Elektronische Bauelemente

SMDJ Series-C

Voltage 5V~440V

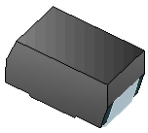
3000W Peak Power Surface Mount TVS

RoHS Compliant Product
A suffix of "-C" specifies halogen-free and lead-free

FEATURES

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Available in Unidirectional and Bidirectional
- Low incremental surge resistance, excellent clamping capability
- Very fast response time
- High temperature soldering guaranteed: 260°C/10s at terminals
- Meets MSL level 1

SMC



MECHANICAL DATA

- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Polarity: For uni-directional types the band denotes cathode end, no marking on bi-directional types

PACKAGE INFORMATION

Package	MPQ	Leader Size
SMC	3K	13 inch

ORDER INFORMATION

Part Number	Type
SMDJ Series-C	Lead (Pb)-free and Halogen-free

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

Ratings		Symbol	Value	Units
Maximum Instantaneous Forward Voltage @100A for Unidirectional Only	V_{BR}≤220V	V_F	3.5	V
	V_{BR}>220V		5	
Peak Pulse Power Dissipation [1,2] @10/1000us waveform		P_{PP}	3000	W
Peak Pulsed Current [1] @10/1000us waveform		I_{PP}	See next table.	A
Peak Forward Surge Current @8.3ms single half sine-wave for uni-directional only [3]		I_{FSM}	300	A
Power Dissipation @T_L=75°C [2]		P_D	6.5	W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55~150	°C
Thermal Resistance Ratings				
Thermal Resistance Junction-Ambient [4]		$R_{\theta JA}$	75	°C/W
Thermal Resistance Junction-Lead		$R_{\theta JL}$	15	

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above T_A=25°C per Fig.2.
2. Mounted on 0.31 x 0.31" (8 x 8mm) copper pads to each terminal.
3. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.
4. Mounted on minimum recommended pad layout.

Elektronische Bauelemente

SMDJ Series-C

Voltage 5V~440V

3000W Peak Power Surface Mount TVS

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage V_{BR} @I_T		Test Current	Maximum Clamping Voltage V_C @I_{PP}	Peak Pulse Current	Max Reverse Leakage Current I_R @V_{RWM}
			Min.	Max.				
Directional		V_{RWM}	V_{BR}		I_T [1]	V_C	I_{PP} [2]	I_R [3]
Uni	Bi	V	V		mA	V	A	μA
SMDJ5.0A-C	SMDJ5.0CA-C	5	6.4	7.07	10	9.2	326.09	1000
SMDJ6.0A-C	SMDJ6.0CA-C	6	6.67	7.37	10	10.3	291.26	1000
SMDJ6.5A-C	SMDJ6.5CA-C	6.5	7.22	7.98	10	11.2	267.86	500
SMDJ7.0A-C	SMDJ7.0CA-C	7	7.78	8.6	10	12	250	200
SMDJ7.5A-C	SMDJ7.5CA-C	7.5	8.33	9.21	1	12.9	232.5	100
SMDJ8.0A-C	SMDJ8.0CA-C	8	8.89	9.83	1	13.6	220.59	50
SMDJ8.5A-C	SMDJ8.5CA-C	8.5	9.44	10.4	1	14.4	208.33	25
SMDJ9.0A-C	SMDJ9.0CA-C	9	10	11.1	1	15.4	194.81	10
SMDJ10A-C	SMDJ10CA-C	10	11.1	12.3	1	17	176.47	5
SMDJ11A-C	SMDJ11CA-C	11	12.2	13.5	1	18.2	164.84	5
SMDJ12A-C	SMDJ12CA-C	12	13.3	14.7	1	19.9	150.75	5
SMDJ13A-C	SMDJ13CA-C	13	14.4	15.9	1	21.5	139.53	5
SMDJ14A-C	SMDJ14CA-C	14	15.6	17.2	1	23.2	129.31	5
SMDJ15A-C	SMDJ15CA-C	15	16.7	18.5	1	24.4	122.95	5
SMDJ16A-C	SMDJ16CA-C	16	17.8	19.7	1	26	115.38	5
SMDJ17A-C	SMDJ17CA-C	17	18.9	20.9	1	27.6	108.7	5
SMDJ18A-C	SMDJ18CA-C	18	20	22.1	1	29.2	102.74	5
SMDJ19A-C	SMDJ19CA-C	19	21.1	23.3	1	30.8	97.47	5
SMDJ20A-C	SMDJ20CA-C	20	22.2	24.5	1	32.4	92.59	5
SMDJ22A-C	SMDJ22CA-C	22	24.4	26.9	1	35.5	84.51	5
SMDJ24A-C	SMDJ24CA-C	24	26.7	29.5	1	38.9	77.12	5
SMDJ26A-C	SMDJ26CA-C	26	28.9	31.9	1	42.1	71.26	5
SMDJ28A-C	SMDJ28CA-C	28	31.1	34.4	1	45.4	66.08	5
SMDJ30A-C	SMDJ30CA-C	30	33.3	36.8	1	48.4	61.98	5
SMDJ33A-C	SMDJ33CA-C	33	36.7	40.6	1	53.3	56.29	5
SMDJ36A-C	SMDJ36CA-C	36	40	44.2	1	58.1	51.64	5
SMDJ40A-C	SMDJ40CA-C	40	44.4	49.1	1	64.5	46.51	5
SMDJ43A-C	SMDJ43CA-C	43	47.8	52.8	1	69.4	43.23	5
SMDJ45A-C	SMDJ45CA-C	45	50	55.3	1	72.7	41.27	5
SMDJ48A-C	SMDJ48CA-C	48	53.3	58.9	1	77.4	38.76	5

Elektronische Bauelemente

SMDJ Series-C

Voltage 5V~440V

3000W Peak Power Surface Mount TVS

ELECTRICAL CHARACTERISTICS (Rating T_A=25°C unless otherwise specified)

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage V_{BR} @I_T		Test Current	Maximum Clamping Voltage V_C @I_{PP}	Peak Pulse Current	Max Reverse Leakage Current I_R @V_{RWM}
			Min.	Max.				
Directional		V_{RWM}	V_{BR}		I_T [1]	V_C	I_{PP} [2]	I_R [3]
Uni	Bi	V	V		mA	V	A	μA
SMDJ51A-C	SMDJ51CA-C	51	56.7	62.7	1	82.4	36.41	5
SMDJ54A-C	SMDJ54CA-C	54	60	66.3	1	87.1	34.44	5
SMDJ58A-C	SMDJ58CA-C	58	64.4	71.2	1	93.6	32.05	5
SMDJ60A-C	SMDJ60CA-C	60	66.7	73.7	1	96.8	30.99	5
SMDJ64A-C	SMDJ64CA-C	64	71.1	78.6	1	103	29.13	5
SMDJ70A-C	SMDJ70CA-C	70	77.8	86	1	113	26.55	5
SMDJ75A-C	SMDJ75CA-C	75	83.3	92.1	1	121	24.79	5
SMDJ78A-C	SMDJ78CA-C	78	86.7	95.8	1	126	23.81	5
SMDJ80A-C	SMDJ80CA-C	80	88.8	97.6	1	129.6	23.15	5
SMDJ85A-C	SMDJ85CA-C	85	94.4	104	1	137	21.9	5
SMDJ90A-C	SMDJ90CA-C	90	100	111	1	146	20.55	5
SMDJ100A-C	SMDJ100CA-C	100	111	123	1	162	18.52	5
SMDJ110A-C	SMDJ110CA-C	110	122	135	1	177	16.95	5
SMDJ120A-C	SMDJ120CA-C	120	133	147	1	193	15.54	5
SMDJ130A-C	SMDJ130CA-C	130	144	159	1	209	14.35	5
SMDJ140A-C	SMDJ140CA-C	140	155	171	1	226.8	13.33	5
SMDJ150A-C	SMDJ150CA-C	150	167	185	1	243	12.35	5
SMDJ160A-C	SMDJ160CA-C	160	178	197	1	259	11.58	5
SMDJ170A-C	SMDJ170CA-C	170	189	209	1	275	10.91	5
SMDJ180A-C	SMDJ180CA-C	180	200	220	1	291.6	10.29	5
SMDJ190A-C	SMDJ190CA-C	190	211	232	1	307.8	9.75	5
SMDJ200A-C	SMDJ200CA-C	200	224	247	1	324	9.26	5
SMDJ220A-C	SMDJ220CA-C	220	246	272	1	356	8.43	5
SMDJ250A-C	SMDJ250CA-C	250	279	309	1	405	7.41	5
SMDJ300A-C	SMDJ300CA-C	300	335	371	1	486	6.17	5
SMDJ350A-C	SMDJ350CA-C	350	391	432	1	567	5.29	5
SMDJ400A-C	SMDJ400CA-C	400	447	494	1	648	4.63	5
SMDJ440A-C	SMDJ440CA-C	440	492	543	1	713	4.21	5

Notes:

1. Pulse Test: tp≤50ms Pulse test: tp≤50ms.
2. Surge current waveform per Fig.3 and derated per Fig.2.
3. For bi-directional types having V_{RWM} of 10V and less, the I_R limit is doubled.
4. For the bi-directional SMCJ5.0CA, the maximum V_{BR} is 7.25V

CHARACTERISTIC CURVE

FIG1:Peak Pulse Power Rating Curve

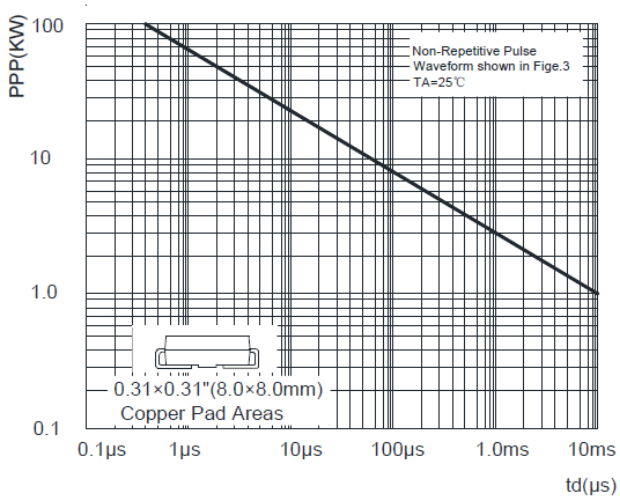


FIG2: Pulse Power or Current vs. Initial Junction Temperature

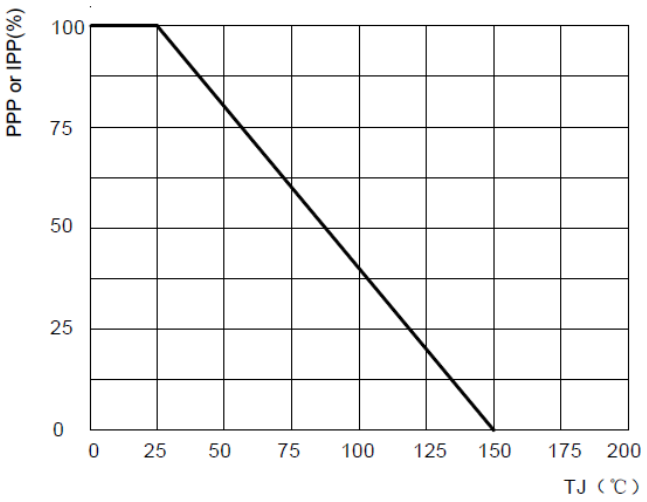


FIG3: Pulse Waveform

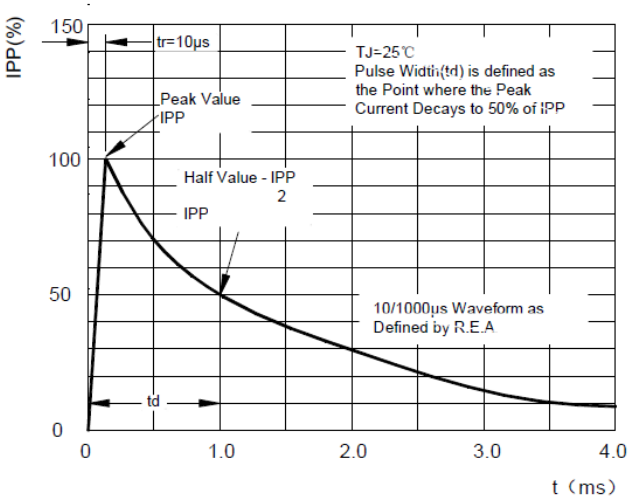


FIG4:Typical Transient Thermal Impedance

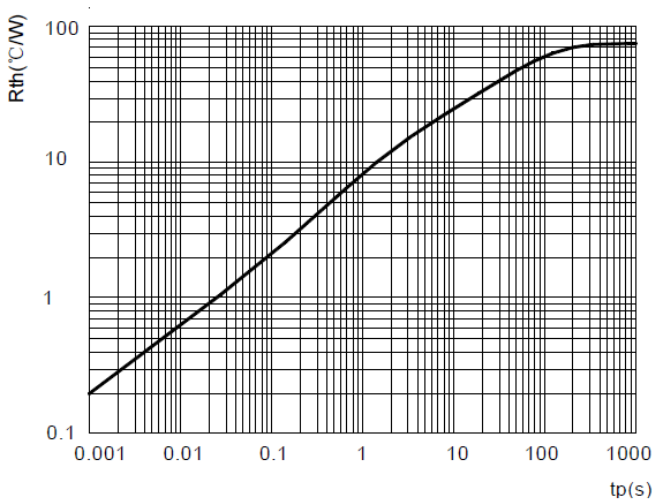


FIG5: Maximum Non-Repetitive Surge Current

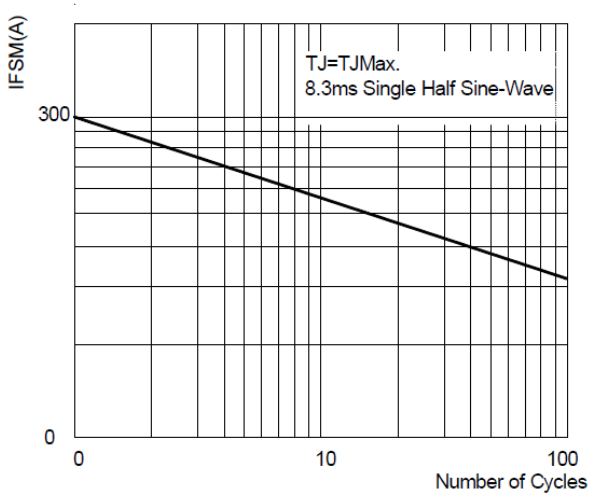
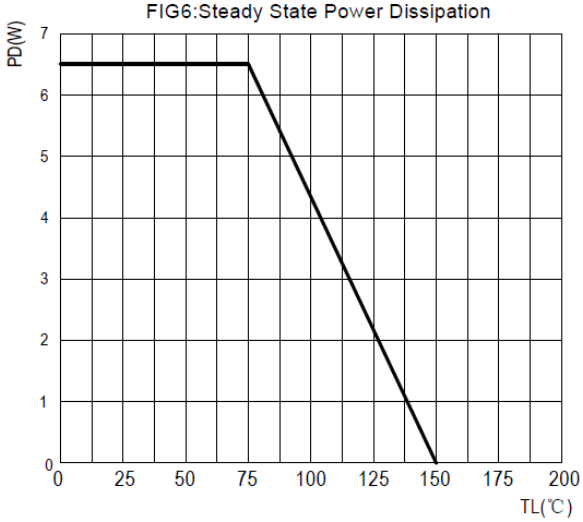
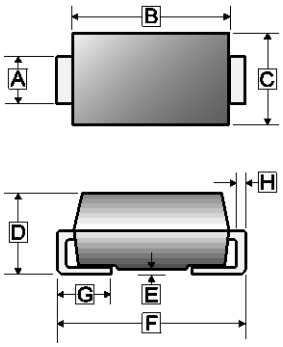


FIG6:Steady State Power Dissipation



PACKAGE OUTLINE DIMENSIONS

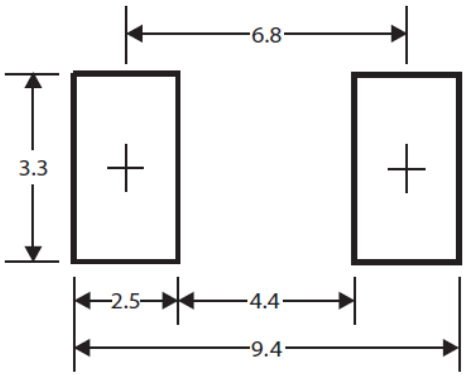
SMC



REF.	Millimeter	
	Min.	Max.
A	2.75	3.27
B	6.52	7.11
C	5.50	6.22
D	1.98	2.62
E	-	0.203
F	7.64	8.17
G	0.75	1.60
H	0.23 TYP.	

MOUNTING PAD LAYOUT

SMC



*Dimensions in millimeters