

SMDJ Series

●General description

The SMDJ Series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

●Features

3000W peak pulse capability at 10/1000 μ s waveform.
Glass passivated or planar chip junction in SMD Package.
Fast response time, excellent clamping capability.
Low incremental surge resistance.
Typical failure mode is short for over-specified voltage or current.



SMD

●Applications

TVS devices are ideal for the protection of I/O interfaces, V_{CC} bus and other vulnerable circuits used in telecom, computer, industrial and consumer electronic applications.

●Maximum ratings and thermal characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Value	Unit
P_{PP}	Peak pulse power dissipation	10/1000 μ s Test waveform, $T_A = 25^{\circ}\text{C}$	3000	W
P_D	Power dissipation on infinite heatsink	$T_L=50^{\circ}\text{C}$	6.5	W
I_{FSM}	Peak forward surge current	8.3ms single half sine wave	300	A
V_F	Maximum instantaneous forward voltage	25A for uni-directional only	3.5	V
$R_{th(j-l)}$	Junction to lead		15	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	Junction to ambient on printed circuit on recommended pad layout		75	$^{\circ}\text{C}/\text{W}$
T_{stg}	Storage temperature range		-65 to 175	$^{\circ}\text{C}$
T_j	Operating junction temperature range		-65 to 150	$^{\circ}\text{C}$

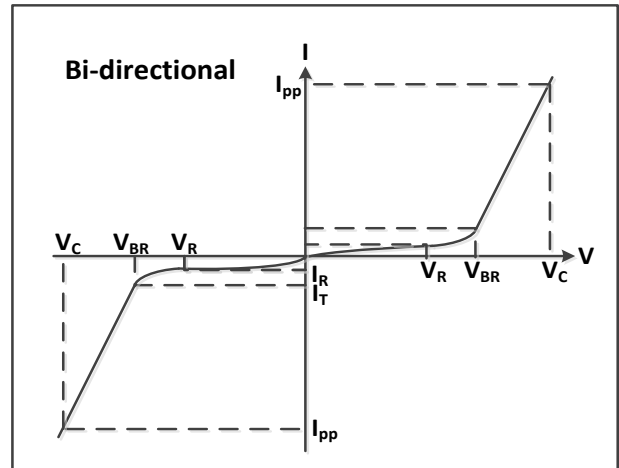
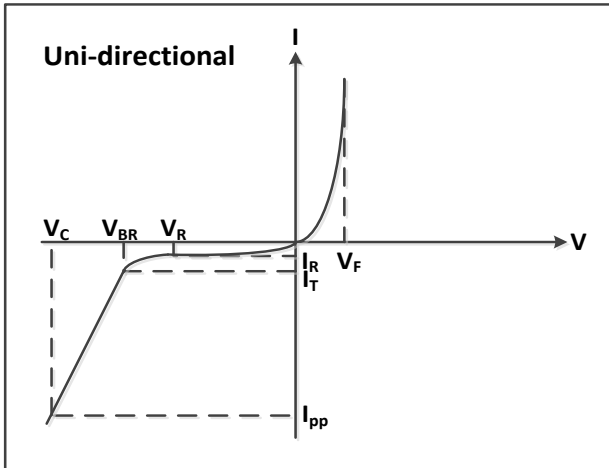
●Electrical characteristics

Part number (uni)	Part number (bi)	V_{RWM} (V)	$V_{BR}@I_T$ (V)		I_T (mA)	$I_R@V_{RWM}(\mu\text{A})$	$V_C @I_{PP}(\text{V})$	$I_{PP}(\text{A})$
			Min	Max				
SMDJ5.0A	SMDJ5.0CA	5.0	6.40	7.00	10	800	9.2	326.1
SMDJ6.0A	SMDJ6.0CA	6.0	6.67	7.37	10	800	10.3	291.3
SMDJ6.5A	SMDJ6.5CA	6.5	7.22	7.98	10	500	11.2	267.9
SMDJ7.0A	SMDJ7.0CA	7.0	7.78	8.60	10	200	12.0	250.0
SMDJ7.5A	SMDJ7.5CA	7.5	8.33	9.21	1	100	12.9	232.6

SMDJ8.0A	SMDJ8.0CA	8.0	8.89	9.83	1	50	13.6	220.6
SMDJ8.5A	SMDJ8.5CA	8.5	9.44	10.40	1	20	14.4	208.3
SMDJ9.0A	SMDJ9.0CA	9.0	10.00	11.10	1	10	15.4	194.8
SMDJ10A	SMDJ10CA	10.0	11.10	12.30	1	5	17.0	176.5
SMDJ11A	SMDJ11CA	11.0	12.20	13.50	1	5	18.2	164.8
SMDJ12A	SMDJ12CA	12.0	13.30	14.70	1	5	19.9	150.8
SMDJ13A	SMDJ13CA	13.0	14.40	15.90	1	5	21.5	139.5
SMDJ14A	SMDJ14CA	14.0	15.60	17.20	1	5	23.2	129.3
SMDJ15A	SMDJ15CA	15.0	16.70	18.50	1	5	24.4	123.0
SMDJ16A	SMDJ16CA	16.0	17.80	19.70	1	5	26.0	115.4
SMDJ17A	SMDJ17CA	17.0	18.90	20.90	1	5	27.6	108.7
SMDJ18A	SMDJ18CA	18.0	20.00	22.10	1	5	29.2	102.7
SMDJ20A	SMDJ20CA	20.0	22.20	24.50	1	5	32.4	92.6
SMDJ22A	SMDJ22CA	22.0	24.40	26.90	1	5	35.5	84.5
SMDJ24A	SMDJ24CA	24.0	26.70	29.50	1	5	38.9	77.1
SMDJ26A	SMDJ26CA	26.0	28.90	31.90	1	5	42.1	71.3
SMDJ28A	SMDJ28CA	28.0	31.10	34.40	1	5	45.4	66.1
SMDJ30A	SMDJ30CA	30.0	33.30	36.80	1	5	48.4	62.0
SMDJ33A	SMDJ33CA	33.0	36.70	40.60	1	5	53.3	56.3
SMDJ36A	SMDJ36CA	36.0	40.00	44.20	1	5	58.1	51.6
SMDJ40A	SMDJ40CA	40.0	44.40	49.10	1	5	64.5	46.5
SMDJ43A	SMDJ43CA	43.0	47.80	52.80	1	5	69.4	43.2
SMDJ45A	SMDJ45CA	45.0	50.00	55.30	1	5	72.7	41.3
SMDJ48A	SMDJ48CA	48.0	53.30	58.90	1	5	77.4	38.8
SMDJ51A	SMDJ51CA	51.0	56.70	62.70	1	5	82.4	36.4
SMDJ54A	SMDJ54CA	54.0	60.00	66.30	1	5	87.1	34.4
SMDJ58A	SMDJ58CA	58.0	64.40	71.20	1	5	93.6	32.1
SMDJ60A	SMDJ60CA	60.0	66.70	73.70	1	5	96.8	31.0
SMDJ64A	SMDJ64CA	64.0	71.10	78.60	1	5	103.0	29.1
SMDJ70A	SMDJ70CA	70.0	77.80	86.00	1	5	113.0	26.5
SMDJ75A	SMDJ75CA	75.0	83.20	92.10	1	5	121.0	24.8
SMDJ78A	SMDJ78CA	78.0	86.70	95.80	1	5	126.0	23.8
SMDJ85A	SMDJ85CA	85.0	94.40	104.00	1	5	137.0	21.9
SMDJ90A	SMDJ90CA	90.0	100.00	111.00	1	5	146.0	20.5
SMDJ100A	SMDJ100CA	100.0	111.00	123.00	1	5	162.0	18.5
SMDJ110A	SMDJ110CA	110.0	122.00	135.00	1	5	177.0	16.9
SMDJ120A	SMDJ120CA	120.0	133.00	147.00	1	5	193.0	15.5
SMDJ130A	SMDJ130CA	130.0	144.00	159.00	1	5	209.0	14.4
SMDJ150A	SMDJ150CA	150.0	167.00	185.00	1	5	243.0	12.3
SMDJ160A	SMDJ160CA	160.0	178.00	197.00	1	5	259.0	11.6
SMDJ170A	SMDJ170CA	170.0	189.00	209.00	1	5	275.0	10.9
SMDJ180A	SMDJ180CA	180.0	201.00	222.00	1	5	292.0	10.4
SMDJ190A	SMDJ190CA	190.0	211.00	233.00	1	5	308.0	9.7
SMDJ200A	SMDJ200CA	200.0	224.00	247.00	1	5	324.0	*
SMDJ210A	SMDJ210CA	210.0	237.00	263.00	1	5	340.0	*
SMDJ220A	SMDJ220CA	220.0	246.00	272.00	1	5	356.0	8.4
SMDJ250A	SMDJ250CA	250.0	279.00	309.00	1	5	405.0	*
SMDJ300A	SMDJ300CA	300.0	335.00	371.00	1	5	486.0	*
SMDJ350A	SMDJ350CA	350.0	391.00	435.00	1	5	567.0	*
SMDJ400A	SMDJ400CA	400.0	447.00	494.00	1	5	648.0	*
SMDJ440A	SMDJ440CA	440.0	492.00	543.00	1	5	713.0	*

- I_{PP} Peak Pulse Current** -- Maximum current that flows through the TVS
- V_{RWM} Stand-off Voltage** -- Maximum voltage that can be applied to the TVS without operation
- V_{BR} Breakdown Voltage** -- Maximum voltage that flows through the TVS at a specified test current (I_T)
- V_C Clamping Voltage** -- Peak voltage measured at a specified I_{ppm} (peak impulse current)
- I_R Reverse Leakage Current** -- Current measured at V_{RWM}
- V_F Forward Voltage Drop for Uni-directional**

•I-V Curve Characteristics



•Ratings and Characteristic Curves ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

FIG 1 :Peak power dissipation versus initial junction temperature
 $P_{pp}(T_j \text{ initial})/P_{pp}(T_j \text{ initial}=25^{\circ}\text{C})$

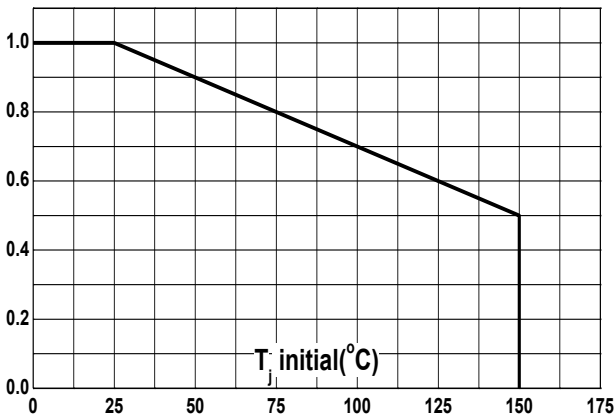


FIG 2:Peak pulse power versus exponential pulse duration

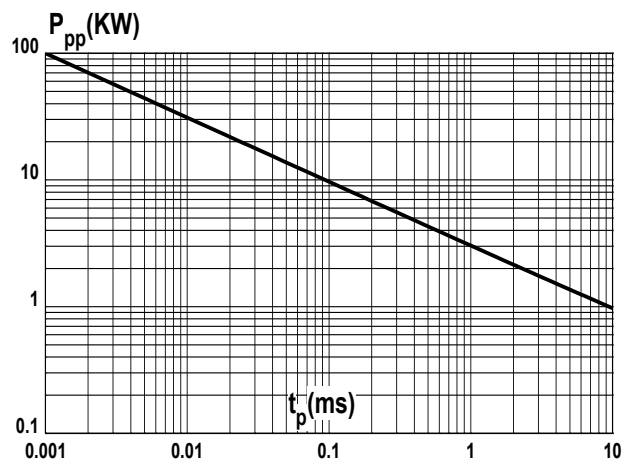


FIG 3: Peak forward voltage drop versus peak forward current

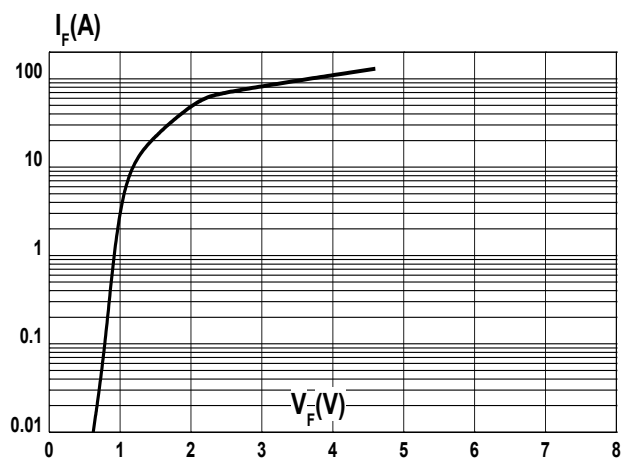


FIG 4: Maximum non-repetitive forward surge current uni-directional only

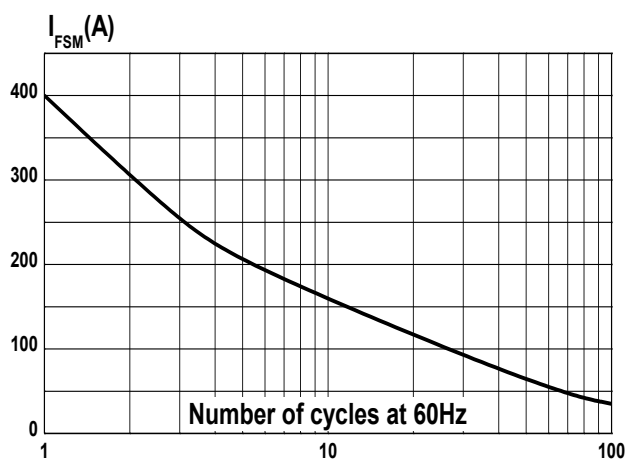
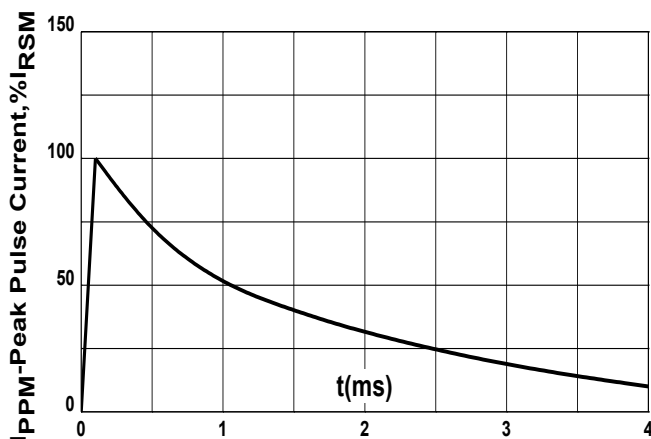
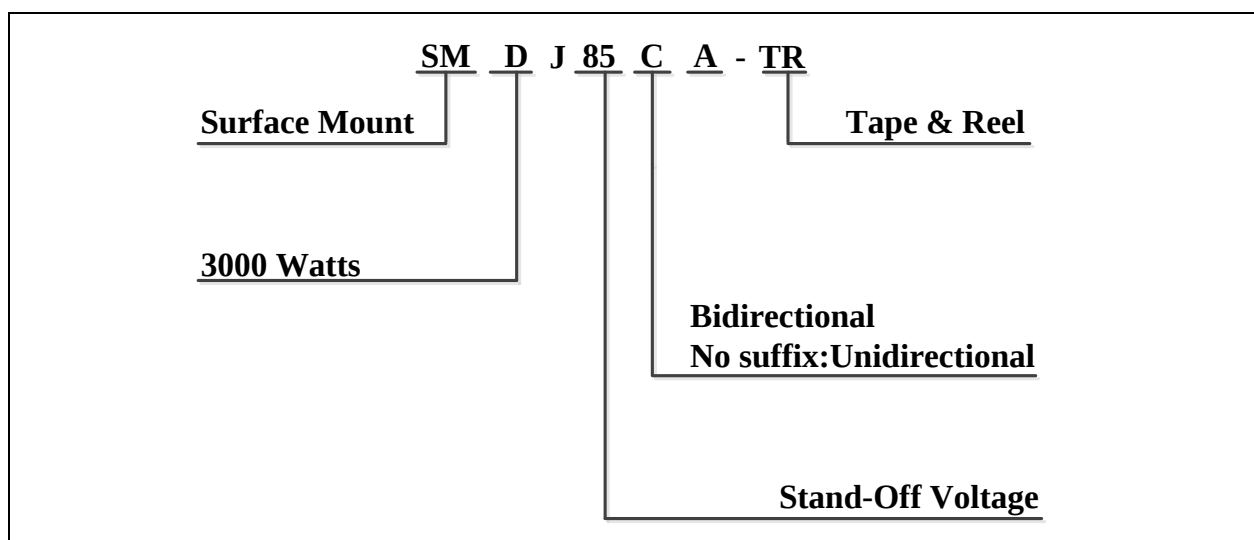


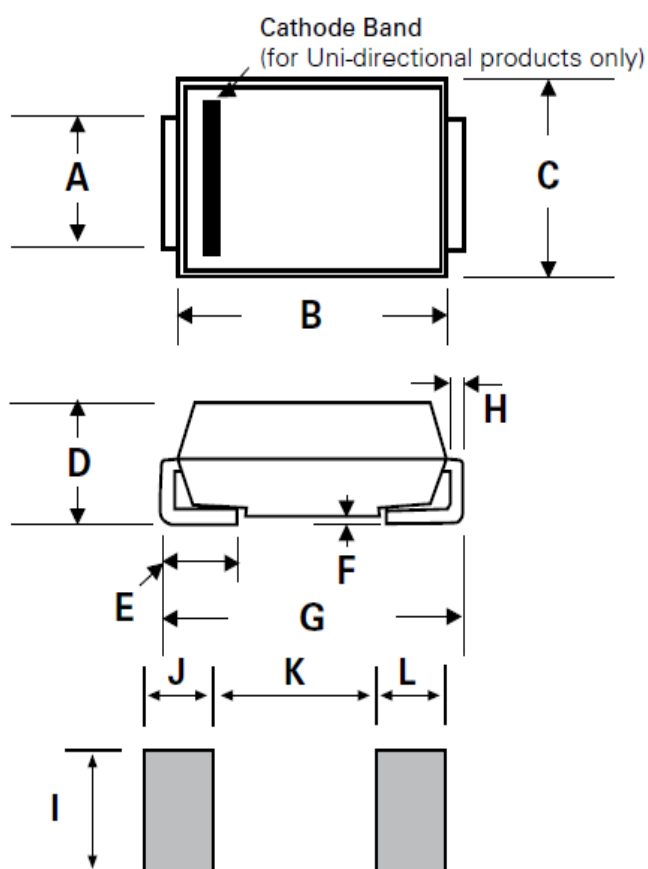
FIG 5: Pulse waveform



●Order Code

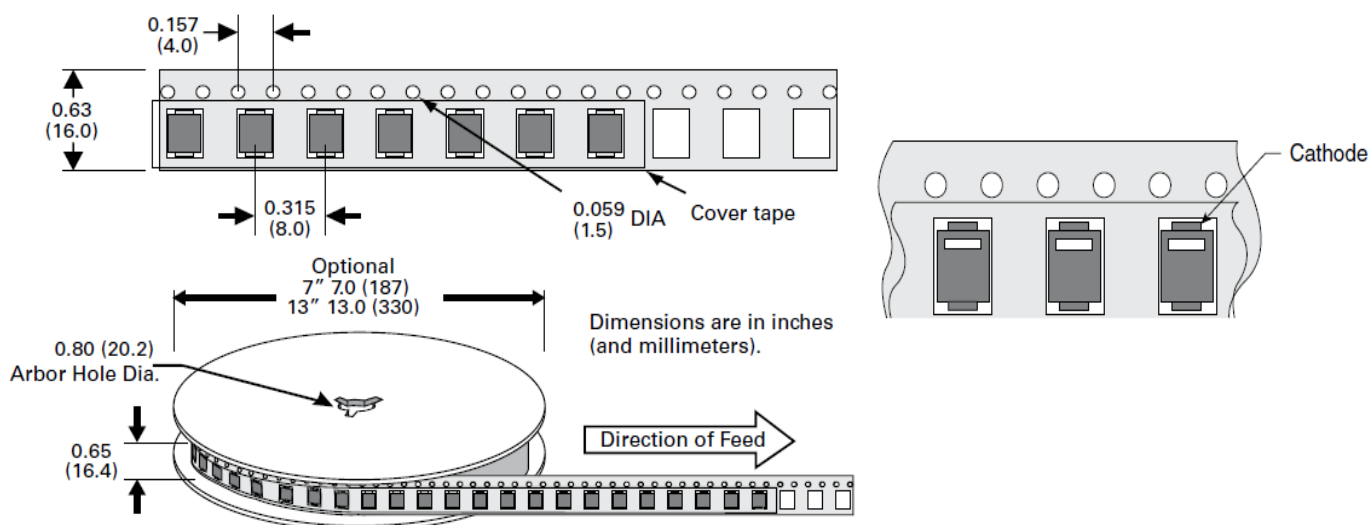


• Dimensions



REF.	Millimeters		Inches	
	Min	Max	Min	Max
A	0.114	0.126	2.900	3.200
B	0.260	0.280	6.600	7.110
C	0.220	0.245	5.590	6.220
D	0.079	0.103	2.060	2.620
E	0.030	0.060	0.760	1.520
F	-	0.008	-	0.203
G	0.305	0.320	7.750	8.130
H	0.006	0.012	0.152	0.305
I	0.129	-	3.300	-
J	0.094	-	2.400	-
K	-	0.165	-	4.200
L	0.094	-	2.400	

• Tape and reel specification



●Revision history

Date	Revision	Change
2-Nov-2016	1	First release