3.0SMCJ30CA ^{Q A)}	30	5	33.3	36.9	48.4	61.9
	3.0SMCJ33A ^{Q A)}	3.0SMCJ33CA ^{Q A)}	33	5	36.7	40.7	53.3	56.2
	3.0SMCJ36A ^{Q A)}	3.0SMCJ36CA ^{Q A)}	36	5	40.0	44.4	58.1	51.6
	3.0SMCJ40A ^{Q A)}	3.0SMCJ40CA ^{Q A)}	40	5	44.4	49.3	64.5	46.5
	3.0SMCJ43A ^{Q A)}	3.0SMCJ43CA ^{Q A)}	43	5	47.8	53.1	69.4	43.2
	3.0SMCJ45A	3.0SMCJ45CA	45	5	50.0	55.5	72.7	41.2
	3.0SMCJ48A	3.0SMCJ48CA	48	5	53.3	59.2	77.4	38.7
	3.0SMCJ51A	3.0SMCJ51CA	51	5	56.7	62.9	82.4	36.4
	3.0SMCJ54A	3.0SMCJ54CA	54	5	60.0	66.6	87.1	34.4
	3.0SMCJ58A	3.0SMCJ58CA	58	5	64.4	71.5	93.6	32.0
	3.0SMCJ60A	3.0SMCJ60CA	60	5	66.7	74.0	96.8	30.9
	3.0SMCJ64A	3.0SMCJ64CA	64	5	71.1	78.9	103	29.1
	3.0SMCJ70A	3.0SMCJ70CA	70	5	77.8	86.4	113	26.5
	3.0SMCJ75A	3.0SMCJ75CA	75	5	83.3	92.5	121	24.7
	3.0SMCJ78A	3.0SMCJ78CA	78	5	86.7	96.2	126	23.8
	3.0SMCJ85A	3.0SMCJ85CA	85	5	94.4	105	137	21.9
	3.0SMCJ90A	3.0SMCJ90CA	90	5	100	111	146	20.5
	3.0SMCJ100A	3.0SMCJ100CA	100	5	111	123	162	18.5
	3.0SMCJ110A	3.0SMCJ110CA	110	5	122	135	177	16.9
	3.0SMCJ120A	3.0SMCJ120CA	120	5	133	148	193	15.5
	3.0SMCJ130A	3.0SMCJ130CA	130	5	144	160	209	14.3
	3.0SMCJ150A	3.0SMCJ150CA	150	5	167	185	243	12.3
	3.0SMCJ160A	3.0SMCJ160CA	160	5	178	198	259	11.5
	3.0SMCJ170A	3.0SMCJ170CA	170	5	189	210	275	10.9

1 Footnotes see last page – Fußnoten siehe letzte Seite

Dimensions - Maße [mm]

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

- 1 Mounted on PCB with 50 mm² copper pad per terminal – Montage auf Leiterplatte mit 50 mm² Lötpad je Anschluss
- 2 ³⁾ Available in -Q. Ordering code e. g. 3.0SMBJ24A-Q – ⁴⁾ **Available in -AQ. Ordering code e. g. 3.0SMBJ33CA-AQ**
³⁾ Erhältlich in -Q. Bestellnummer z. B. 3.0SMBJ24A-Q – ⁴⁾ **Erhältlich in -AQ. Bestellnummer z. B. 3.0SMBJ33CA-AQ**
- 3 Bidirectional types of $V_{WM} \leq 10V$ have double reverse current limit – Bidir. Typen mit $V_{WM} \leq 10V$ haben doppelte Sperrstromgrenze