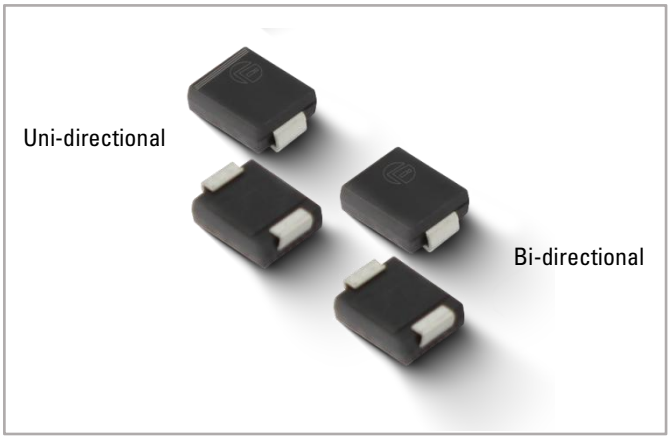
8.0SMDJ Series
Surface Mount – 8000W



Additional Information

Resources | Accessories | Samples

Maximum Ratings and Thermal Characteristics

(T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation by 10/1000μs Waveform(Fig.1)(Note1)(Note2) -Single Die Parts	P_{PPM}	8000	W
Power Dissipation on Infinite Heat Sink at T_L=50℃	P_D	6.5	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	I_{FSM}	300	A
Maximum Instantaneous Forward Voltage at 100A for Unidirectional Only	V_F	5	V
Operating Temperature Range	T_J	-55 to 150	℃
Storage Temperature Range	T_{STG}	-55 to 150	℃
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	15	℃/W
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	75	℃/W

Notes:

1. Non-repetitive current pulse , per Fig.3 and derated above T_J (initial) =25℃ 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..

Description

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

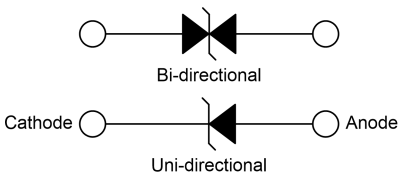
Features

- 8000W peak pulse power capability at 10/1000μs waveform, repetition rate (duty cycles):0.01%
- Excellent clamping capability
- Low incremental surge resistance
- Typical I_R less than 5μA when V_B min>22V
- For surface mounted applications to optimize board space
- Low profile package
- Built-in strain relief
- Typical failure mode is short from over-specified voltage or current
- Whisker test is conducted based on JEDEC JESD201A per its table 4a and 4c
- ESD protection of data lines in accordance with IEC 61000-4-2, 30kV(Air), 30kV (Contact)
- EFT protection of data lines in accordance with IEC 61000-4-4
- Fast response time: typically less than 1.0ps from 0V to V_B min
- Compact size with high power density in DO-214AB Package
- Glass passivated chip junction
- High temperature to reflow soldering guaranteed: 260℃/20~40sec.
- V_B @ T_J= V_B@25℃ x (1+ α Tx (T_J - 25)) (α T:Temperature Coefficient, typical value is 0.1%)
- Meet MSL level1, per J-STD-020, LF maximum peak of 260℃
- Matte tin lead–free plated
- Halogen free and RoHS compliant
- Pb-free E3 means 2nd level interconnect is Pb-free and the terminal finish material is tin(Sn) (IPC/JEDEC J-STD-609A.01)

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.

Functional Diagram



8.0SMDJ Series
Surface Mount – 8000W

Electrical Characteristics (T_A=25℃ unless otherwise noted)

Part Number		Device Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage @I_T		Test Current	Maximum Clamping Voltage @I_{PP}	Peak Pulse Current	Reverse Leakage @V_R
Uni.	Bi.	Uni.	Bi.	V_R(V)	$V_{B\ Min.}$(V)	$V_{B\ Max.}$(V)	I_T(mA)	V_C(V)	I_{PP}(A)	I_R(μA)
8.0SMDJ22A	8.0SMDJ22CA	8PEX	8BEX	22.0	24.40	26.90	1	35.5	225.4	5
8.0SMDJ24A	8.0SMDJ24CA	8PEZ	8BEZ	24.0	26.70	29.50	1	38.9	205.7	5
8.0SMDJ26A	8.0SMDJ26CA	8PFE	8BFE	26.0	28.90	31.90	1	42.1	190.1	5
8.0SMDJ28A	8.0SMDJ28CA	8PFG	8BFG	28.0	31.10	34.40	1	45.4	176.2	5
8.0SMDJ30A	8.0SMDJ30CA	8PFK	8BFK	30.0	33.30	36.80	1	48.4	165.3	5
8.0SMDJ33A	8.0SMDJ33CA	8PFM	8BFM	33.0	36.70	40.60	1	53.3	150.1	5
8.0SMDJ36A	8.0SMDJ36CA	8PFP	8BFP	36.0	40.00	44.20	1	58.1	137.8	5
8.0SMDJ40A	8.0SMDJ40CA	8PFR	8BFR	40.0	44.40	49.10	1	64.5	124.2	5
8.0SMDJ43A	8.0SMDJ43CA	8PFT	8BFT	43.0	47.80	52.80	1	69.4	115.4	5
8.0SMDJ45A	8.0SMDJ45CA	8PFV	8BFV	45.0	50.00	55.30	1	72.7	110.1	5
8.0SMDJ48A	8.0SMDJ48CA	8PFX	8BFX	48.0	53.30	58.90	1	77.4	103.6	5
8.0SMDJ51A	8.0SMDJ51CA	8PFZ	8BFZ	51.0	56.70	62.70	1	82.4	97.0	5
8.0SMDJ54A	8.0SMDJ54CA	8PGE	8BGE	54.0	60.00	66.30	1	87.1	92.0	5
8.0SMDJ58A	8.0SMDJ58CA	8PGG	8BGG	58.0	64.40	71.20	1	93.6	85.6	5
8.0SMDJ60A	8.0SMDJ60CA	8PGK	8BGK	60.0	66.70	73.70	1	96.8	82.8	5
8.0SMDJ64A	8.0SMDJ64CA	8PGM	8BGM	64.0	71.10	78.60	1	103.0	77.8	5
8.0SMDJ70A	8.0SMDJ70CA	8PGP	8BGP	70.0	77.80	86.00	1	113.0	70.9	5
8.0SMDJ75A	8.0SMDJ75CA	8PGR	8BGR	75.0	83.30	92.10	1	121.0	66.3	5
8.0SMDJ78A	8.0SMDJ78CA	8PGT	8BGT	78.0	86.70	95.80	1	126.0	63.6	5
8.0SMDJ85A	8.0SMDJ85CA	8PGV	8BGV	85.0	94.40	104.00	1	137.0	58.4	5
8.0SMDJ90A	8.0SMDJ90CA	8PGX	8BGX	90.0	100.00	111.00	1	146.0	54.9	5
8.0SMDJ100A	8.0SMDJ100CA	8PGZ	8BGZ	100.0	111.00	123.00	1	162.0	49.4	5

8.0SMDJ Series
Surface Mount – 8000W

Ratings and Characteristic Curves (T_A=25℃ unless otherwise noted)

Figure 1:
Peak Pulse Power Rating Curve

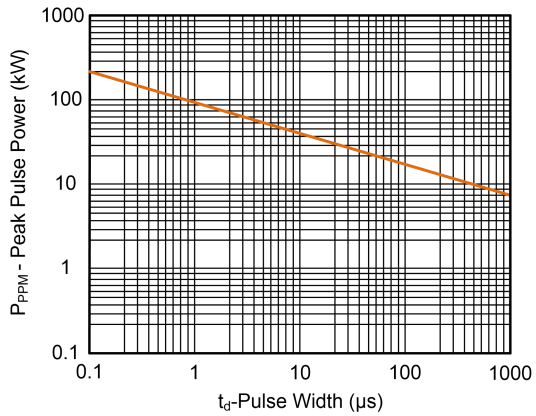


Figure 2:
Pulse Derating Curve

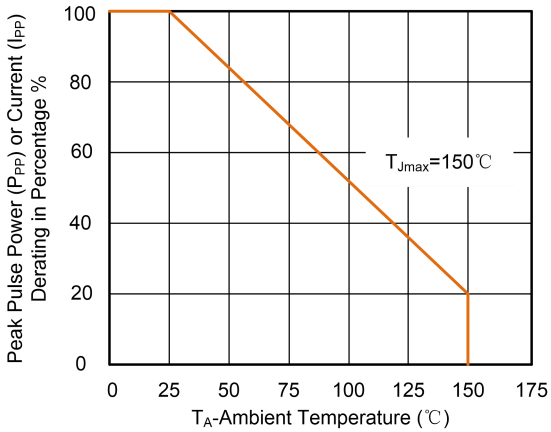


Figure 3:
Pulse Waveform

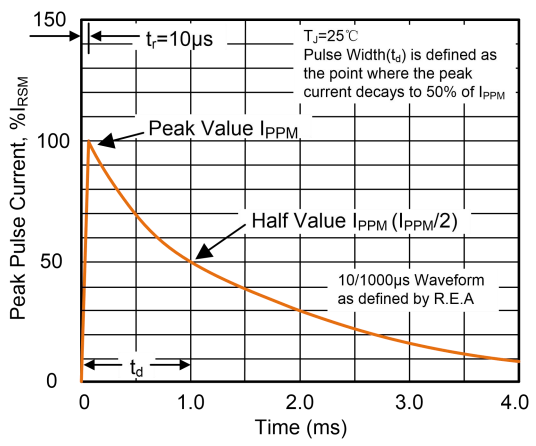


Figure 4:
Typical Junction Capacitance

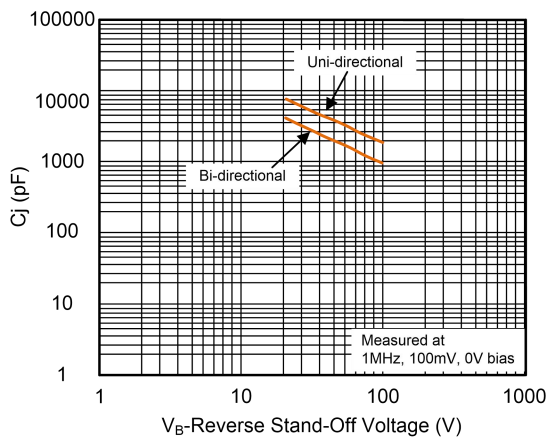


Figure 5:
Steady State Power Dissipation Derating Curve

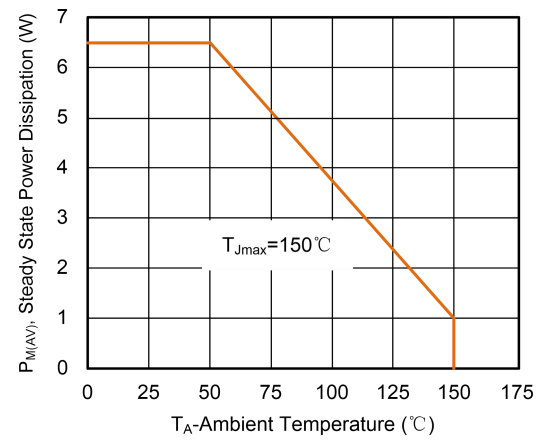
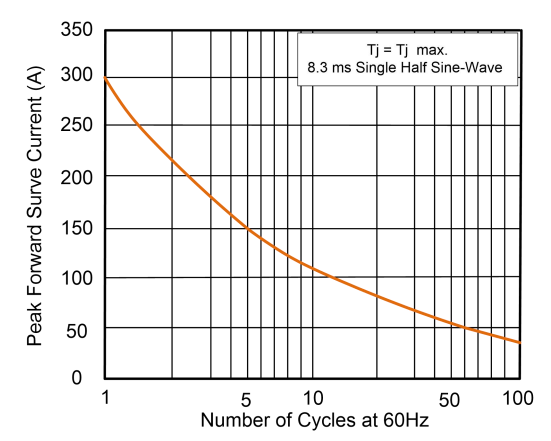


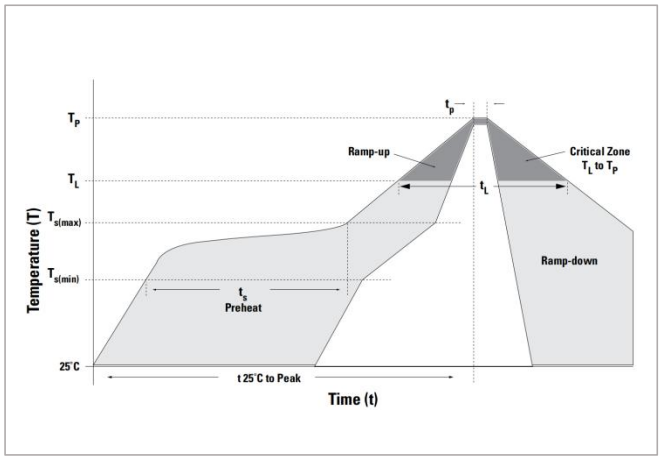
Figure 6:
Maximum Non-Repetitive Forward Surge Current Uni-Directional



8.0SMDJ Series
Surface Mount – 8000W

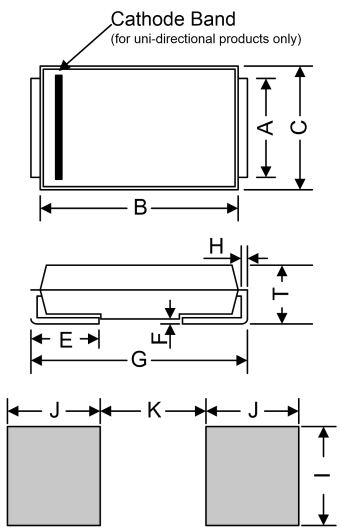
Soldering Parameters

Reflow Condition		Lead–free assembly
Pre Heat	**-Temperature Min ($T_{S\ min}$)**	150℃
	-Temperature Max ($T_{S\ max}$)	200℃
	-Time (min to max) (t_S)	60 – 180 secs
Average ramp-up rate(Liquidus Temp (T_L) to peak		3℃/second max.
$T_{S\ (max)}$ to T_L-Ramp-up Rate		3℃/second max.
Reflow	**-Temperature (T_L) (Liquidus)**	217℃
	-Time (min to max) (t_L)	60-150 seconds
Peak Temperature (T_P)		260℃
Time within 5℃ of actual Peak Temperature (t_P)		20-40 seconds
Ramp-down Rate		6℃/second max.
Time 25℃ to Peak Temperature		8 minutes max.
Do not exceed		260℃



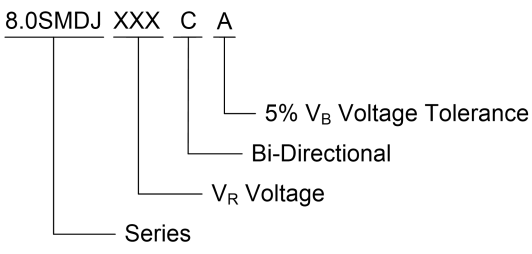
Dimensions

DO-214AB (SMC)

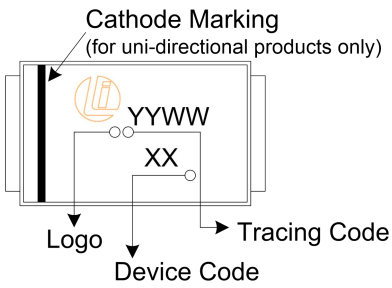


Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.900	3.200	0.114	0.126
B	6.600	7.110	0.260	0.280
C	5.590	6.220	0.220	0.245
E	0.760	1.520	0.030	0.060
F	-	0.203	-	0.008
G	7.750	8.130	0.305	0.320
H	0.152	0.305	0.006	0.012
T	2.200	2.750	0.087	0.108
I	3.300	-	0.129	-
J	2.400	-	0.094	-
K	-	4.200	-	0.165

Part Numbering System



Part Marking System

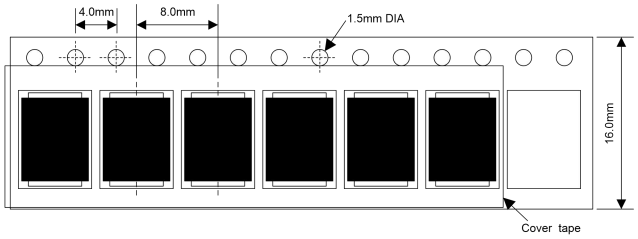


Packaging

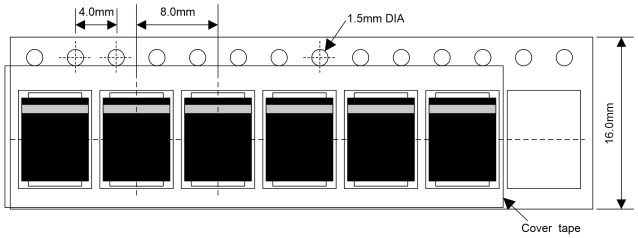
Part number	Component Package	Quantity	Packaging Option	Packaging Specification
8.0SMDJxxxXX	DO-214AB	3000	Tape & Reel - 16mm tape/13" reel	EIA STD RS-481

Tape and Reel Specification

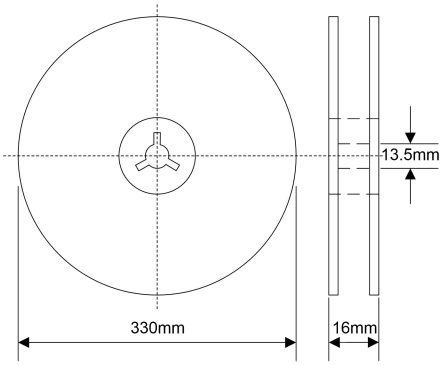
Tape



For Uni-Devices



13 Inches Reel



Quantity：3000pcs/reel