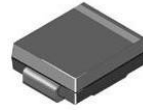


## Description

The 8.0SMDJ series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.



DO214AB

## Features

- ◆ 8000W peak pulsepower capability at 10 x 1000 $\mu$ 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-O
- ◆ Fast response time: typically less than 1.0ps from 0 Volts to BV min
- ◆ Typical IR less than 5 $\mu$ A 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)

## 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 <sub>PPM</sub>	8000	W
Power Dissipation on infinite heat sink at TA=50°C	P <sub>D</sub>	6.5	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Unidirectional only (Note 3)	I <sub>FSM</sub>	300	A
Maximum Instantaneous Forward Voltage at 100A for Unidirectional only	V <sub>F</sub>	3.5V/5.0	V
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to + 150	°C
Typical Thermal Resistance Junction to Lead	R <sub>uJL</sub>	15	°C/W
Typical Thermal Resistance Junction to Ambient	R <sub>uJA</sub>	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.

## 8.0SMDJ SERIES

## Transient Voltage Suppressors

## Electrical Characteristics

Part Number (Uni)	Part Number (Bi)	Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage $V_{BR}@I_T$			Reverse Leakage $@V_{RWM}$	Peak Pulse Current	Maximum Clamping Voltage @Ipp
		Uni	Bi	$V_{RWM}$ (V)	Min(V)	Max(V)	$I_T$ (mA)	$I_R$ ( $\mu A$ )	Ipp (A)	$V_C$ (V)
8.0SMDJ17A	8.0SMDJ17CA	8PEP	8BEP	17.0	18.90	20.90	5	5	290.0	27.6
8.0SMDJ18A	8.0SMDJ18CA	8PER	8BER	18.0	20.00	22.10	5	5	274.0	29.2
8.0SMDJ20A	8.0SMDJ20CA	8PEV	8BEV	20.0	22.20	24.50	5	5	247.0	32.4
8.0SMDJ22A	8.0SMDJ22CA	8PEX	8BEX	22.0	24.40	26.90	5	5	225.4	35.5
8.0SMDJ24A	8.0SMDJ24CA	8PEZ	8BEZ	24.0	26.70	29.50	5	5	205.7	38.9
8.0SMDJ26A	8.0SMDJ26CA	8PFE	8BFE	26.0	28.90	31.90	5	5	190.1	42.1
8.0SMDJ28A	8.0SMDJ28CA	8PFG	8BFG	28.0	31.10	34.40	5	5	176.2	45.4
8.0SMDJ30A	8.0SMDJ30CA	8PFK	8BFK	30.0	33.30	36.80	5	5	165.3	48.4
8.0SMDJ33A	8.0SMDJ33CA	8PFM	8BFM	33.0	36.70	40.60	5	5	150.1	53.3
8.0SMDJ36A	8.0SMDJ36CA	8PFP	8BFP	36.0	40.00	44.20	5	5	137.8	58.1
8.0SMDJ40A	8.0SMDJ40CA	8PFR	8BFR	40.0	44.40	49.10	5	5	124.1	64.5
8.0SMDJ43A	8.0SMDJ43CA	8PFT	8BFT	43.0	47.80	52.80	5	5	115.3	69.4
8.0SMDJ45A	8.0SMDJ45CA	8PFV	8BFV	45.0	50.00	55.30	5	5	110.1	72.7
8.0SMDJ48A	8.0SMDJ48CA	8PFX	8BFX	48.0	53.30	58.90	5	5	103.4	77.4
8.0SMDJ51A	8.0SMDJ51CA	8PFZ	8BFZ	51.0	56.70	62.70	5	5	97.1	82.4
8.0SMDJ54A	8.0SMDJ54CA	8PGE	8BGE	54.0	60.00	66.30	5	5	92.0	87.1
8.0SMDJ58A	8.0SMDJ58CA	8PGG	8BGG	58.0	64.40	71.20	5	5	85.5	93.6
8.0SMDJ60A	8.0SMDJ60CA	8PGK	8BGK	60.0	66.70	73.70	5	5	82.7	96.8
8.0SMDJ64A	8.0SMDJ64CA	8PGM	8BGM	64.0	71.10	78.60	5	5	77.7	103.0
8.0SMDJ70A	8.0SMDJ70CA	8PGP	8BGP	70.0	77.80	86.00	5	5	71.0	113.0
8.0SMDJ75A	8.0SMDJ75CA	8PGR	8BGR	75.0	83.30	92.10	5	5	66.2	121.0
8.0SMDJ78A	8.0SMDJ78CA	8PGT	8BGT	78.0	86.70	95.80	5	5	63.5	126.0
8.0SMDJ80A	8.0SMDJ80CA	8PGB	8BGB	80.0	88.80	97.60	5	5	61.7	129.6
8.0SMDJ85A	8.0SMDJ85CA	8PGV	8BGV	85.0	94.40	104.00	5	5	58.4	137.0

# 8.0SMDJ SERIES

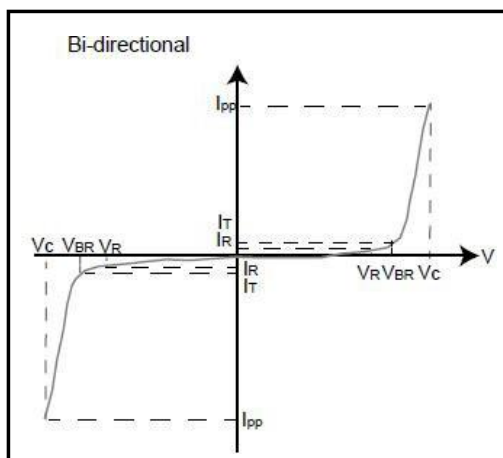
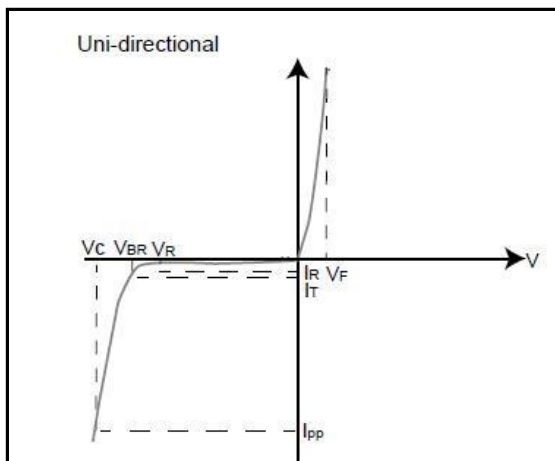
## Transient Voltage Suppressors

Notes:

For bidirectional type having VRWM of 20 volts and less, the IR limit is double.

For parts without A (VBR is  $\pm 10\%$  and VC is 5% higher than A parts)

### I-V Curve Characteristics



### Ratings and Characteristic Curves

Figure 1 - Peak Pulse Power Rating Curve

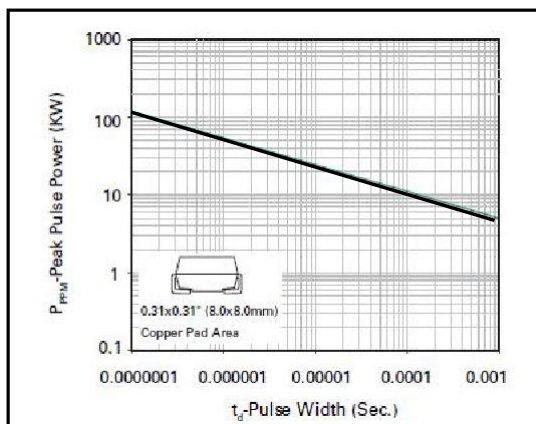
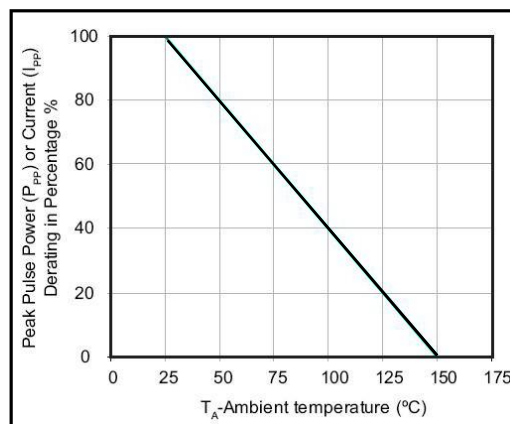


Figure 2 - Pulse Derating Curve



# 8.0SMDJ SERIES

## Transient Voltage Suppressors

Figure 3 - Pulse Waveform

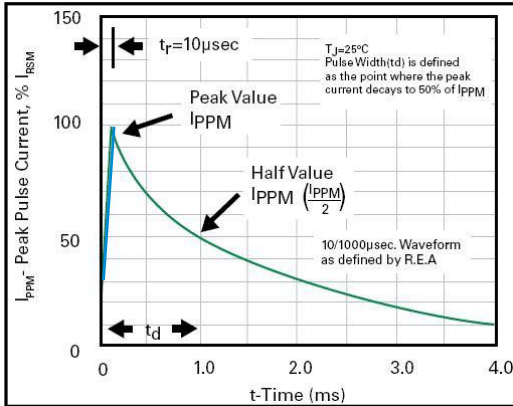
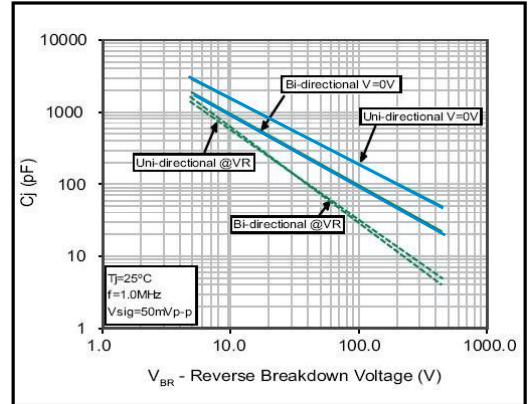


Figure 4 - Typical Junction Capacitance



## Ratings and Characteristic Curves

Figure 5 - Steady State Power Dissipation Derating Curve

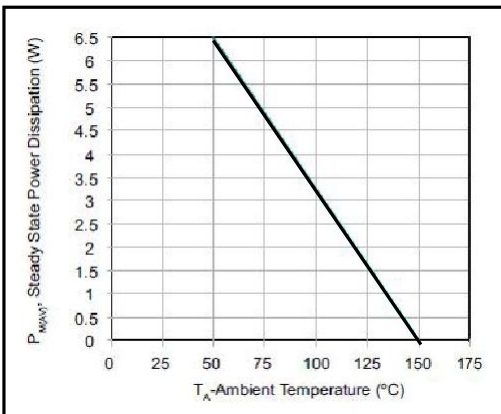
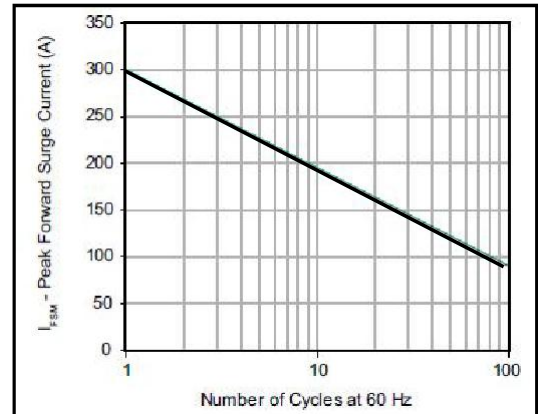


Figure 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



Part Numbering System

8.0SMDJ

XXX

C

A

(1)

(2)

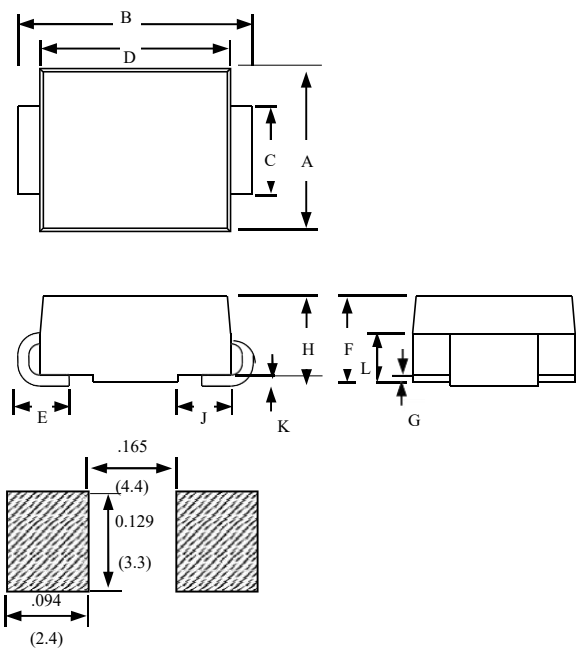
(3)

(4)

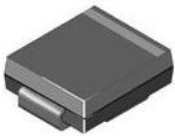
- (1) SERIES.
- (2)  $V_R$  VOLTAGE.
- (3) BI-DIRECTIONAL.
- (4) 5% VOLTAGE TOLERANCE.

Product Dimensions

Dime-n sion	Inches		Millimeters	
	M <sub>IN</sub>	M <sub>AX</sub>	M <sub>IN</sub>	M <sub>AX</sub>
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

