

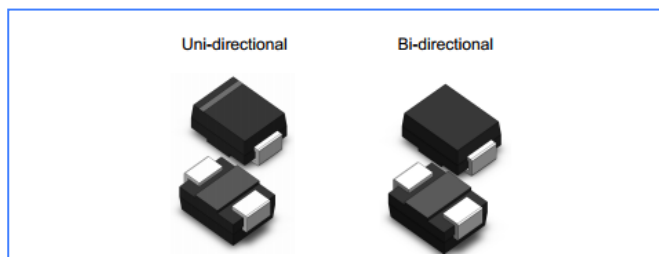
TP6SMB600CA

Description

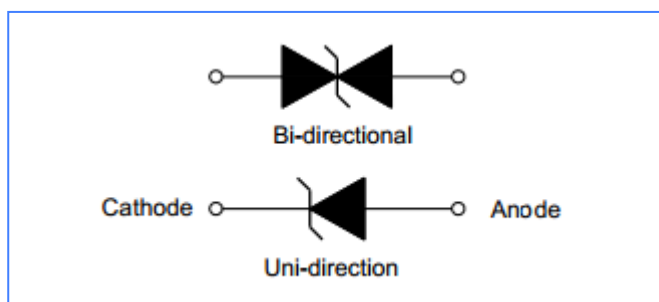
TP6SMB600CA is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Available in uni-directional and bi-directional
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Case: DO-214AA (SMBJ)
- 600 W peak pulse power capability with a10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- Polarity: For uni-directional types the color band denotes cathode end, no marking on bi-directional types



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
Minimum Peak Pulse Power Dissipation (T = 1 ms)	P _{PK}	600	Watts
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)	I _{FSM}	100	Amps
Steady State Power Dissipation @ TL = 75 °C	P _D	5	Watts
Maximum Instantaneous Forward Voltage @ I _{PP} = 35 A (For Unidirectional Units Only)	V _F	5.0	Volts
Operating Temperature Range	T _J	-55 to +150	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

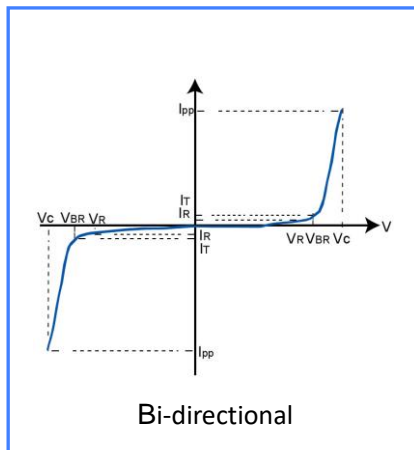
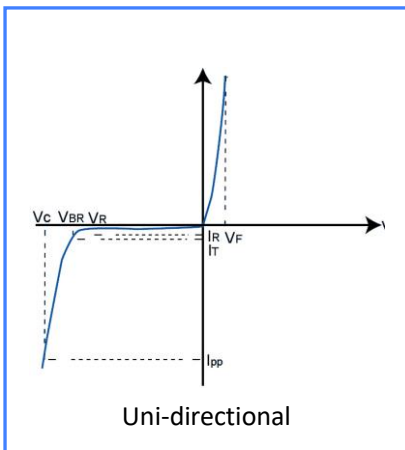
Note:

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_R (Volts)	Breakdown Voltage V_{BR} (Volts)@ I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R @ V_R (μ A)	Maximum Peak Pulse Current I_{pp} (A)	Maximum Clamping Voltage V_C @ I_{pp} (V)
		BI	UNI		Min .V	Max .V				
TP6SMB600CA	TP6SMB600A	600C	600A	512	570	630	1	1	1.5	828

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

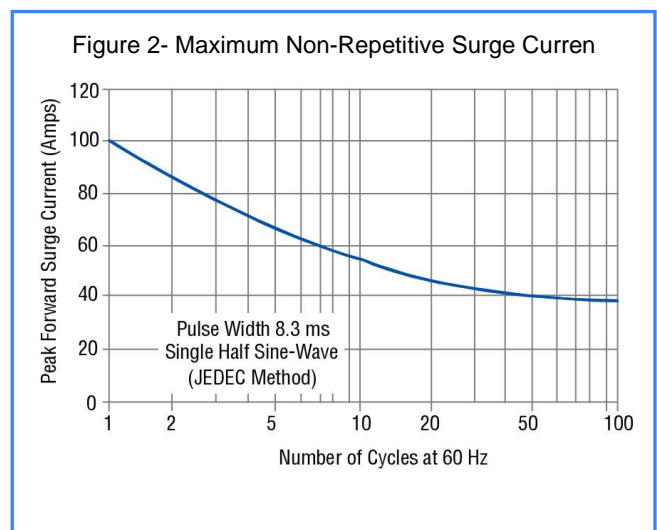
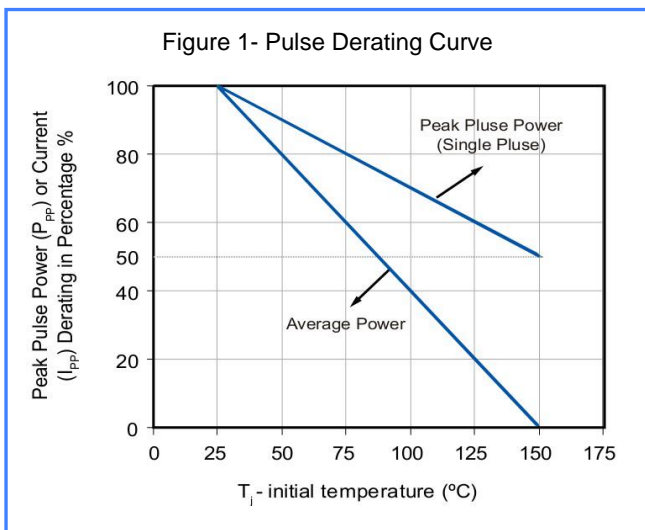


Figure 3- Steady State Power Derating Curve

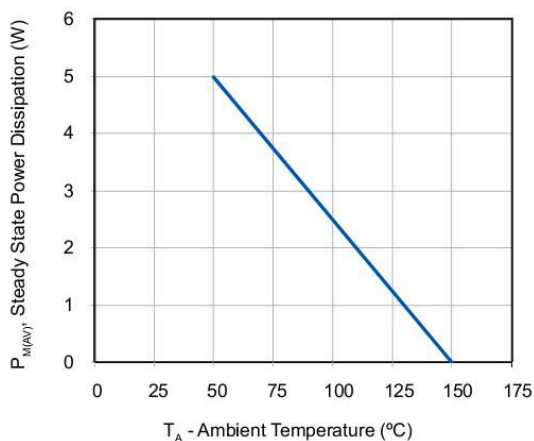
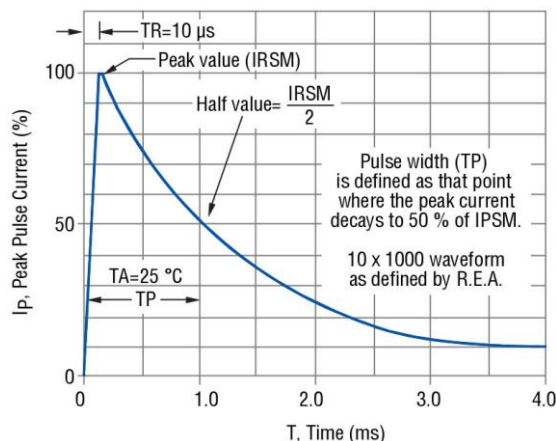
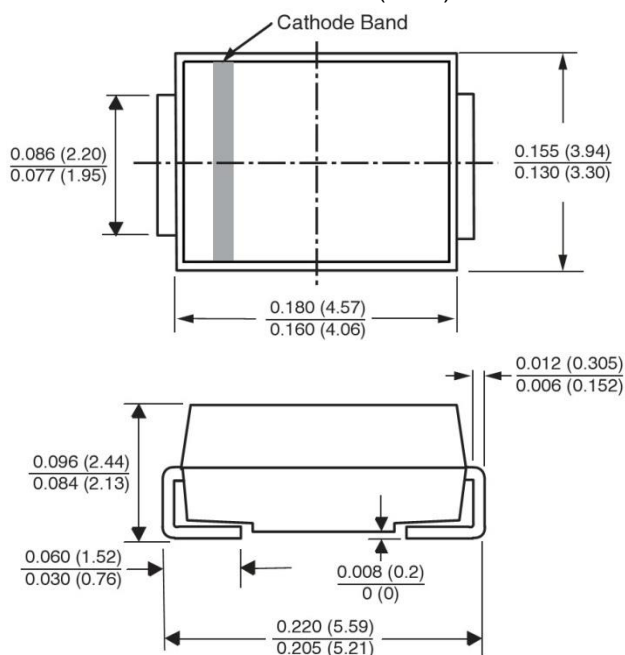


Figure 4- Pulse Waveform

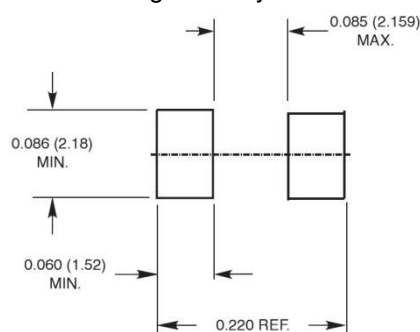


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AA (SMB)



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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[P6KE13CA](#) [P6KE43CA](#) [P6KE6.8CA](#) [P6KE8.2](#) [P6SMBJ20CA](#) [JANTX1N6072A](#) [SR2835ESKG](#) [SA90CA](#)