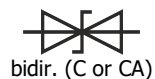
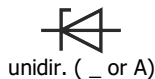


1.5SMCJ5.0 ... 1.5SMCJ170CA
SMD Transient Voltage Suppressor Diodes
SMD Spannungs-Begrenzer-Dioden
P_{PPM} = 1500 W
P_{M(AV)} = 5.0 W
T_{jmax} = 150°C

V_{WM} = 5.0 ... 170 V
V_{BR} = 6.8 ... 200 V

Version 2021-11-17

SMC
 ~ DO-214AB
**SPICE Model & STEP File ¹⁾**
Marking
 V_{BR} only. Cathode mark
 only at unidirectional types

 Nur V_{BR}. 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 1500 W
 (10/1000 µs waveform)
 Very fast response time
 Further available:
 1.5SMC220...550CA
 having V_{BR} = 220 ... 550 V
 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
 1500 W Impuls-Verlustleistung
 (10/1000 µs Strom-Impuls)
 Sehr schnelle Ansprechzeit
 Auch erhältlich:
 1.5MC220...550CA
 mit V_{BR} = 220 ... 550V
 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}	1500 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} ≤ 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 P.C. board with 50 mm² copper pads at each terminal
Montage auf Leiterplatte mit 50 mm² Kupferbelag (Lötpad) an jedem Anschluss

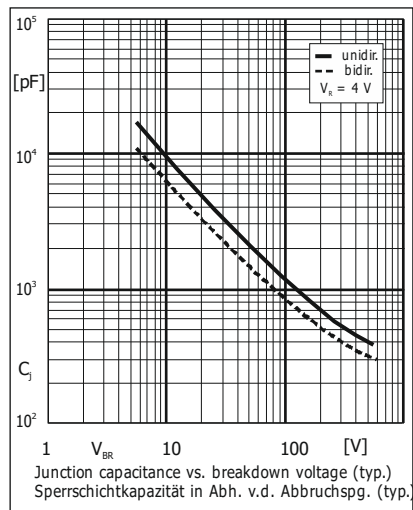
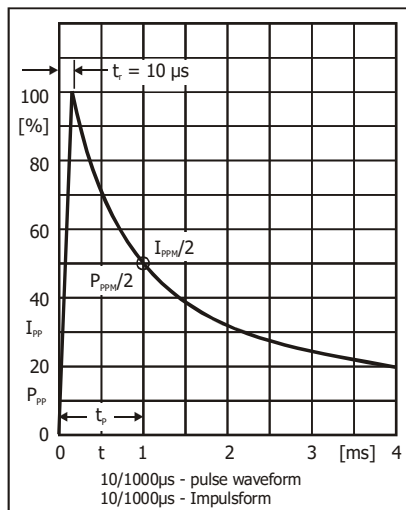
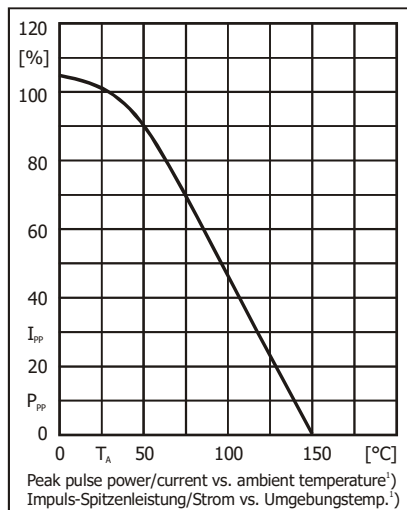
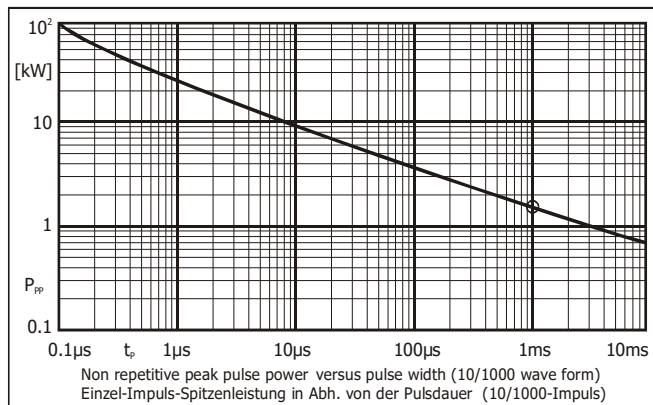
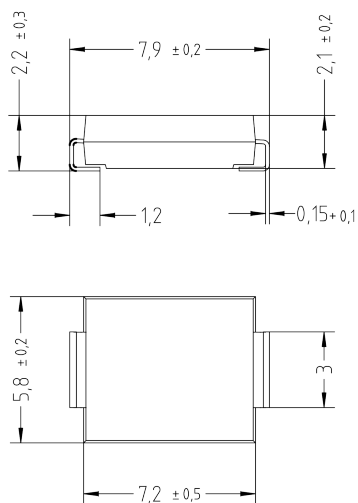
Characteristics (T_j = 25°C)
Kennwerte (T_j = 25°C)

Type Typ	¹⁾ ²⁾ -Q ³⁾ -AQ ²⁾	Stand-off voltage Sperrspannung	Max. rev. current Max. Sperrstrom at / bei V _{WM}	Breakdown voltage at I _T = 1 mA Abbruch-Spannung bei I _T = 1 mA ^{*)} I _T = 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]
1.5SMCJ5.0	1.5SMCJ5.0C	5.0	800	6.4 *)	7.8 *)	10.3	146
1.5SMCJ5.0A	1.5SMCJ5.0CA	5.0	800	6.4 *)	7.2 *)	9.2	163
1.5SMCJ6.5	1.5SMCJ6.5C	6.5	500	7.2 *)	8.8 *)	12.3	122
1.5SMCJ6.5A	1.5SMCJ6.5CA	6.5	500	7.2 *)	8.0 *)	11.2	134
1.5SMCJ7.0	1.5SMCJ7.0C	7.0	200	7.8 *)	9.5 *)	13.3	113
1.5SMCJ7.0A	1.5SMCJ7.0CA	7.0	200	7.8 *)	8.7 *)	12.0	125
1.5SMCJ7.5	1.5SMCJ7.5C	7.5	100	8.3	10.1	14.3	105
1.5SMCJ7.5A	1.5SMCJ7.5CA	7.5	100	8.3	9.2	12.9	116
1.5SMCJ8.0	1.5SMCJ8.0C	8.0	50	8.9	10.9	15.0	100
1.5SMCJ8.0A	1.5SMCJ8.0CA	8.0	50	8.9	9.9	13.6	110
1.5SMCJ8.5	1.5SMCJ8.5C	8.5	10	9.4	11.5	15.9	94.3
1.5SMCJ8.5A	1.5SMCJ8.5CA	8.5	10	9.4	10.4	14.4	104.2
1.5SMCJ9.0	1.5SMCJ9.0C	9.0	5	10.0	12.2	16.9	88.8
1.5SMCJ9.0A	1.5SMCJ9.0CA	9.0	5	10.0	11.1	15.4	97.4
1.5SMCJ10	1.5SMCJ10C	10	5	11.1	13.5	18.8	79.8
1.5SMCJ10A ⁴⁾	1.5SMCJ10CA ⁴⁾	10	5	11.1	12.3	17.0	88.2
1.5SMCJ11	1.5SMCJ11C	11	5	12.2	14.9	20.1	74.6
1.5SMCJ11A ⁴⁾	1.5SMCJ11CA ⁴⁾	11	5	12.2	13.5	18.2	82.4
1.5SMCJ12	1.5SMCJ12C	12	5	13.3	16.2	22.0	68.2
1.5SMCJ12A ⁴⁾	1.5SMCJ12CA ⁴⁾	12	5	13.3	14.8	19.9	75.4
1.5SMCJ13	1.5SMCJ13C	13	5	14.4	17.6	23.8	63.0
1.5SMCJ13A ⁴⁾	1.5SMCJ13CA ⁴⁾	13	5	14.4	16.0	21.5	69.8
1.5SMCJ14	1.5SMCJ14C	14	5	15.6	19.0	25.8	58.1
1.5SMCJ14A ⁴⁾	1.5SMCJ14CA ⁴⁾	14	5	15.6	17.3	23.2	64.7
1.5SMCJ15	1.5SMCJ15C	15	5	16.7	20.4	26.9	55.8
1.5SMCJ15A ⁴⁾	1.5SMCJ15CA ⁴⁾	15	5	16.7	18.6	24.4	61.5
1.5SMCJ16	1.5SMCJ16C	16	5	17.8	21.7	28.8	52.1
1.5SMCJ16A ⁴⁾	1.5SMCJ16CA ⁴⁾	16	5	17.8	19.8	26.0	57.7
1.5SMCJ17	1.5SMCJ17C	17	5	18.9	23.1	30.5	49.2
1.5SMCJ17A ⁴⁾	1.5SMCJ17CA ⁴⁾	17	5	18.9	21.0	27.6	54.3
1.5SMCJ18	1.5SMCJ18C	18	5	20.0	24.4	32.2	46.6
1.5SMCJ18A ⁴⁾	1.5SMCJ18CA ⁴⁾	18	5	20.0	22.2	29.2	51.4
1.5SMCJ20	1.5SMCJ20C	20	5	22.2	27.1	35.8	41.9
1.5SMCJ20A ⁴⁾	1.5SMCJ20CA ⁴⁾	20	5	22.2	24.6	32.4	46.3
1.5SMCJ22	1.5SMCJ22C	22	5	24.4	29.8	39.4	38.1
1.5SMCJ22A ⁴⁾	1.5SMCJ22CA ⁴⁾	22	5	24.4	27.1	35.5	42.3
1.5SMCJ24	1.5SMCJ24C	24	5	26.7	32.6	43.0	34.9
1.5SMCJ24A ⁴⁾	1.5SMCJ24CA ⁴⁾	24	5	26.7	29.6	38.9	38.6
1.5SMCJ26	1.5SMCJ26C	26	5	28.9	35.3	46.6	32.2
1.5SMCJ26A ⁴⁾	1.5SMCJ26CA ⁴⁾	26	5	28.9	32.1	42.1	35.6
1.5SMCJ28	1.5SMCJ28C	28	5	31.1	37.9	50.0	30.0
1.5SMCJ28A ⁴⁾	1.5SMCJ28CA ⁴⁾	28	5	31.1	34.5	45.4	33.0
1.5SMCJ30	1.5SMCJ30C	30	5	33.3	40.1	53.5	28.0
1.5SMCJ30A ⁴⁾	1.5SMCJ30CA ⁴⁾	30	5	33.3	36.9	48.4	31.0
1.5SMCJ33	1.5SMCJ33C	33	5	36.7	44.8	59.0	25.4
1.5SMCJ33A ⁴⁾	1.5SMCJ33CA ⁴⁾	33	5	36.7	40.7	53.3	28.1
1.5SMCJ36	1.5SMCJ36C	36	5	40.0	48.4	64.3	23.3
1.5SMCJ36A ⁴⁾	1.5SMCJ36CA ⁴⁾	36	5	40.0	44.4	58.1	25.8
1.5SMCJ40	1.5SMCJ40C	40	5	44.4	54.2	71.4	21.0
1.5SMCJ40A ⁴⁾	1.5SMCJ40CA ⁴⁾	40	5	44.4	49.3	64.5	23.3

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

Type Typ	¹⁾ ²⁾ -Q ³⁾ -AQ	Stand-off voltage Sperrspannung	Max. rev. current Max. Sperrstrom at / bei V _{WM}	Breakdown voltage at I _T = 1 mA Abbruch-Spannung bei I _T = 1 mA ^{*)} I _T = 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]
1.5SMCJ43	1.5SMCJ43C	43	5	47.8	58.3	76.7	19.6
1.5SMCJ43A ^{QA)}	1.5SMCJ43CA ^{QA)}	43	5	47.8	53.1	69.4	21.6
1.5SMCJ45	1.5SMCJ45C	45	5	50.0	61.0	80.3	18.7
1.5SMCJ45A ^{A)}	1.5SMCJ45CA ^{A)}	45	5	50.0	55.5	72.7	20.6
1.5SMCJ48	1.5SMCJ48C	48	5	53.3	65.0	85.5	17.5
1.5SMCJ48A ^{A)}	1.5SMCJ48CA ^{A)}	48	5	53.3	59.2	77.4	19.4
1.5SMCJ51	1.5SMCJ51C	51	5	56.7	69.2	91.1	16.5
1.5SMCJ51A ^{A)}	1.5SMCJ51CA ^{A)}	51	5	56.7	62.9	82.4	18.2
1.5SMCJ54	1.5SMCJ54C	54	5	60.0	73.2	96.3	15.6
1.5SMCJ54A ^{A)}	1.5SMCJ54CA ^{A)}	54	5	60.0	66.6	87.1	17.2
1.5SMCJ58	1.5SMCJ58C	58	5	64.4	78.6	103	14.6
1.5SMCJ58A ^{A)}	1.5SMCJ58CA ^{A)}	58	5	64.4	71.5	93.6	16.0
1.5SMCJ60	1.5SMCJ60C	60	5	66.7	81.4	107	14.0
1.5SMCJ60A ^{A)}	1.5SMCJ60CA ^{A)}	60	5	66.7	74.0	96.8	15.5
1.5SMCJ64	1.5SMCJ64C	64	5	71.1	86.7	114	13.2
1.5SMCJ64A ^{A)}	1.5SMCJ64CA ^{A)}	64	5	71.1	78.9	103	14.6
1.5SMCJ70	1.5SMCJ70C	70	5	77.8	94.9	125	12.0
1.5SMCJ70A ^{A)}	1.5SMCJ70CA ^{A)}	70	5	77.8	86.4	113	13.3
1.5SMCJ75	1.5SMCJ75C	75	5	83.3	102	134	11.2
1.5SMCJ75A ^{A)}	1.5SMCJ75CA ^{A)}	75	5	83.3	92.5	121	12.4
1.5SMCJ78	1.5SMCJ78C	78	5	86.7	106	139	10.8
1.5SMCJ78A ^{A)}	1.5SMCJ78CA ^{A)}	78	5	86.7	96.2	126	11.9
1.5SMCJ85	1.5SMCJ85C	85	5	94.4	115	151	9.9
1.5SMCJ85A	1.5SMCJ85CA	85	5	94.4	105	137	10.9
1.5SMCJ90	1.5SMCJ90C	90	5	100	122	160	9.4
1.5SMCJ90A	1.5SMCJ90CA	90	5	100	111	146	10.3
1.5SMCJ100	1.5SMCJ100C	100	5	111	135	179	8.4
1.5SMCJ100A	1.5SMCJ100CA	100	5	111	123	162	9.3
1.5SMCJ110	1.5SMCJ110C	110	5	122	149	196	7.7
1.5SMCJ110A	1.5SMCJ110CA	110	5	122	135	177	8.5
1.5SMCJ120	1.5SMCJ120C	120	5	133	162	214	7.0
1.5SMCJ120A	1.5SMCJ120CA	120	5	133	148	193	7.8
1.5SMCJ130	1.5SMCJ130C	130	5	144	176	231	6.5
1.5SMCJ130A	1.5SMCJ130CA	130	5	144	160	209	7.2
1.5SMCJ150	1.5SMCJ150C	150	5	167	204	268	5.6
1.5SMCJ150A	1.5SMCJ150CA	150	5	167	185	243	6.2
1.5SMCJ160	1.5SMCJ160C	160	5	178	217	287	5.2
1.5SMCJ160A	1.5SMCJ160CA	160	5	178	198	259	5.8
1.5SMCJ170	1.5SMCJ170C	170	5	189	231	304	4.9
1.5SMCJ170A	1.5SMCJ170CA	170	5	189	210	275	5.5
1.5SMC220 ... 1.5MC550CA		V_{WM} = 175 ... 495V					

Dimensions - Maße [mm]



**TVS diodes having breakdown voltage $V_{BR} = 220 \dots 550 \text{ V}$:
please refer to datasheet 1.5SMC220 ... 550CA
TVS-Dioden mit Abbruchspannung $V_{BR} = 220 \dots 550 \text{ V}$:
siehe Datenblatt 1.5SMC220 ... 550CA**

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[1.5SMCJ28A-AQ](#) [1.5SMCJ30C](#) [1.5SMCJ48A-AQ](#) [1.5SMCJ5.0CA](#) [1.5SMCJ54](#) [1.5SMCJ7.0A](#) [1.5SMCJ70](#)
[1.5SMCJ75A](#) [1.5SMCJ78A-AQ](#) [1.5SMCJ10C](#) [1.5SMCJ10CA](#) [1.5SMCJ120A](#) [1.5SMCJ160](#) [1.5SMCJ160A](#)
[1.5SMCJ17A-AQ](#) [1.5SMCJ26CA](#) [1.5SMCJ26CA-AQ](#) [1.5SMCJ33A](#) [1.5SMCJ48CA-AQ](#) [1.5SMCJ5.0](#) [1.5SMCJ54CA](#)
[1.5SMCJ70C](#) [1.5SMCJ70CA](#) [1.5SMCJ100C](#) [1.5SMCJ110A](#) [1.5SMCJ13C](#) [1.5SMCJ15](#) [1.5SMCJ17A](#) [1.5SMCJ18](#)
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[1.5SMCJ58A-AQ](#) [1.5SMCJ60CA-AQ](#) [1.5SMCJ64](#) [1.5SMCJ8.0CA](#) [1.5SMCJ8.5](#) [1.5SMCJ90A](#) [1.5SMCJ90C](#)
[1.5SMCJ100](#) [1.5SMCJ11](#) [1.5SMCJ13A](#) [1.5SMCJ14CA](#) [1.5SMCJ170C](#) [1.5SMCJ18A-AQ](#) [1.5SMCJ26](#) [1.5SMCJ28C](#)
[1.5SMCJ40C](#) [1.5SMCJ45](#) [1.5SMCJ54C](#) [1.5SMCJ6.5](#) [1.5SMCJ70A](#) [1.5SMCJ75](#) [1.5SMCJ9.0A](#) [1.5SMCJ12CA-AQ](#)
[1.5SMCJ13A-AQ](#) [1.5SMCJ14C](#) [1.5SMCJ18C](#) [1.5SMCJ20CA](#) [1.5SMCJ22CA-AQ](#) [1.5SMCJ36A](#) [1.5SMCJ40A-AQ](#)
[1.5SMCJ43C](#) [1.5SMCJ58CA-AQ](#) [1.5SMCJ60A-AQ](#) [1.5SMCJ64C](#) [1.5SMCJ8.0](#) [1.5SMCJ8.5CA](#) [1.5SMCJ9.0C](#)
[1.5SMCJ120](#) [1.5SMCJ12CA](#) [1.5SMCJ15A](#) [1.5SMCJ20C](#) [1.5SMCJ20CA-AQ](#) [1.5SMCJ33](#)