



Description

The 6.0SMDJ series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.



Features

- ◆ 6000W peak pulsepower capability at 10 x 1000 μ s waveform, repetition rate (duty cycle): 0.01%
- ◆ Glass Passivated chip junction
- ◆ For surface mounted applications to optimize board space
- ◆ Low profile package
- ◆ Built-in strain relief
- ◆ Low incremental surge resistance
- ◆ Excellent clamping capability
- ◆ Plastic package has UL flammability classification 94V-0
- ◆ Fast response time: typically less than 1.0ps from 0 Volts to BV min
- ◆ Typical IR less than 5uA above 22V
- ◆ High temperature soldering: 260°C/40 seconds at terminals
- ◆ IEC-61000-4-2 ESD 15KV(Air),8KV(Contact)
- ◆ ESD protection of data lines in accordance with IEC 61000-4-2(IEC801-2)
- ◆ EFT protection of data lines in accordance with IEC61000-4-4(IEC801-4)
- ◆ AEC -Q101 qualified.

Applications

TVS devices are ideal for the protection of I/O Interfaces, VCC bus and other vulnerable circuits used in Telecom, Computer, Industrial and Consumer electronic applications.



Maximum Ratings and Electrical Characteristics

(TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25°C by 10x1000µs waveform (Fig.2)(Note 1) (Note 2)	P _{PPM}	6000	W
Power Dissipation on infinite heat sink at TA=50°C	P _D	6.5	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Unidirectional only(Note 3)	I _{FSM}	300	A
Maximum Instantaneous Forward Voltage at 100A for Unidirectional only	V _F	3.5V/5.0	V
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C
Typical Thermal Resistance Junction to Lead	R _{uJL}	15	°C/W
Typical Thermal Resistance Junction to Ambient	R _{uJA}	75	°C/W

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above TA=25°C per Fig. 2.
2. Mounted on copper pad area of 0.31x0.31" (8.0 x 8.0mm) to each terminal.
3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.



Electrical Characteristics

PART NUMBER		REVERSE STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE VBR(V)MAX.@I T	TEST CURRENT	REVERSE LEAKAGE @VRWM	PEAK PULSE CURRENT	MAXIMUM CLAMPING VOLTAGE	@IDP
BI-POLAR	UNI-POLAR	VRWM (V)	VBR Min(V)	VBR Max(V)	IT (mA)	IR (µA)	Ipp (A)	Vc (v)
6.0SMDJ12CA	6.0SMDJ12A	12.0	13.30	14.70	5	5	331.7	19.9
6.0SMDJ13CA	6.0SMDJ13A	13.0	14.40	16.50	5	5	307.0	21.5
6.0SMDJ14CA	6.0SMDJ14A	14.0	15.60	17.20	5	5	284.5	23.2
6.0SMDJ15CA	6.0SMDJ15A	15.0	16.70	19.20	5	5	270.5	24.4
6.0SMDJ16CA	6.0SMDJ16A	16.0	17.80	19.70	5	5	253.8	26.0
6.0SMDJ17CA	6.0SMDJ17A	17.0	18.90	21.70	5	5	239.1	27.6
6.0SMDJ18CA	6.0SMDJ18A	18.0	20.00	23.30	5	5	226.0	29.2
6.0SMDJ20CA	6.0SMDJ20A	20.0	22.20	25.50	5	5	203.7	32.4
6.0SMDJ22CA	6.0SMDJ22A	22.0	24.40	28.00	5	5	185.9	35.5
6.0SMDJ24CA	6.0SMDJ24A	24.0	26.70	30.70	5	5	169.7	38.9
6.0SMDJ26CA	6.0SMDJ26A	26.0	28.90	33.20	5	5	156.8	42.1
6.0SMDJ28CA	6.0SMDJ28A	28.0	31.10	35.80	5	5	145.4	45.4
6.0SMDJ30CA	6.0SMDJ30A	30.0	33.30	38.30	5	5	136.4	48.4
6.0SMDJ33CA	6.0SMDJ33A	36.0	36.7	40.60	5	5	123.8	53.3
6.0SMDJ36CA	6.0SMDJ36A	36.0	40.00	46.00	5	5	113.6	58.1
6.0SMDJ40CA	6.0SMDJ40A	40.0	44.40	51.10	5	5	102.3	64.5
6.0SMDJ43CA	6.0SMDJ43A	43.0	47.8	52.8	5	5	95.1	69.4
6.0SMDJ45CA	6.0SMDJ45A	45.0	50.00	57.50	5	5	90.8	72.7
6.0SMDJ48CA	6.0SMDJ48A	48.0	53.30	58.90	5	5	85.3	77.4
6.0SMDJ51CA	6.0SMDJ51A	51.0	56.70	65.20	5	5	80.1	82.4
6.0SMDJ54CA	6.0SMDJ54A	54.0	60.00	69.00	5	5	75.8	87.1
6.0SMDJ58CA	6.0SMDJ58A	58.0	64.4	71.2	5	5	70.5	93.6
6.0SMDJ60CA	6.0SMDJ60A	60.0	66.7	73.7	5	5	68.2	96.8
6.0SMDJ60CA	6.0SMDJ60A	60.0	66.7	73.7	5	5	68.2	96.8



Electrical Characteristics

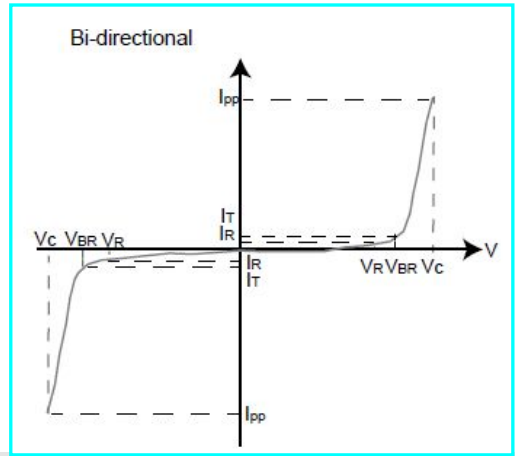
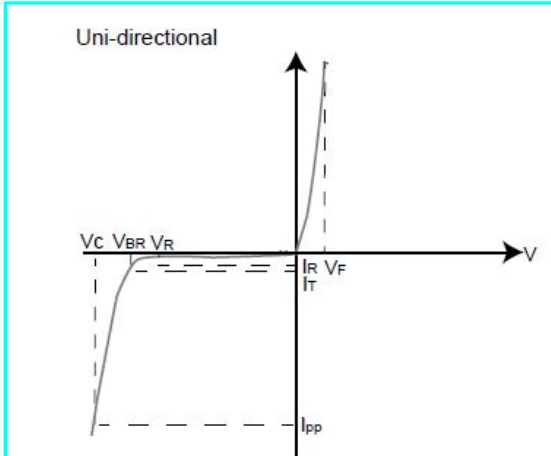
PART NUMBER		REVERSE STAND-OFF VOLTAGE BREAKDOWN	N VOLTAGE VBR(V)MAX. @IT	CURRENT TEST	LEAKAGE CURRENT @VTYPI	PULSE PEAK	CURRENT MAXIMUM	VOLTAGE CLAMPING	@Ipp VOLTAGE
BI-POLAR	UNI-POLAR	VRWM (V)	VBR Min(V)	VBR Max(V)	IT (mA)	IR (µA)	Ipp (A)	Vc (v)	
6.0SMDJ64CA	6.0SMDJ64A	64.0	71.10	81.80	5	5	64.1	103.0	
6.0SMDJ70CA	6.0SMDJ70A	70.0	77.8	95.1	5	5	58.4	113.0	
6.0SMDJ75CA	6.0SMDJ75A	75.0	83.3	92.1	5	5	54.5	121.0	
6.0SMDJ78CA	6.0SMDJ78A	78.0	86.70	99.70	5	5	52.4	126.0	
6.0SMDJ85CA	6.0SMDJ85A	85.0	94.40	108.20	5	5	48.2	137.0	
6.0SMDJ90CA	6.0SMDJ90A	90.0	100.0	111.0	5	5	45.2	146.0	
6.0SMDJ100CA	6.0SMDJ100A	100.0	111.0	123.00	5	5	40.7	162.0	
6.0SMDJ110CA	6.0SMDJ110A	110.0	122.0	135.00	5	5	37.3	177.0	
6.0SMDJ120CA	6.0SMDJ120A	120.0	133.0	147.00	5	5	34.2	193.0	
6.0SMDJ130CA	6.0SMDJ110A	130.0	144.0	159.00	5	5	31.6	209.0	
6.0SMDJ150CA	6.0SMDJ150A	150.0	167.0	185.00	5	5	27.2	243.0	
6.0SMDJ160CA	6.0SMDJ160A	160.0	178.0	197.00	5	5	25.5	259.0	
6.0SMDJ170CA	6.0SMDJ170A	170.0	189.0	209.00	5	5	24.0	275.0	
6.0SMDJ180CA	6.0SMDJ180A	180.0	201.0	222.0	5	5	22.6	292.0	
6.0SMDJ190CA	6.0SMDJ190A	190.0	211.0	233.00	5	5	21.4	308.0	
6.0SMDJ200CA	6.0SMDJ200A	200.0	224.0	247.00	5	5	20.4	324.0	
6.0SMDJ210CA	6.0SMDJ220A	210.0	237.0	263.00	5	5	18.5	356.0	
6.0SMDJ220CA	6.0SMDJ220A	220.0	246.0	272.00	5	5	18.5	356.0	
6.0SMDJ250CA	6.0SMDJ250A	250.0	279.0	309.00	5	5	16.3	405.0	
6.0SMDJ300CA	6.0SMDJ300A	300.0	335.0	371.00	5	5	13.6	486.0	
6.0SMDJ350CA	6.0SMDJ350A	350.0	391.0	432.00	5	5	11.6	567.0	
6.0SMDJ400CA	6.0SMDJ400A	400.0	447.0	494.00	5	5	10.2	648.0	
6.0SMDJ440CA	6.0SMDJ440A	440.0	492.0	543.00	5	5	9.3	713.0	



Notes:

For bidirectional type having V_{RWM} of 20 volts and less, the I_R limit is double.
For parts without A (V_{BR} is $\pm 10\%$ and V_C is 5% higher than A parts

I-V Curve Characteristics



Ratings and Characteristic Curves (TA=25°C unless otherwise noted)

Figure 1 - Peak Pulse Power Rating Curve

Figure 2 - Pulse Derating Curve

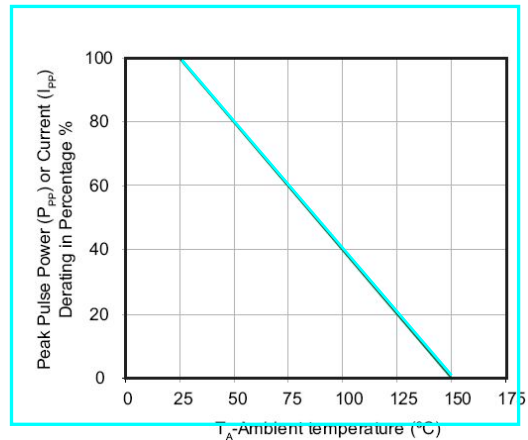
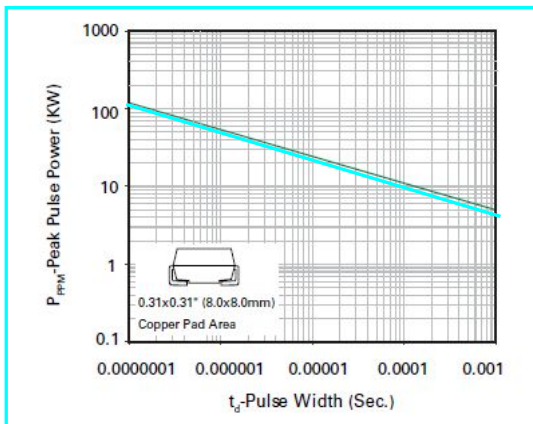
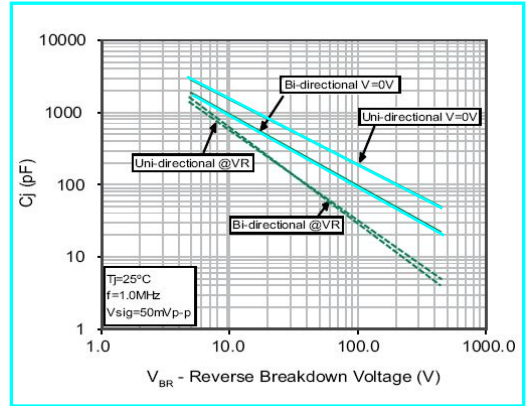
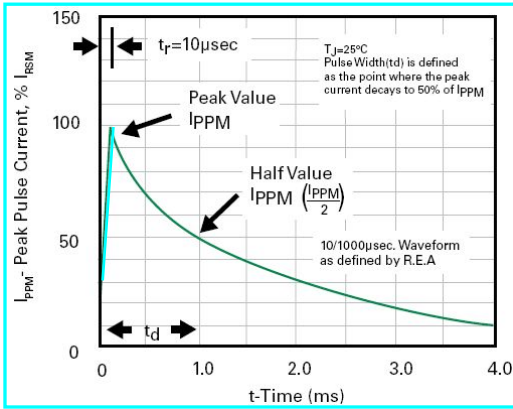


Figure 3 - Pulse Waveform

Figure 4 - Typical Junction Capacitance



Ratings and Characteristic Curves (TA=25°C unless otherwise noted)

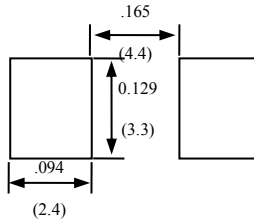
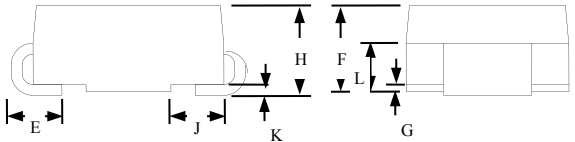
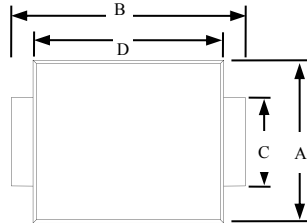
Figure 5 - Steady State Power Dissipation Derating Curve

Figure 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only




Product Dimensions

Dimension	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.220	0.245	5.59	6.22
B	0.305	0.320	7.75	8.13
C	0.114	0.126	2.90	3.20
D	0.260	0.280	6.60	7.11
E	0.030	0.060	0.76	1.52
F	0.077	0.094	1.95	2.40
G	-	0.008	-	0.203
H	0.79	0.103	2.06	2.62
J	0.030	0.060	0.76	1.52
K	0.008	0.014	0.20	0.35
L	0.039	0.049	0.99	1.24



Summary of Packing Options

Package Type	Packaging Option	Packing Quantity	Industry Standard
DO-214AB(SMC) 	Tape&Reel-16mm/13" tape	3000PCS	EIA STD RS-481

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