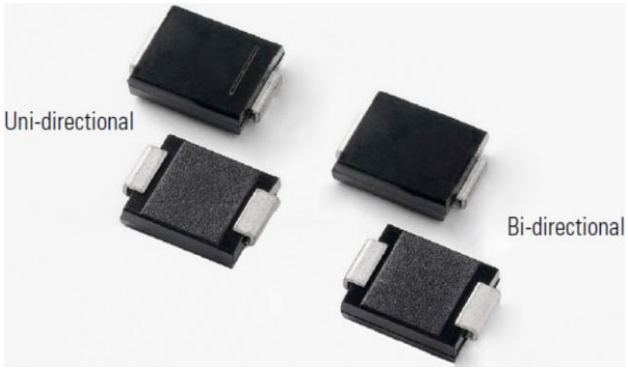
8.0SMDJ Series

Description

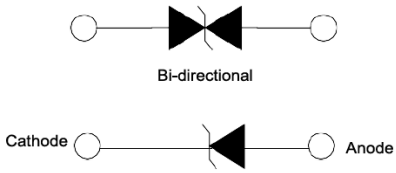
The 8.0SMDJ series is designed to protect voltage sensitive components from high voltage, high energy transients. They have excellent clamping capability, high surge capability, low zener impedance and fast response time. The 8.0SMDJ series is supplied in YINT Semiconductor's exclusive, cost-effective, highly reliable and is ideally suited for use in communication systems, automotive, numerical controls , process controls, medical equipment, business machines, power supplies and many other industrial/consumer Applications.



Features

- Case: DO-214AB/SMC
- For surface mounted applications in order to optimize board space.
- 8000 W peak pulse power capability with a 10/1000 μs waveform
- Typical failure mode is short from over-specified voltage or current.
- High Temperature soldering:260°C/10 seconds at terminals.
- Terminal: Solder plated, solderable per MIL-STD-750,Method 2026.
- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact).

Functional Diagram



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 (TA=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation by 10/1000μs Waveform (note1 note 2)	P_{PK}	8000	Watts
Peak Forward Surge Current 8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	I_{FSM}	300	Amps
Steady State Power Dissipation @ T_L = 50 °C	$P_{M(AV)}$	6.5	Watts
Maximum Instantaneous Forward Voltage @ I_{PP} = 50 A (For Unidirectional Units Only)	V_F	5	Volts
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

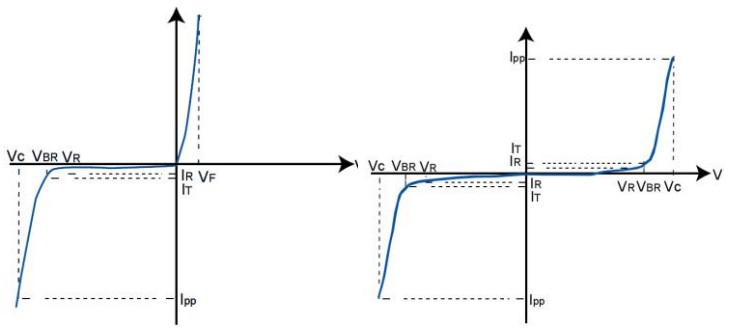
NOTES:

1. Non-repetitive current pulse, per Pulse Waveform graph and derated above T_A = 25 °C per Pulse Derating Curve.
2. Thermal Resistance Junction to Lead.
3. 8.3 ms Single Half-Sine Wave duty cycle = 4 pulses maximum per minute (unidirectional units only).

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Part Number (Bi)	Part Number (Uni)	MARKING		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Volts)@I_T		Test Current I_T(mA)	Maximum Reverse Leakage I_R @ V_R(μA)	Maximum Peak Pulse Current Ipp(A)	Maximum Clamping Voltage V_C @I_{pp}(V)
		BI	UNI		Min .V	Max .V				
8.0SMDJ12CA	8.0SMDJ12A	8BEP	8PEP	12.0	13.30	14.70	10	800	402.1	19.9
8.0SMDJ13CA	8.0SMDJ13A	8BEQ	8PEQ	13.0	14.40	15.90	10	500	372.1	21.5
8.0SMDJ14CA	8.0SMDJ14A	8BER	8PER	14.0	15.60	17.20	10	200	344.9	23.2
8.0SMDJ15CA	8.0SMDJ15A	8BES	8PES	15.0	16.70	18.50	1	100	327.9	24.4
8.0SMDJ16CA	8.0SMDJ16A	8BET	8PET	16.0	17.80	19.70	1	50	307.7	26.0
8.0SMDJ17CA	8.0SMDJ17A	8BEU	8PEU	17.0	18.90	20.90	1	20	290.0	27.6
8.0SMDJ18CA	8.0SMDJ18A	8BEV	8PEV	18.0	20.00	22.10	1	10	274.0	29.2
8.0SMDJ20CA	8.0SMDJ20A	8BEW	8PEW	20.0	22.20	24.50	1	5	247.0	32.4
8.0SMDJ22CA	8.0SMDJ22A	8BEX	8PEX	22.0	24.40	26.90	1	5	225.4	35.5
8.0SMDJ24CA	8.0SMDJ24A	8BEZ	8PEZ	24.0	26.70	29.50	1	5	205.7	38.9
8.0SMDJ26CA	8.0SMDJ26A	8BFE	8PFE	26.0	28.90	31.90	1	5	190.1	42.1
8.0SMDJ28CA	8.0SMDJ28A	8BFG	8PFG	28.0	31.10	34.40	1	5	176.2	45.4
8.0SMDJ30CA	8.0SMDJ30A	8BFK	8PFK	30.0	33.30	36.80	1	5	165.3	48.4
8.0SMDJ33CA	8.0SMDJ33A	8BFM	8PFM	33.0	36.70	40.60	1	5	150.1	53.3
8.0SMDJ36CA	8.0SMDJ36A	8BFP	8PFP	36.0	40.00	44.20	1	5	137.8	58.1
8.0SMDJ40CA	8.0SMDJ40A	8BFR	8PFR	40.0	44.40	49.10	1	5	124.1	64.5
8.0SMDJ43CA	8.0SMDJ43A	8BFT	8PFT	43.0	47.80	52.80	1	5	115.3	69.4
8.0SMDJ45CA	8.0SMDJ45A	8BFV	8PFV	45.0	50.00	55.30	1	5	110.1	72.7
8.0SMDJ48CA	8.0SMDJ48A	8BFX	8PFX	48.0	53.30	58.90	1	5	103.4	77.4
8.0SMDJ51CA	8.0SMDJ51A	8BFZ	8PFZ	51.0	56.70	62.70	1	5	97.2	82.4
8.0SMDJ54CA	8.0SMDJ54A	8BGE	8PGE	54.0	60.00	66.30	1	5	92.0	87.1
8.0SMDJ58CA	8.0SMDJ58A	8BGG	8PGG	58.0	64.40	71.20	1	5	85.5	93.6
8.0SMDJ60CA	8.0SMDJ60A	8BGK	8PGK	60.0	66.70	73.70	1	5	82.7	96.8
8.0SMDJ64CA	8.0SMDJ64A	8BGM	8PGM	64.0	71.10	78.60	1	5	77.7	103.0
8.0SMDJ70CA	8.0SMDJ70A	8BGP	8PGP	70.0	77.80	86.00	1	5	71.0	113.0
8.0SMDJ75CA	8.0SMDJ75A	8BGR	8PGR	75.0	83.30	92.10	1	5	66.2	121.0
8.0SMDJ78CA	8.0SMDJ78A	8BGT	8PGT	78.0	86.70	95.80	1	5	63.5	126.0
8.0SMDJ85CA	8.0SMDJ85A	8BGV	8PGV	85.0	94.40	104.00	1	5	58.4	137.0
8.0SMDJ90CA	8.0SMDJ90A	8BGX	8PGX	90.0	100.00	111.00	1	5	55.0	146.0
8.0SMDJ100CA	8.0SMDJ100A	8BGZ	8PGZ	100.0	111.00	123.00	1	5	49.4	162.0
8.0SMDJ110CA	8.0SMDJ110A	8BHE	8PHE	110.0	122.00	135.00	1	5	45.2	177.0

I-V Curve Characteristics



Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @V_{RWM}
V_{BR}	Breakdown Voltage @ I_T(Test Current)

Rating & Characteristic Curves

Figure 1- Peak pulse power derating curve

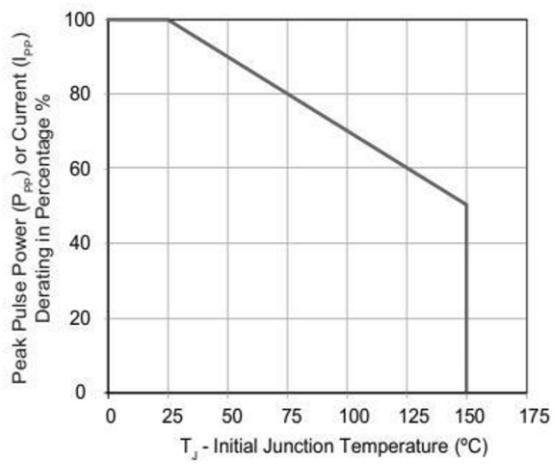


Figure 2- Pulse waveform

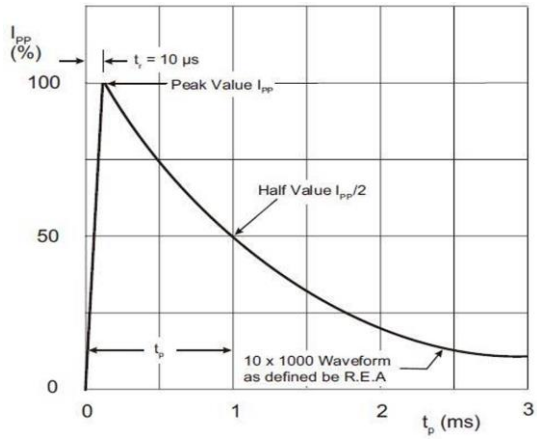


Figure 3- Peak pulse power rating curve

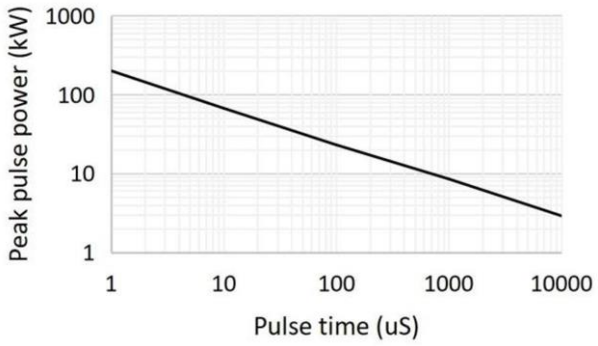
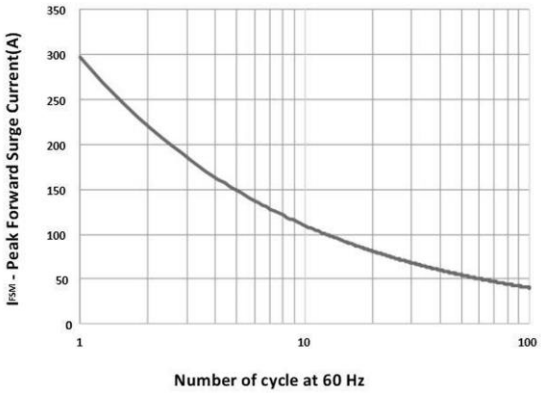
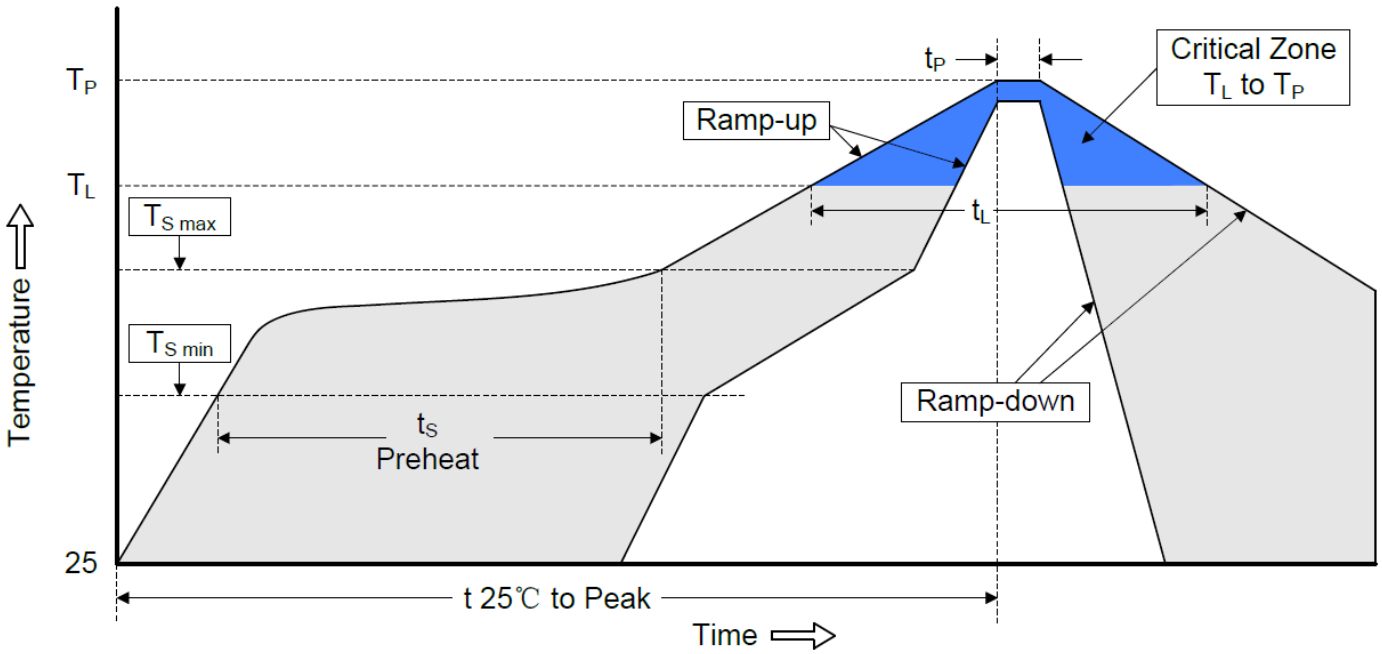


Figure 4- Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

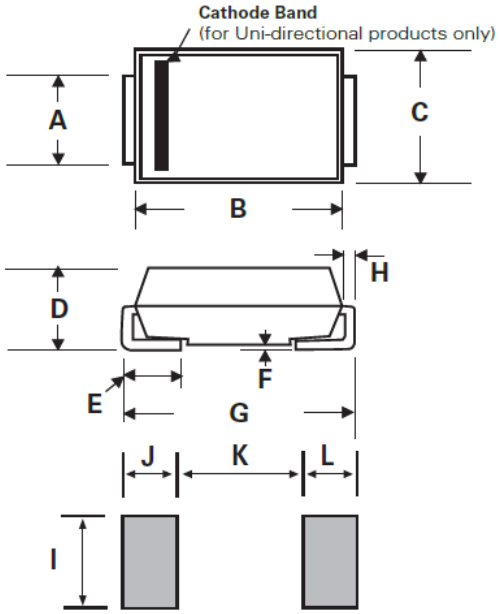


Soldering Parameters



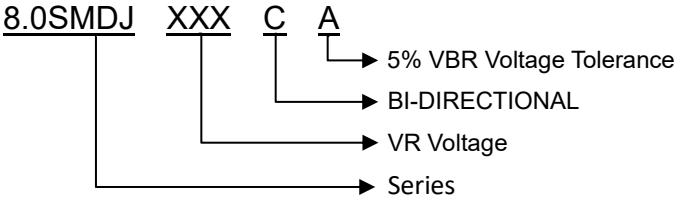
Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max)(t_S)	 150°C 200°C 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	 3°C/second max.
Time maintained above: - Temperature (T_L) - Time (t_L)	 217°C 60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6°C /second max.
Time 25°C to Peak Temperature	8 minutes max.

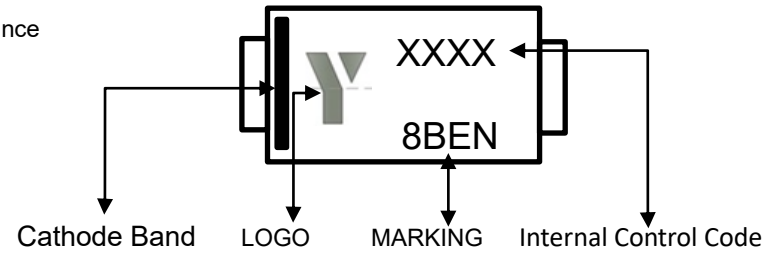
PACKAGE OUTLINE DIMENSIONS in millimeters



Dimensions	Millimeter	
	Min	Max
A	2.900	3.200
B	6.600	7.110
C	5.590	6.220
D	2.060	2.830
E	0.760	1.520
F	-	0.203
G	7.750	8.130
H	0.152	0.305
I	3.300	-
J	2.400	-
K	-	4.200
L	2.400	-

Part Number Code & Marking Code





(for Uni-directional products only)

Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.