

# Surface Mount Transient Voltage Suppressors (TVS)

**8.0SMDJ Series    22 To 36 V    8000W**

## Description

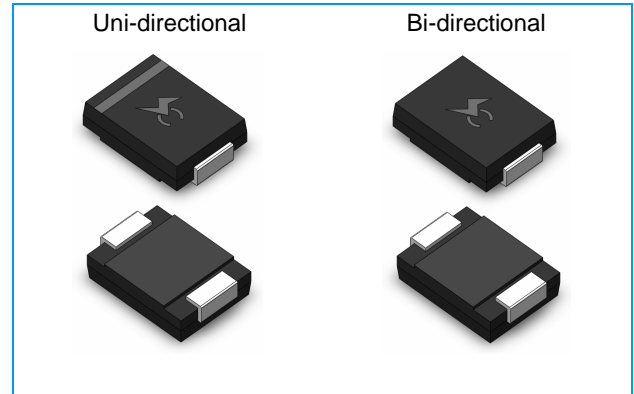
The 8.0SMDJ series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

## Features

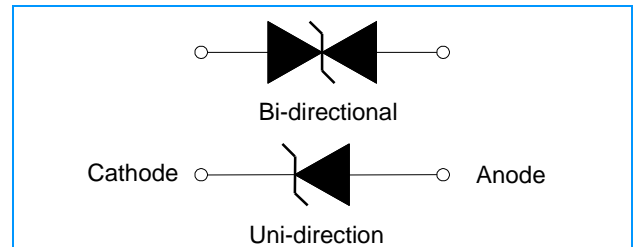
- u Glass passivated chip
- u Low leakage
- u Uni and Bidirectional unit
- u Excellent clamping capability
- u 8000W Peak power capability at 10 × 1000µs waveform  
Repetition rate (duty cycle):0.01%
- u Very fast response time
- u RoHS compliant

## Applications

TVS devices are ideal for the protection of I/O interfaces, V<sub>CC</sub> bus and other vulnerable circuits used in Telecom, Computer, Industrial and Consumer electronic applications.



## Functional Diagram



## Maximum Ratings (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation with a 10/1000µs waveform (Fig.1)(Note 1), (Note 2)	P <sub>PPM</sub>	8000	Watts
Peak Pulse Current with a 10/1000µs waveform.(Note1,Fig.3)	I <sub>PP</sub>	See Next Table	Amps
Power Dissipation on Infinite Heat Sink at T <sub>L</sub> =75°C	P <sub>M(AV)</sub>	6.5	Watt
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	I <sub>FSM</sub>	300	Amps
Maximum Instantaneous Forward Voltage at 25A for Unidirectional Only (Note 4)	V <sub>F</sub>	3.5/5.0	Voltage
Operating junction and Storage Temperature Range.	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

### Notes:

1. Non-repetitive current pulse, per Fig. 3 and derated above T<sub>A</sub> = 25°C per Fig. 2.
2. Mounted on 5.0mm x 5.0mm (0.03mm thick) Copper Pads to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.
4. V<sub>F</sub> < 3.5V for V<sub>BR</sub> < 200V and V<sub>F</sub> < 6.5V for V<sub>BR</sub> > 201V.

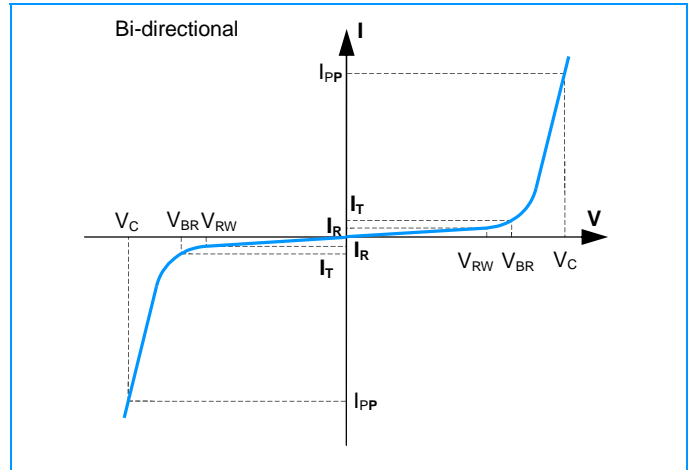
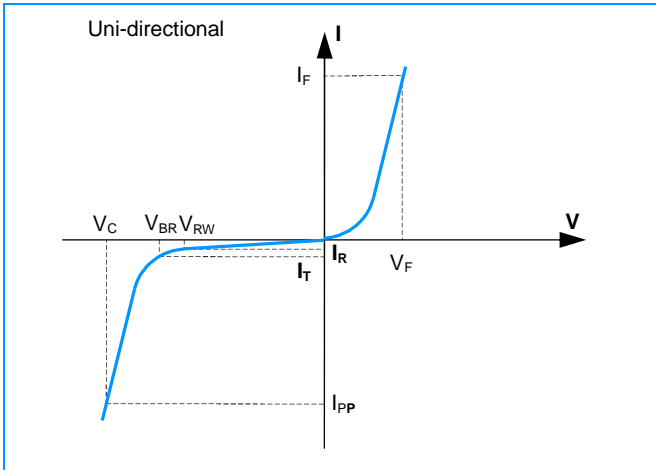
## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

Part Number		Marking		Reverse Stand-Off Voltage V <sub>RWM</sub> (V)	Breakdown Voltage V <sub>BR</sub> (V) @I <sub>T</sub>		Test Current I <sub>T</sub> (mA)	Maximum Clamping Voltage V <sub>C</sub> @IPP (V)	Maximum Peak Pulse Current IPP (A)	Maximum Reverse Leakage I <sub>R</sub> @V <sub>RWM</sub> (µA)
Uni	Bi	Uni	Bi		MIN	MAX				
8.0SMDJ22A	8.0SMDJ22CA	8PEX	8BEX	22	24.4	26.9	1	35.5	225	5
8.0SMDJ24A	8.0SMDJ24CA	8PEZ	8BEZ	24	26.7	29.5	1	38.9	206	5
8.0SMDJ26A	8.0SMDJ26CA	8PFE	8BFE	26	28.9	31.9	1	42.1	190	5
8.0SMDJ33A	8.0SMDJ33CA	8PFM	8BFM	33	36.7	40.6	1	53.3	150	5
8.0SMDJ36A	8.0SMDJ36CA	8PFP	8BFP	36	40.0	44.2	1	58.1	138	5

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## I-V Curve Characteristics



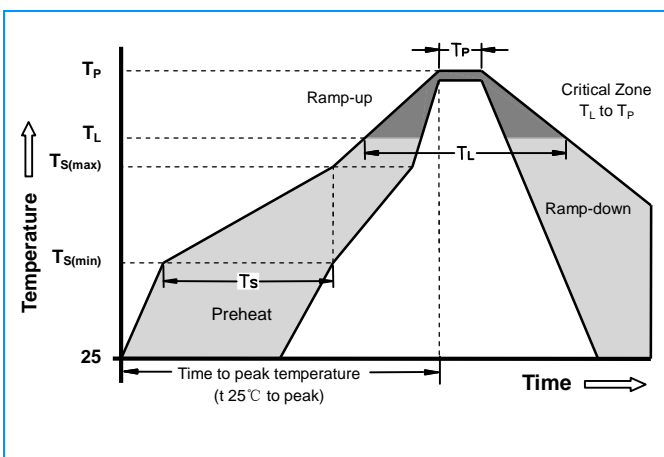
## Physical Specifications

<b>Weight</b>	0.007 ounce, 0.21 gram
<b>Case</b>	JEDEC DO-214AB Molded Plastic over glass passivated junction
<b>Polarity</b>	Color band denotes cathode except Bipolar
<b>Terminal</b>	Matte Tin-plated leads, Solderable per JESD22-B102D

## Environmental Specifications

<b>Temperature Cycle</b>	JESD22-A104
<b>Pressure Cooker</b>	JESD22-A102
<b>High Temp. Storage</b>	JESD22-A103
<b>HTRB</b>	JESD22-A108
<b>Thermal Shock</b>	JESD22-A106

## Soldering Parameters

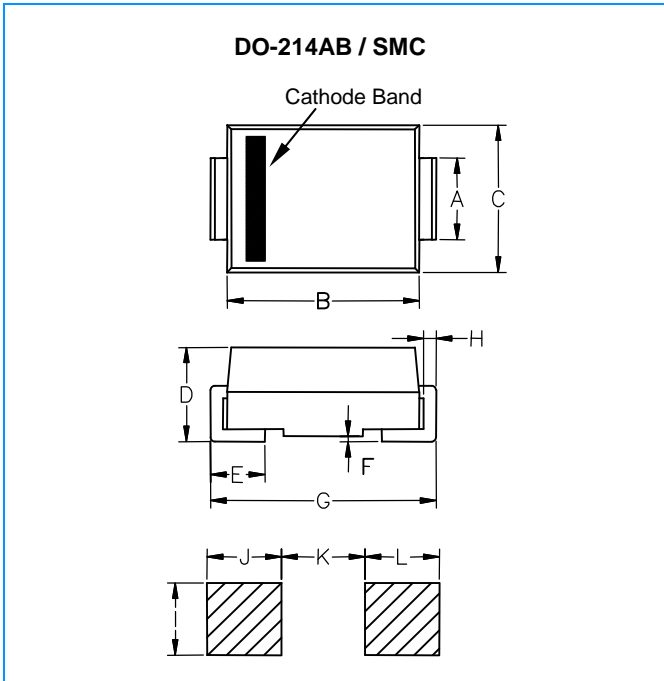


<b>Reflow Condition</b>		Lead-free assembly
<b>Pre Heat</b>	-Temperature Min ( $T_{S(min)}$ )	150°C
	-Temperature Max ( $T_{S(max)}$ )	200°C
	- Time (min to max) ( $T_s$ )	60 -180 Seconds
<b>Average ramp up rate ( Liquidus Temp <math>T_L</math> ) to peak</b>		3°C/second max
<b><math>T_{S(max)}</math> to <math>T_L</math> - Ramp-up Rate</b>		3°C/second max
<b>Reflow</b>	- Temperature ( $T_L$ ) (Liquidus)	217°C
	- Time (min to max) ( $T_L$ )	60 -150 Seconds
<b>Peak Temperature (<math>T_p</math>)</b>		260 +0/-5°C
<b>Time within 5°C of actual peak Temperature (<math>t_p</math>)</b>		20 -40 Seconds
<b>Ramp-down Rate</b>		6°C/second max
<b>Time 25°C to peak Temperature (<math>T_p</math>)</b>		8 minutes Max
<b>Do not exceed</b>		280°C

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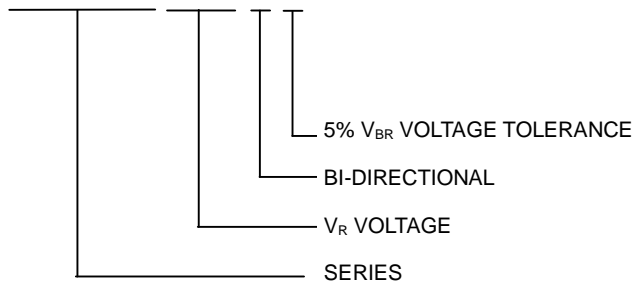
## Dimensions



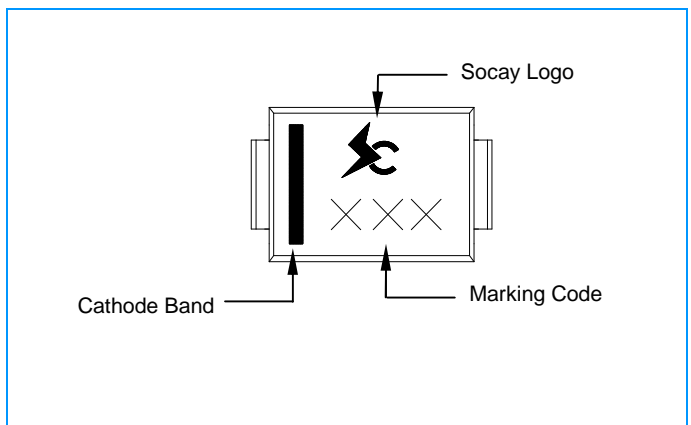
Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.114	0.126	2.86	3.160
B	0.260	0.280	6.520	7.020
C	0.220	0.245	5.520	6.150
D	0.079	0.103	1.980	2.590
E	0.030	0.060	0.750	1.510
F	-	0.008	-	0.203
G	0.305	0.320	7.640	8.020
H	0.006	0.012	0.152	0.305
I	0.129	-	3.300	-
J	0.094	-	2.400	-
K	-	0.165	-	4.200
L	0.094	-	2.400	-

## Part Numbering

**8.0SMDJxxxCA**



## Part Marking



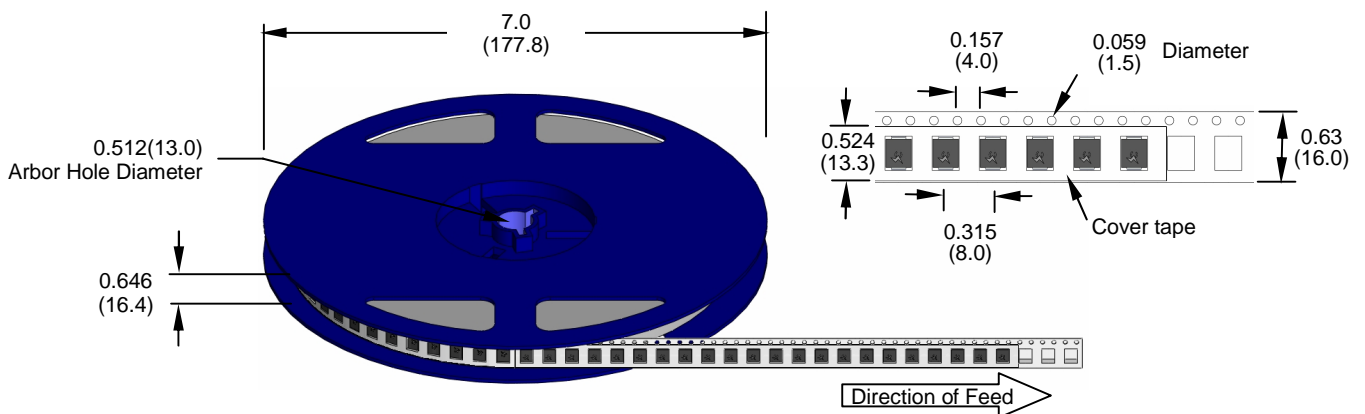
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## Packaging

Part Number	Component Package	Quantity	Packaging Option	Packaging Specification
8.0SMDJXXXXX	DO-214AB	500	Tape & Reel -16mm/7"tape	EIA STD RS-481

## Tape and Reel Specifications



Dimensions are in inches  
(and millimeters)