5.0SMDJ Series

General Information

The 5.0SMDJ 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 5.0SMDJ 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.

Molded plastic
glass passivated junction.

Features

- Case: DO-214AB/SMC
- For surface mounted applications in order to optimize board space.
- Polarity: Color band denoted positive end (cathode) except Bidirectional.
- 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.

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.

Electrical Characteristics (@ T_A = 25°C Unless Otherwise Noted)

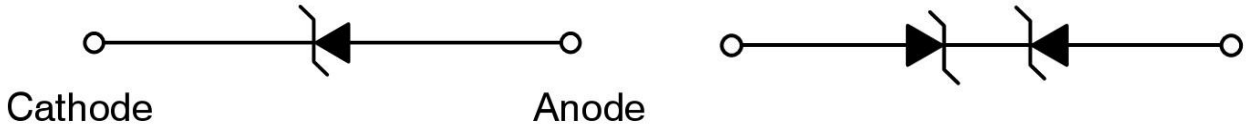
Parameter	Symbol	Value	Unit
Minimum Peak Pulse Power Dissipation (T = 1 ms) (note 2)	P_{PK}	5000	Watts
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	I_{FSM}	300	Amps
Steady State Power Dissipation @ TL = 50 °C	$P_{M(AV)}$	6.5	Watts
Maximum 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

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).
4. Single Phase, Half Wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20 %.

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

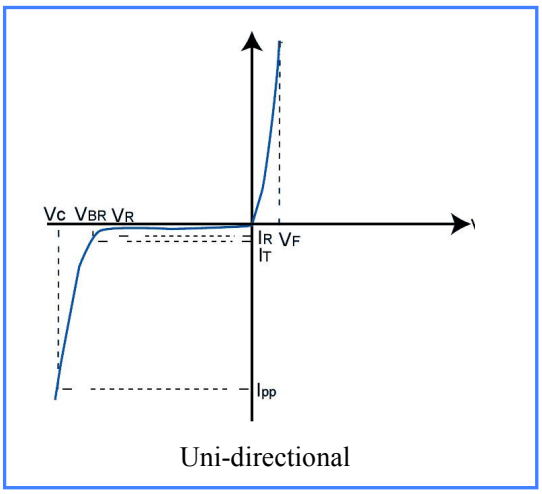
Part Number (Bi)	Part Number (Uni)	MARKING		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Volts)@I_T		Test Current I_T(mA)	Maximum Reverse Leakage I_R @ V_R(μA)	Maximum Peak Pulse Current Ipp(A)	Maximum Clamping Voltage V_C @I_{PP}(V)
		BI	UNI		Min .V	Max.V				
5.0SMDJ11CA	5.0SMDJ11A	5BEN	5PEN	11.0	12.20	13.50	10	800	275.00	18.2
5.0SMDJ12CA	5.0SMDJ12A	5BEP	5PEP	12.0	13.30	14.70	10	800	252.00	19.9
5.0SMDJ13CA	5.0SMDJ13A	5BEQ	5PEQ	13.0	14.40	15.90	10	500	233.00	21.5
5.0SMDJ14CA	5.0SMDJ14A	5BER	5PER	14.0	15.60	17.20	10	200	216.00	23.2
5.0SMDJ15CA	5.0SMDJ15A	5BES	5PES	15.0	16.70	18.50	1	100	205.00	24.4
5.0SMDJ16CA	5.0SMDJ16A	5BET	5PET	16.0	17.80	19.70	1	50	193.00	26.0
5.0SMDJ17CA	5.0SMDJ17A	5BEU	5PEU	17.0	18.90	20.90	1	20	181.00	27.6
5.0SMDJ18CA	5.0SMDJ18A	5BEV	5PEV	18.0	20.00	22.10	1	10	172.00	29.2
5.0SMDJ20CA	5.0SMDJ20A	5BEW	5PEW	20.0	22.20	24.50	1	2	155.00	32.4
5.0SMDJ22CA	5.0SMDJ22A	5BEX	5PEX	22.0	24.40	26.90	1	2	141.00	35.5
5.0SMDJ24CA	5.0SMDJ24A	5BEZ	5PEZ	24.0	26.70	29.50	1	2	129.00	38.9
5.0SMDJ26CA	5.0SMDJ26A	5BFE	5PFE	26.0	28.90	31.90	1	2	119.00	42.1
5.0SMDJ28CA	5.0SMDJ28A	5BFG	5PFG	28.0	31.10	34.40	1	2	110.00	45.4
5.0SMDJ30CA	5.0SMDJ30A	5BFK	5PFK	30.0	33.30	36.80	1	2	103.00	48.4
5.0SMDJ33CA	5.0SMDJ33A	5BFM	5PFM	33.0	36.70	40.60	1	2	93.90	53.3
5.0SMDJ36CA	5.0SMDJ36A	5BFP	5PFP	36.0	40.00	44.20	1	2	86.10	58.1
5.0SMDJ40CA	5.0SMDJ40A	5BFR	5PFR	40.0	44.40	49.10	1	2	77.60	64.5
5.0SMDJ43CA	5.0SMDJ43A	5BFT	5PFT	43.0	47.80	52.80	1	2	72.10	69.4
5.0SMDJ45CA	5.0SMDJ45A	5BFV	5PFV	45.0	50.00	55.30	1	2	68.80	72.7
5.0SMDJ48CA	5.0SMDJ48A	5BFX	5PFX	48.0	53.30	58.90	1	2	64.70	77.4
5.0SMDJ51CA	5.0SMDJ51A	5BFZ	5PFZ	51.0	56.70	62.70	1	2	60.70	82.4
5.0SMDJ54CA	5.0SMDJ54A	5BGE	5PGE	54.0	60.00	66.30	1	2	57.50	87.1
5.0SMDJ58CA	5.0SMDJ58A	5BGG	5PGG	58.0	64.40	71.20	1	2	53.50	93.6
5.0SMDJ60CA	5.0SMDJ60A	5BGK	5PGK	60.0	66.70	73.70	1	2	51.70	96.8
5.0SMDJ64CA	5.0SMDJ64A	5BGM	5PGM	64.0	71.10	78.60	1	2	48.60	103.0
5.0SMDJ70CA	5.0SMDJ70A	5BGP	5PGP	70.0	77.80	86.00	1	2	44.30	113.0
5.0SMDJ75CA	5.0SMDJ75A	5BGR	5PGR	75.0	83.30	92.10	1	2	41.40	121.0
5.0SMDJ78CA	5.0SMDJ78A	5BGT	5PGT	78.0	86.70	95.80	1	2	39.70	126.0
5.0SMDJ85CA	5.0SMDJ85A	5BGV	5PGV	85.0	94.40	104.00	1	2	36.50	137.0
5.0SMDJ90CA	5.0SMDJ90A	5BGX	5PGX	90.0	100.00	111.00	1	2	34.30	146.0
5.0SMDJ100CA	5.0SMDJ100A	5BGZ	5PGZ	100.0	111.00	123.00	1	2	30.90	162.0
5.0SMDJ110CA	5.0SMDJ110A	5BHE	5PHE	110.0	122.00	135.00	1	2	28.30	177.0
5.0SMDJ120CA	5.0SMDJ120A	5BHG	5PHG	120.0	133.00	147.00	1	2	26.00	193.0
5.0SMDJ130CA	5.0SMDJ130A	5BHK	5PHK	130.0	144.00	159.00	1	2	24.00	209.0
5.0SMDJ150CA	5.0SMDJ150A	5BHM	5PHM	150.0	167.00	185.00	1	2	20.60	243.0
5.0SMDJ160CA	5.0SMDJ160A	5BHB	5PHP	160.0	178.00	197.00	1	2	19.30	259.0
5.0SMDJ170CA	5.0SMDJ170A	5BHR	5PHR	170.0	189.00	209.00	1	2	18.20	275.0

Functional Diagram

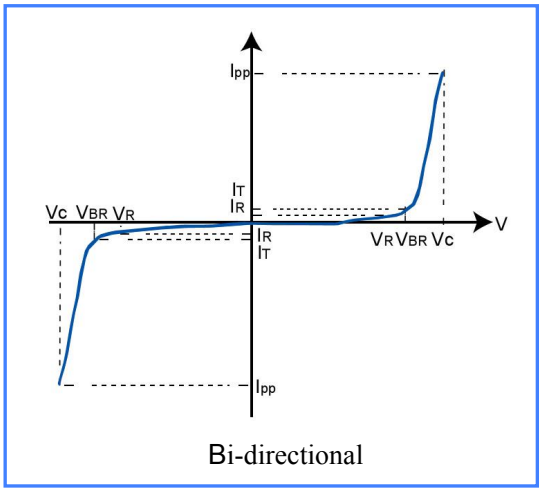


Uni-directional　　Bi-directional

I-V Curve Characteristics



Uni-directional



Bi-directional

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
I_T	Test Current

Rating & Characteristic Curves

Figure 1- Pulse Derating Curve

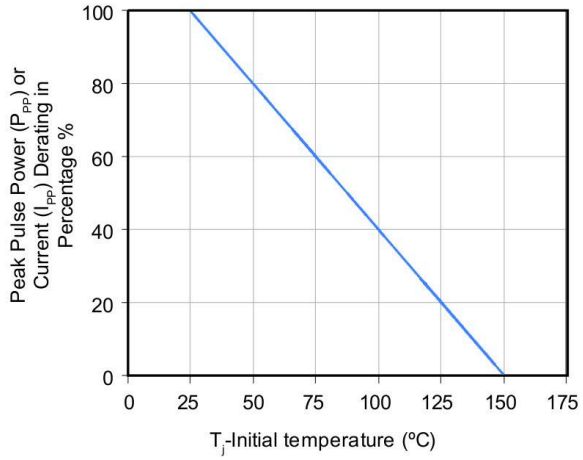


Figure 2- Maximum Non-Repetitive Surge Current

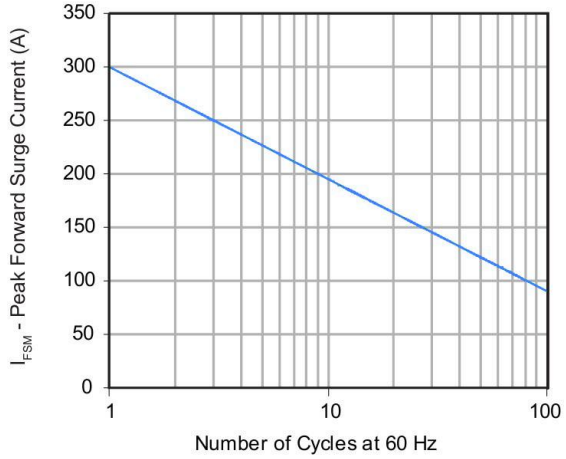


Figure 3- Typical Junction Capacitance

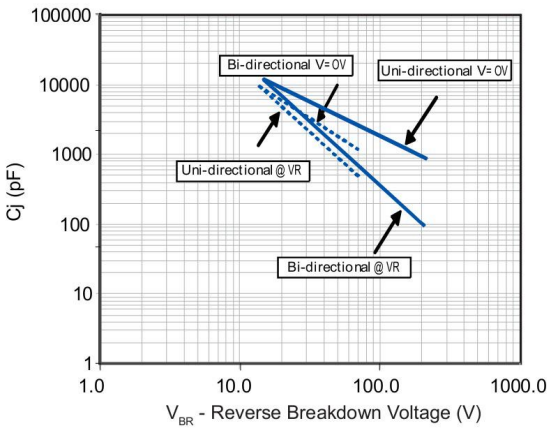


Figure 4- Pulse Waveform

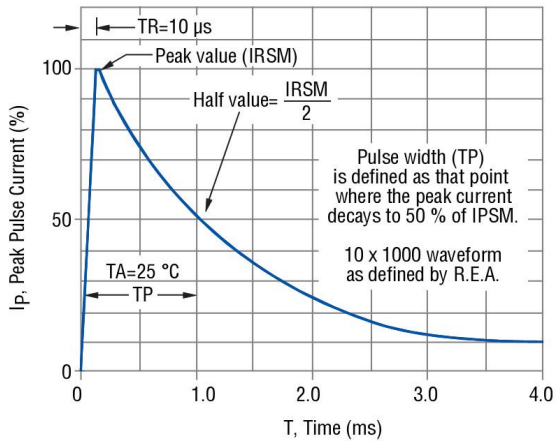


Figure 5- Steady State Power Derating Curve

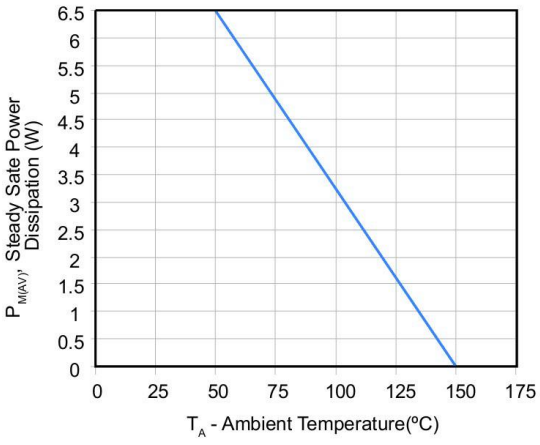
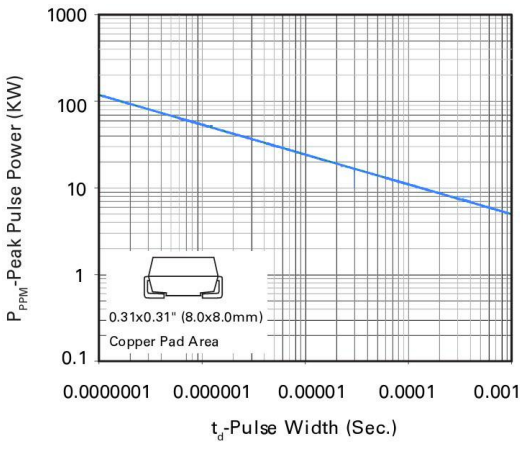
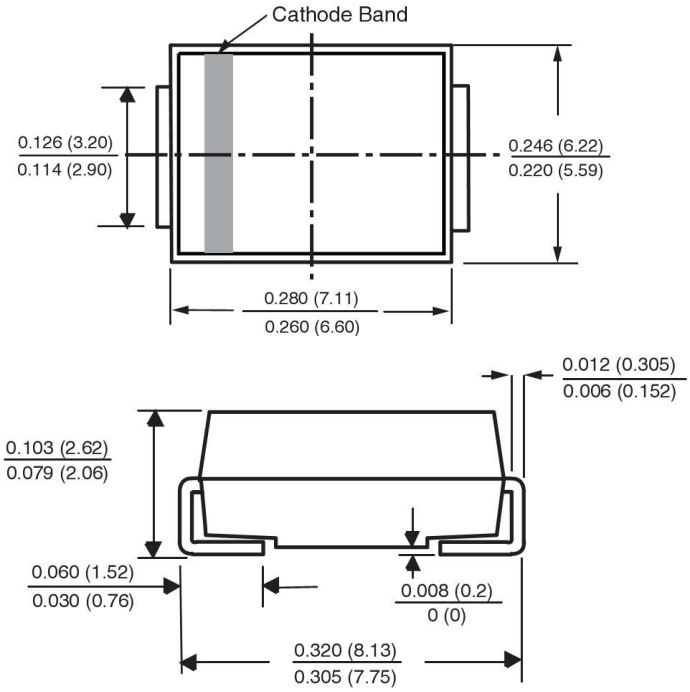


Figure 6- Pulse Rating Curve

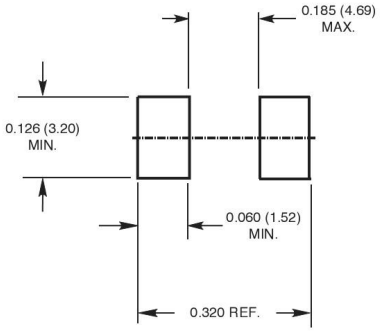


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AB(SMC)



Mounting Pad Layout



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.

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