



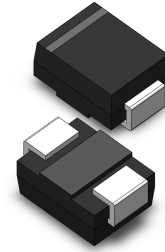
# P6SMB440A /CA - P6SMB550A/CA

## SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR DIODE

**VOLTAGE RANGE: 440 - 550 V**  
**POWER: 600Watts**

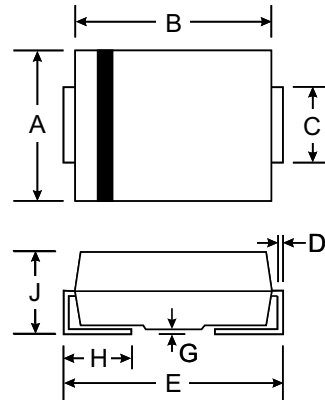
### Features

- Peak power dissipation 600W @10 x 1000 us Pulse
- Low profile package.
- Excellent clamping capability.
- Glass passivated junction.
- Fast response time: typically less than 1ps from 0 Volts to BV min
- Typical  $I_R$  less than 1uA when  $V_{BR}$  min above 12V.
- IEC 61000-4-2 ESD 30KV(Air), 30KV(Contact)
- ESD protection of data lines in accordance with IEC 61000-4-2
- EFT protection of data lines in accordance with IEC 61000-4-4
- Halogen free and RoHS compliant



### Mechanical Data

- Case: SMB/DO-214AA, Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number
- Weight: 0.093 grams (approx.)



SMB(DO-214AA)		
Dim	Min	Max
A	3.30	3.94
B	4.06	4.70
C	1.91	2.21
D	0.15	0.31
E	5.00	5.59
G	0.10	0.20
H	0.76	1.52
J	2.00	2.62
All Dimensions in mm		

### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation (Non repetitive current pulse derated above $T_A = 25^\circ\text{C}$ ) (Note 1)	$P_{PK}$	600	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (Notes 1, 2, & 3)	$I_{FSM}$	100	A
Instantaneous Forward Voltage @ $I_{PP} = 35A$ $V_{BR} < 100V$ (Notes 1, 2, & 3) $V_{BR} \geq 100V$	$V_F$	3.5 5.0	V V
Operating and Storage Temperature Range	$T_j, T_{STG}$	-55 to +150	$^\circ\text{C}$

- Notes:
1. Valid provided that terminals are kept at ambient temperature.
  2. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
  3. Unidirectional units only.

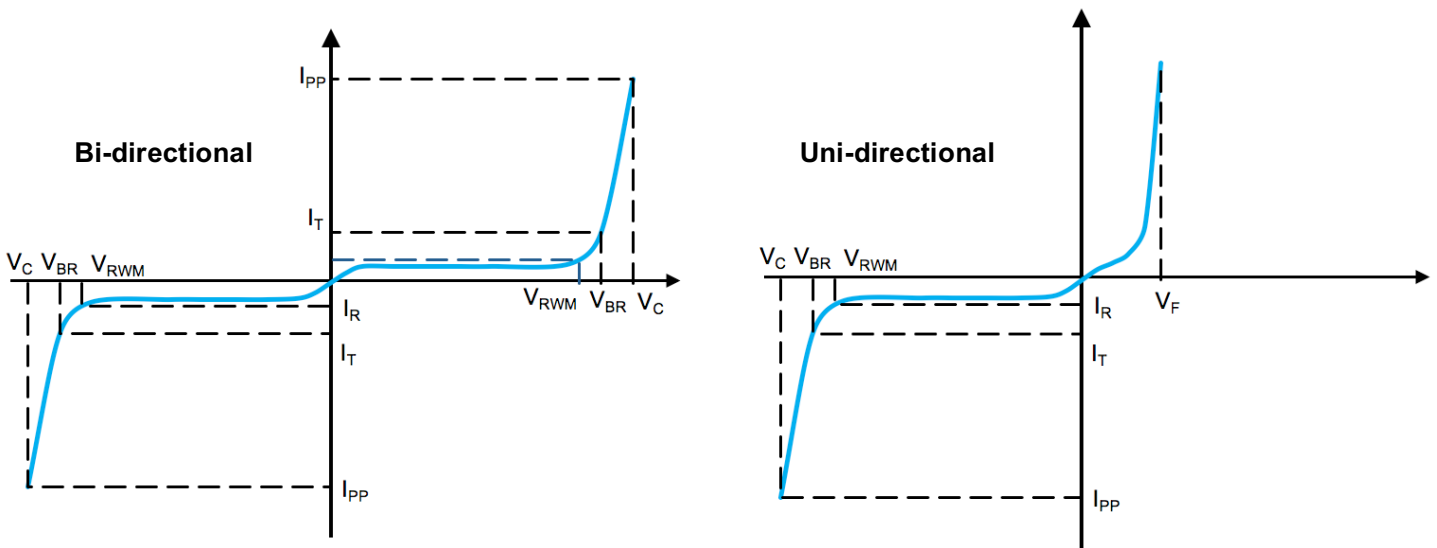


Type Number		Reverse Stand-Off Voltage	Breakdown Voltage Min. @ $I_T$	Breakdown Voltage Max. @ $I_T$	Test Current	Maximum Clamping Voltage @ $I_{PP}$	Peak Pulse Current	Reverse Leakage @ $V_{RWM}$
(Uni)	(Bi)	$V_{RWM}(V)$	$V_{BR MIN}(V)$	$V_{BR MAX}(V)$	$I_T (mA)$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$
P6SMB440A	P6SMB440CA	376.00	418.00	462.00	1	602.0	1.0	1
P6SMB480A	P6SMB480CA	408.00	456.00	504.00	1	658.0	0.9	1
P6SMB510A	P6SMB510CA	434.00	485.00	535.00	1	698.0	0.9	1
P6SMB530A	P6SMB530CA	451.00	503.50	556.50	1	725.0	0.8	1
P6SMB540A	P6SMB540CA	460.00	513.00	567.00	1	740.0	0.8	1
P6SMB550A	P6SMB550CA	468.00	522.50	577.50	1	760.0	0.8	1

※ For Bi-directional type having  $V_{RWM}$  of 10 Volts and less, the  $I_R$  limit is double.

※ For parts without A, the  $V_{BR}$  is  $\pm 10\%$  and  $V_C$  is 5% higher than with A parts.

## I-V Curve Characteristics



$P_{PPM}$  **Peak Pulse Power Dissipation** - Max power dissipation

$V_{RWM}$  **Reverse Stand-off Voltage** - Maximum voltage that can be applied to TVS without operation

$V_{BR}$  **Breakdown Voltage** – Maximum voltage that flows through the TVS at a specified current ( $I_T$ )

$V_C$  **Clamping Voltage** – Peak voltage measured across the TVS at a specified  $I_{PPM}$  (peak impulse current)

$I_R$  **Reverse Leakage Current** – Current measured at  $V_R$

$V_F$  **Forward Voltage Drop for Uni-directional**

# Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)

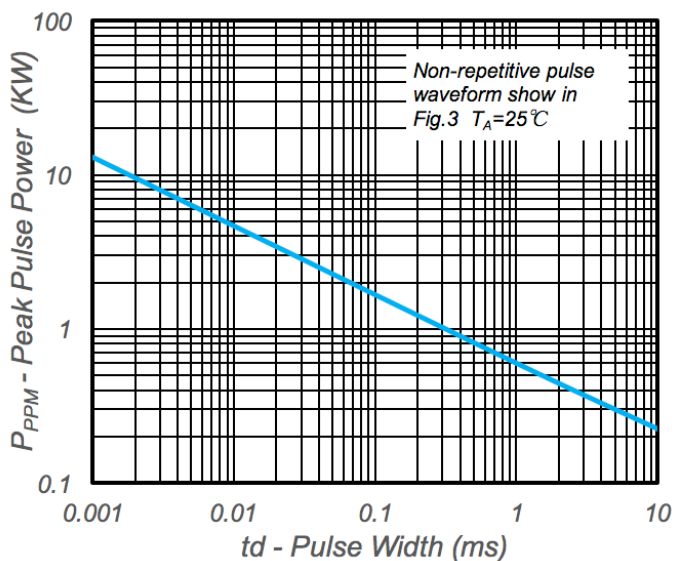


Fig.1 - Peak Pulse Power Rating

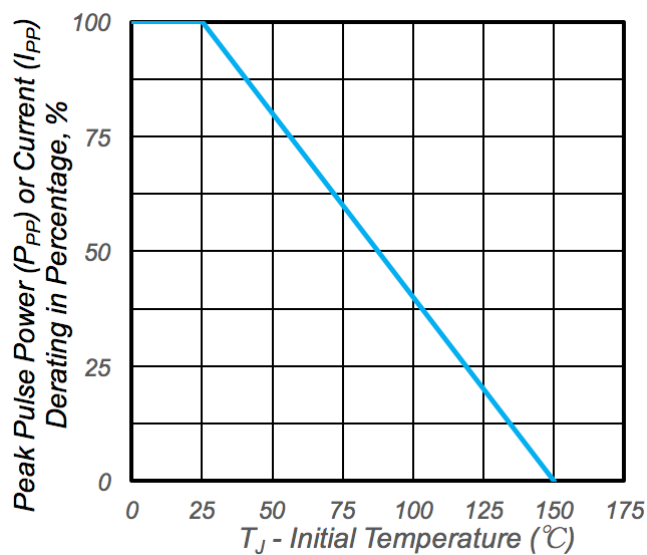


Fig.2 - Pulse Derating Curve

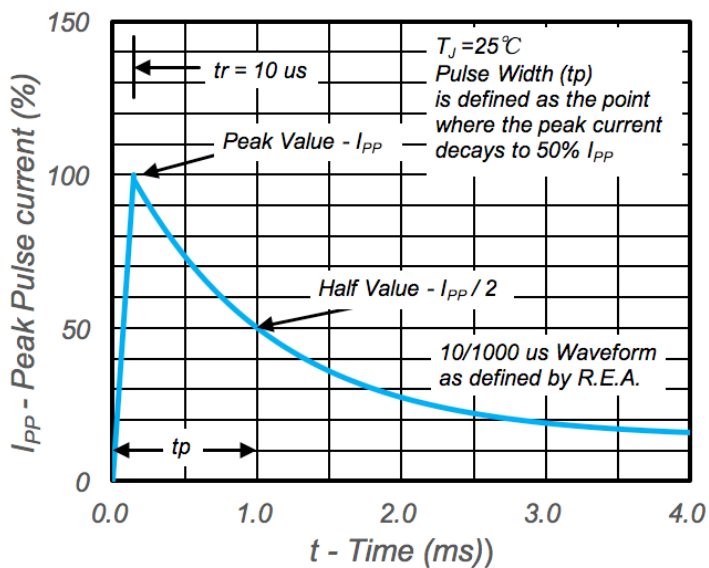


Fig.3 - Pulse Waveform

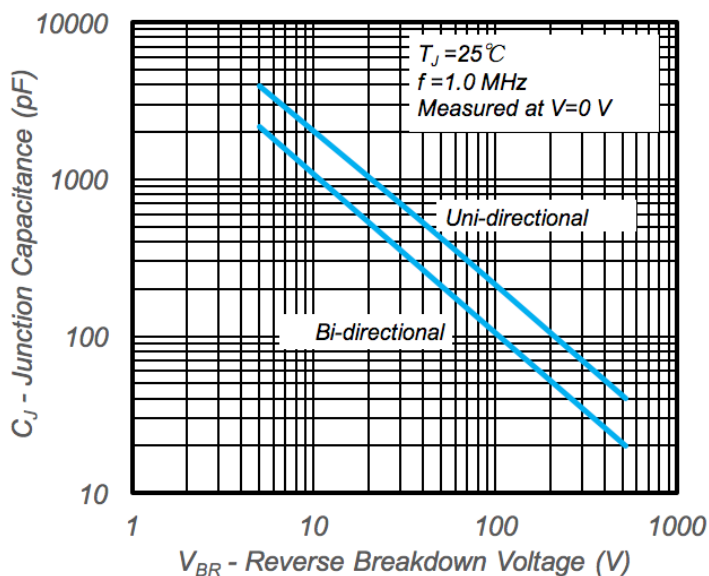


Fig.4 - Typical Junction Capacitance