

## 6.6SMDJ-H Series

### Description

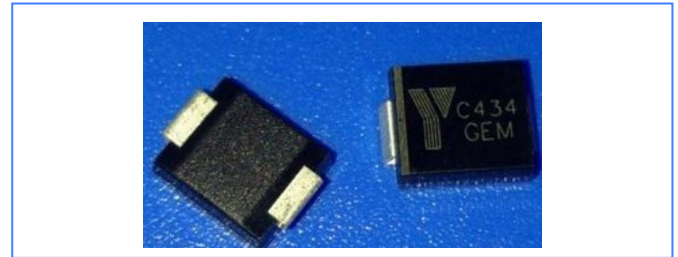
The 6.6SMDJ-H series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

### Features

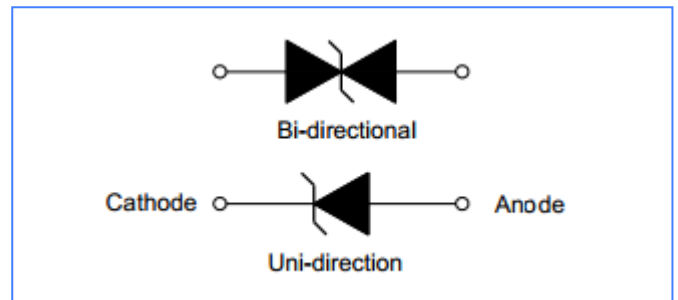
- Glass passivated chip
- 6600 W peak pulse power capability with a 10/1000  $\mu$ s waveform, repetitive rate (duty cycle):0.01 %
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- High reliability application and automotive grade AEC Q101 qualified
- Meet ISO 7637-2 load dump test

### Mechanical Data

- Case: Molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any



### Functional Diagram



### Applications

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, and telecommunication

### Maximum Ratings (TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 $\mu$ s waveform <sup>1</sup>	P <sub>PK</sub>	6600	Watts
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)	I <sub>FSM</sub>	300	Amps
Steady State Power Dissipation @ TL = 75 °C	P <sub>D</sub>	6.5	Watts
Maximum Instantaneous Forward Voltage @ I <sub>PP</sub> = 35 A (For Unidirectional Units Only) <sup>2</sup>	V <sub>F</sub>	3.5	Volts
Operating Temperature Range	T <sub>J</sub>	-55 to +150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C

Note:

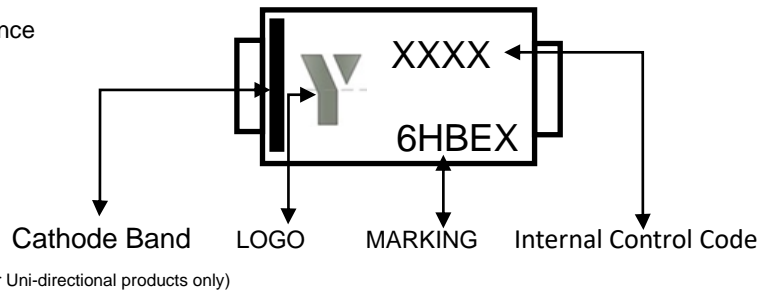
1. Non-repetitive current pulse per Fig.5 and derated above TA= 25 °C per Fig.1
2. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

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

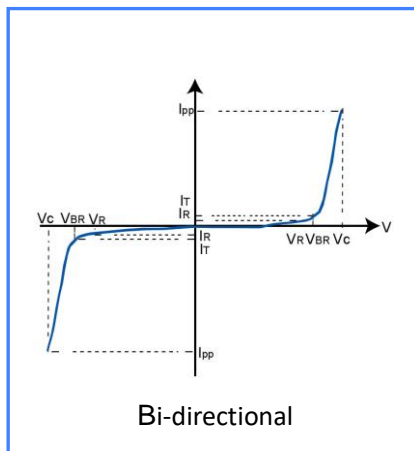
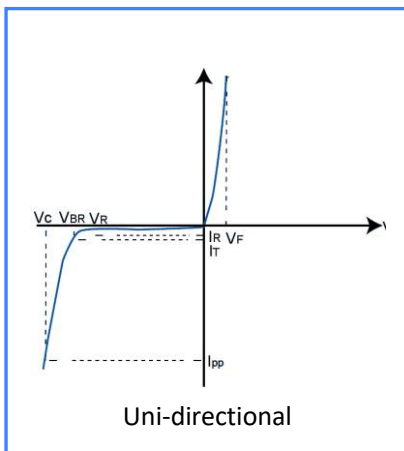
Part Number (Bi)	Part Number (Uni)	Marking		Reverse Stand off Voltage V <sub>R</sub> (Volts)	Breakdown Voltage V <sub>BR</sub> (Volts)@I <sub>T</sub>		Test Current I <sub>T</sub> (mA)	Maximum Reverse Leakage I <sub>R</sub> @ V <sub>R</sub> (μA)	Maximum Peak Pulse Current I <sub>pp</sub> (A)	Maximum Clamping Voltage V <sub>C</sub> @ I <sub>pp</sub> (V)
		Bi	Uni		Min .V	Max .V				
6.6SMDJ18CA-H	6.6SMDJ18A-H	6HBEV	6HPEV	18	20.0	22.1	1	2	226.0	29.2
6.6SMDJ20CA-H	6.6SMDJ20A-H	6HBEW	6HPEW	20	22.2	24.5	1	2	203.7	32.4
6.6SMDJ22CA-H	6.6SMDJ22A-H	6HBEX	6HPEX	22	24.4	26.9	1	2	185.9	35.5
6.6SMDJ24CA-H	6.6SMDJ24A-H	6HBEZ	6HPEZ	24	26.7	29.5	1	2	169.7	38.9
6.6SMDJ26CA-H	6.6SMDJ26A-H	6HBFE	6HPFE	26	28.9	31.9	1	2	156.8	42.1
6.6SMDJ28CA-H	6.6SMDJ28A-H	6HBFG	6HPFG	28	31.1	34.4	1	2	145.4	45.4
6.6SMDJ30CA-H	6.6SMDJ30A-H	6HBFK	6HPFK	30	33.3	36.8	1	2	136.4	48.4
6.6SMDJ33CA-H	6.6SMDJ33A-H	6HBFM	6HPFM	33	36.7	40.6	1	2	123.8	53.3
6.6SMDJ36CA-H	6.6SMDJ36A-H	6HBFP	6HPFP	36	40.0	44.2	1	2	113.6	58.1
6.6SMDJ40CA-H	6.6SMDJ40A-H	6HBFR	6HPFR	40	44.4	49.1	1	2	102.3	64.5
6.6SMDJ43CA-H	6.6SMDJ43A-H	6HBFT	6HPFT	43	47.8	52.8	1	2	95.1	69.4

**Part Number Code & Marking Code**

**6.6SMDJ** → Series  
**XXX** → VR Voltage  
**C** → BI-DIRECTIONAL  
**A** → 5% VBR Voltage Tolerance  
**-H** → High reliability



**I-V Curve Characteristics**



Symbol	Parameter
I <sub>PP</sub>	Maximum Reverse Peak Pulse Current
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
V <sub>RWM</sub>	Working Peak Reverse Voltage
I <sub>R</sub>	Maximum Reverse Leakage Current @ V <sub>RWM</sub>
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub> (Test Current)

Rating & Characteristic Curves

Figure 1- Pulse Derating Curve

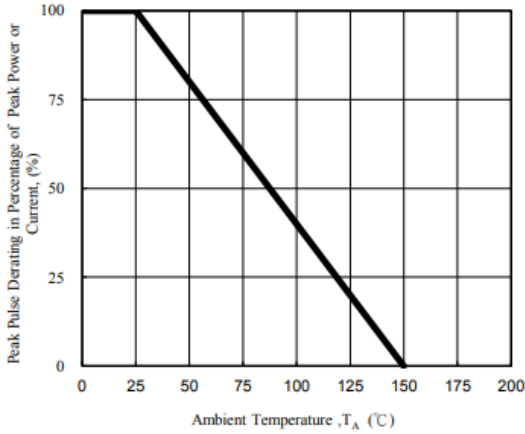


Figure 2- Maximum Non-Repetitive Surge Current

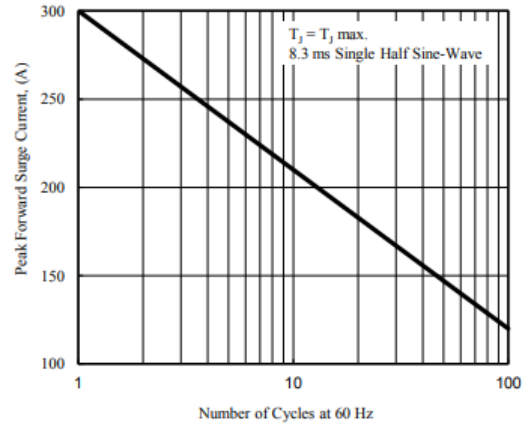


Figure 3- Steady State Power Derating Curve

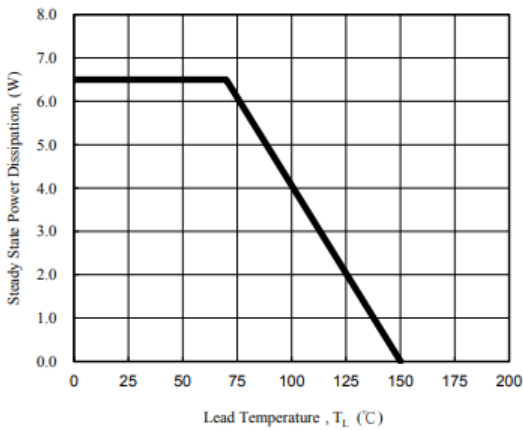


Figure 4- Peak Pulse Power Rating Curve

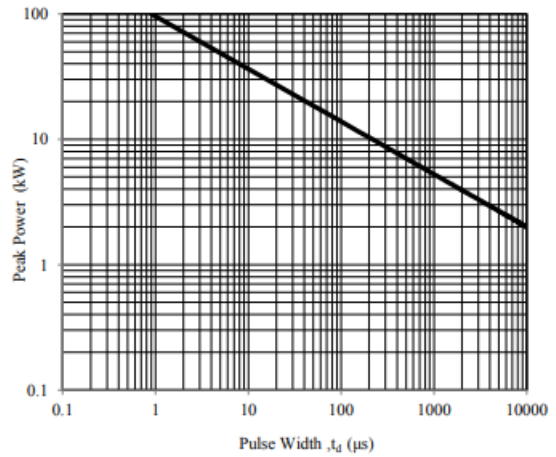


Figure 5- Pulse Waveform

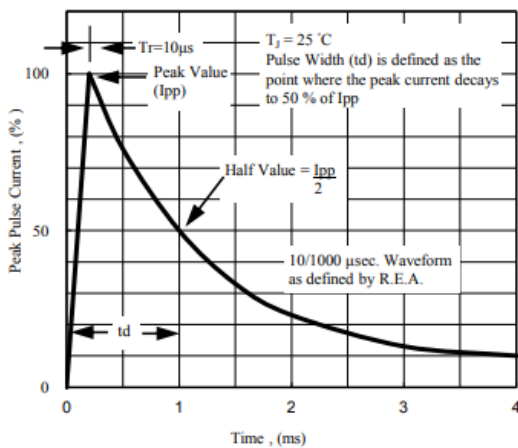
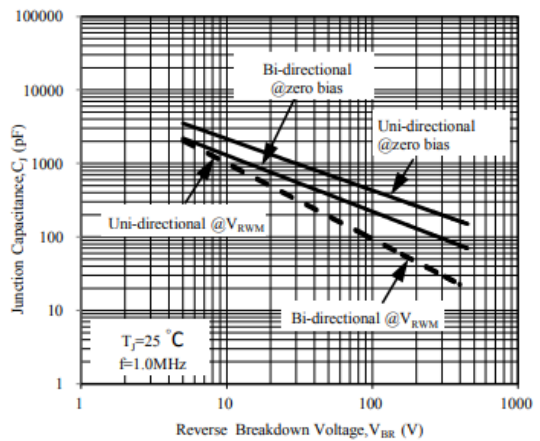
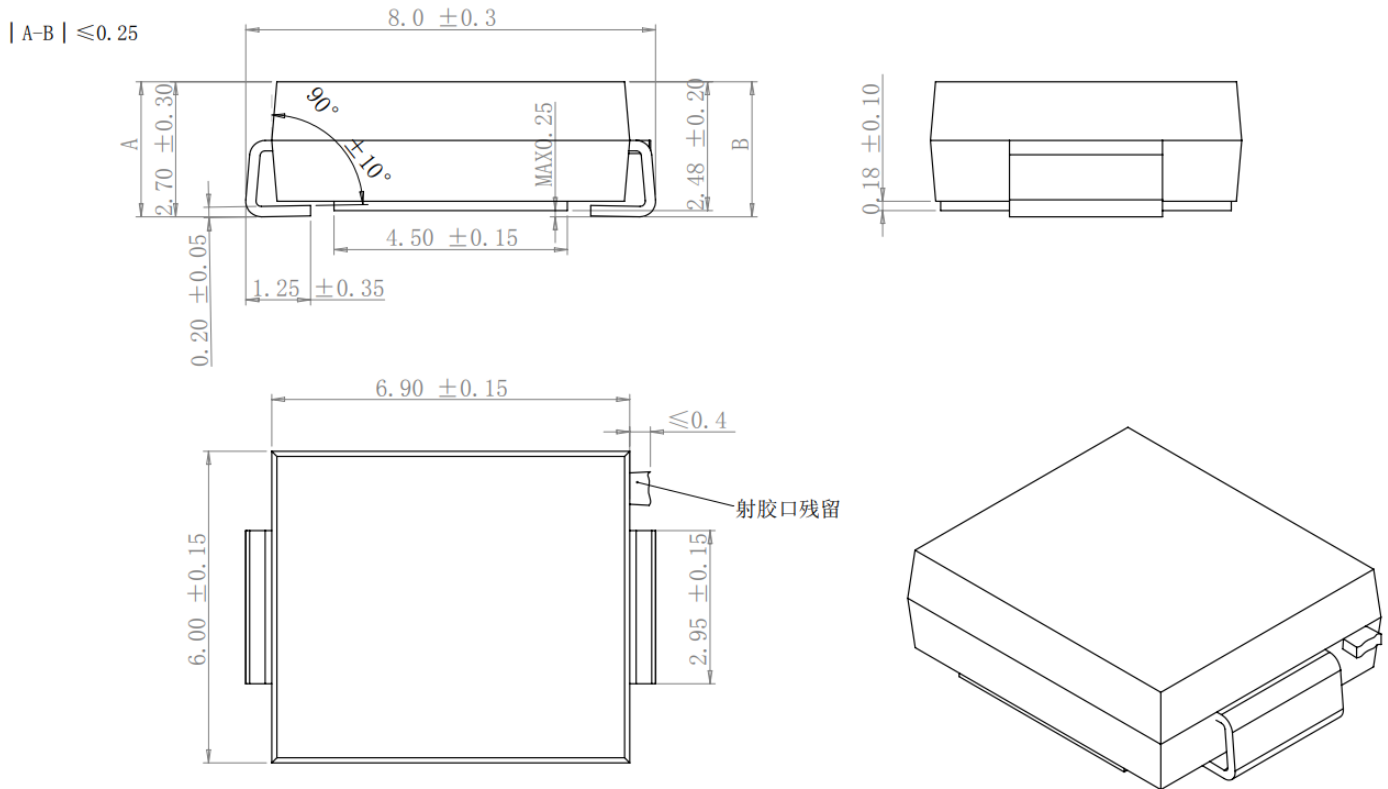


Figure 6- Typical Junction Capacitance



**PACKAGE OUTLINE DIMENSIONS (millimeters)**



DO-214AB(smc)

**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.