

## P6SMA480CA ~ P6SMA600CA

## SURFACE MOUNT BI-DIRECTIONAL TRANSIENT VOLTAGE SUPPRESSOR

**V<sub>BR</sub> : 480 ~ 600 Volts**

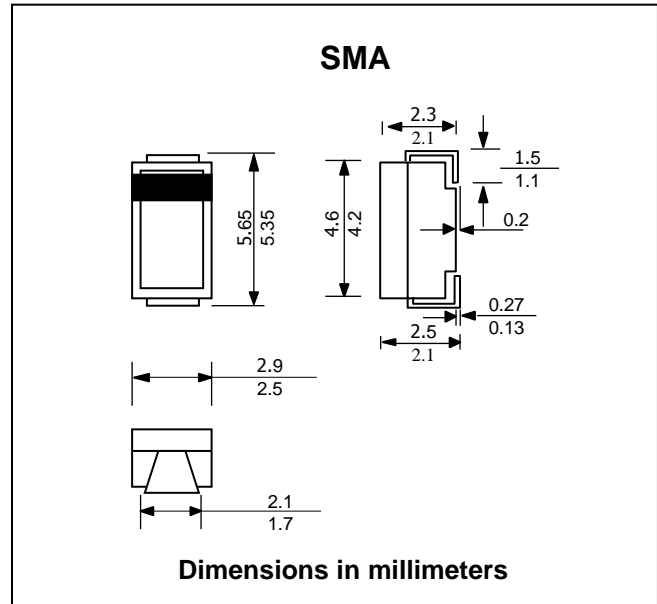
**P<sub>PK</sub> : 600 Watts**

### FEATURES :

- \* Bidirectional Transient voltage suppressor
- \* 600W surge capability at 1ms
- \* Excellent clamping capability
- \* Low zener impedance
- \* Fast response time : typically less than 1.0 ps from 0 volt to V<sub>BR(min.)</sub>
- \* Pb / RoHS Free

### MECHANICAL DATA :

- \* Case : SMA Molded plastic
- \* Epoxy : UL94V-O rate flame retardant
- \* Lead : Lead Formed for Surface Mount
- \* Mounting position : Any
- \* Weight : 0.060 gram (Approximately)



### DEVICES FOR UNIPOLAR APPLICATIONS

For uni-directional without "C"  
Electrical characteristics apply in both directions

### MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Unit
Peak Power Dissipation at Ta = 25 °C, Tp=1ms (Note1)	P <sub>PK</sub>	Minimum 600	Watts
Steady State Power Dissipation at T <sub>L</sub> = 75 °C	P <sub>D</sub>	5.0	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	I <sub>FSM</sub>	50	Amps.
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	- 55 to + 150	°C

#### Notes:

- (1) Non-repetitive Current pulse, per Fig. 5 and derated above Ta = 25 °C per Fig. 1
- (2) Mounted on copper Lead area at 5.0 mm<sup>2</sup> ( 0.013 mm thick ).
- (3) 8.3 ms single half sine-wave, duty cycle = 4 pulses per minutes maximum.

**ELECTRICAL CHARACTERISTICS** (Rating at 25 °C ambient temperature unless otherwise specified)

Type No.	Breakdown Voltage @ $I_t$ ( Note 1 )		Working Peak Reverse Voltage	Maximum Reverse Leakage @ $V_{RWM}$	Maximum Reverse Current	Maximum Clamping Voltage @ $I_{RSM}$	Maximum Temperature Co-efficient of $V_{BR}$	
	$V_{BR}$ (V)		$I_t$	$V_{RWM}$	$I_R$	$I_{RSM}$		$V_{RSM}$
	Min.	Max.	(mA)	(V)	( $\mu$ A)	(A)	(V)	(% / °C)
<b>P6SMA480CA</b>	456	504	1.0	408	5.0	0.91	658	0.110
<b>P6SMA510CA</b>	485	535	1.0	434	5.0	0.86	698	0.110
<b>P6SMA540CA</b>	513	567	1.0	459	5.0	0.81	740	0.110
<b>P6SMA600CA</b>	570	630	1.0	510	5.0	0.76	789	0.110

**Notes:**

- (1)  $V_{BR}$  measured after  $I_t$  applied for 300  $\mu$ s.,  $I_t$  = square wave pulse or equivalent.
- (2) "P6SMA" will be omitted in marking on the diode.

RATING AND CHARACTERISTIC CURVES ( P6SMA480CA ~ P6SMA600CA )

FIG.1 - PULSE DERATING CURVE

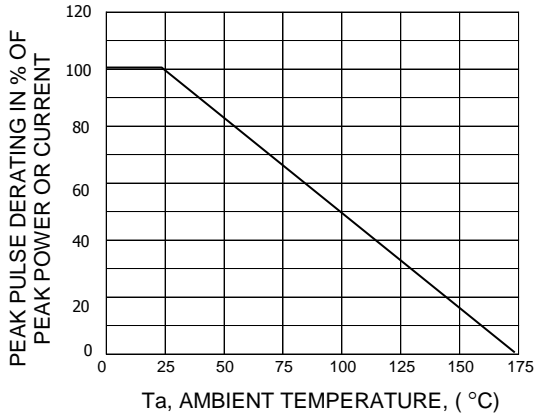


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

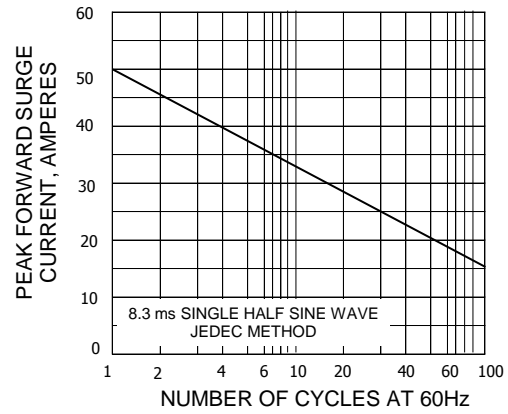


FIG.3 - STEADY STATE POWER DERATING

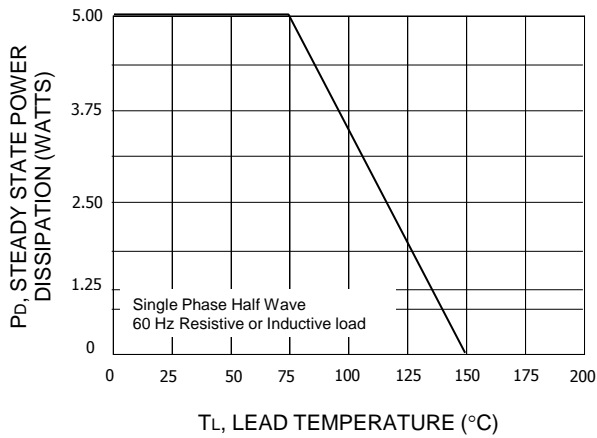


FIG.4 - PULSE RATING CURVE

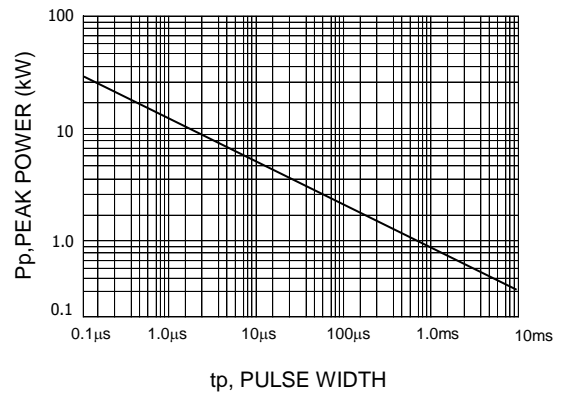


FIG.5 - PULSE WAVEFORM

