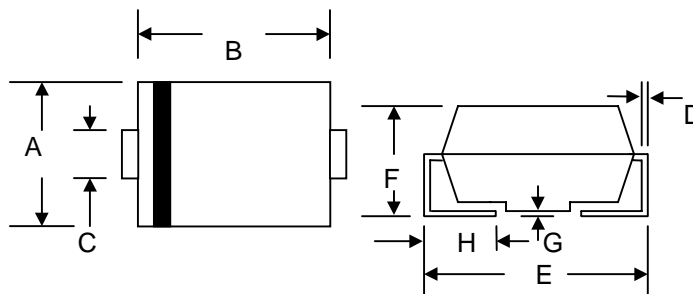


# P4SMAJ180 – P4SMAJ220CA

## 400W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSORS

### Features

- Glass Passivated Die Construction
- 400W Peak Pulse Power Dissipation
- 180V – 220V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O



### Mechanical Data

- Case: JEDEC DO-214AC Low Profile Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking:  
Unidirectional – Device Code and Cathode Band  
Bidirectional – Device Code Only
- Weight: 0.064 grams (approx.)

SMA/DO-214AC		
Dim	Min	Max
A	2.50	2.90
B	4.00	4.60
C	1.40	1.60
D	0.152	0.305
E	4.80	5.28
F	2.00	2.44
G	0.051	0.203
H	0.76	1.52
All Dimensions in mm		

“C” Suffix Designates Bi-directional Devices  
 “A” Suffix Designates 5% Tolerance Devices  
 No Suffix Designates 10% Tolerance Devices

### Maximum Ratings and Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation at T <sub>A</sub> = 25°C (Note 1, 2, 5) Figure 3	PPM	400 Minimum	W
Peak Forward Surge Current (Note 3)	IFSM	40	A
Peak Pulse Current on 10/1000μS Waveform (Note 1) Figure 4	IPPM	See Table 1	A
Steady State Power Dissipation (Note 4)	PM(AV)	1.0	W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

- Note: 1. Non-repetitive current pulse, per Figure 4 and derated above T<sub>A</sub> = 25°C per Figure 1.  
 2. Mounted on 5.0mm<sup>2</sup> copper pads to each terminal .  
 3. 8.3ms single half sine-wave duty cycle = 4 pulses per minutes maximum.  
 4. Lead temperature at 75°C = T<sub>L</sub>.  
 5. Peak pulse power waveform is 10/1000μS.

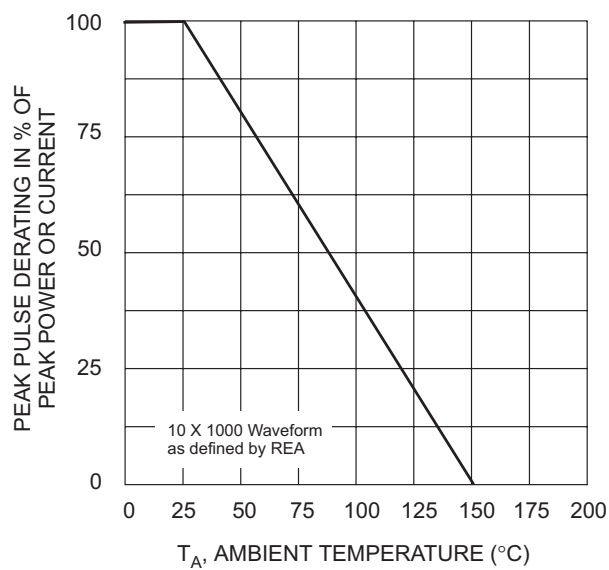


Fig. 1 Pulse Derating Curve

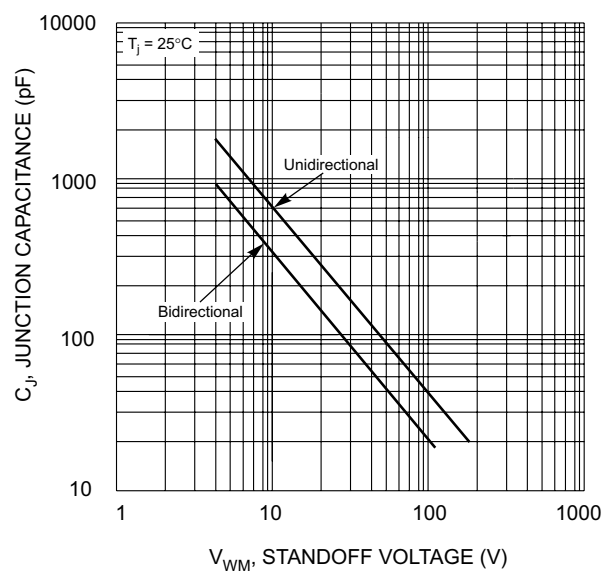


Fig. 2 Typical Junction Capacitance

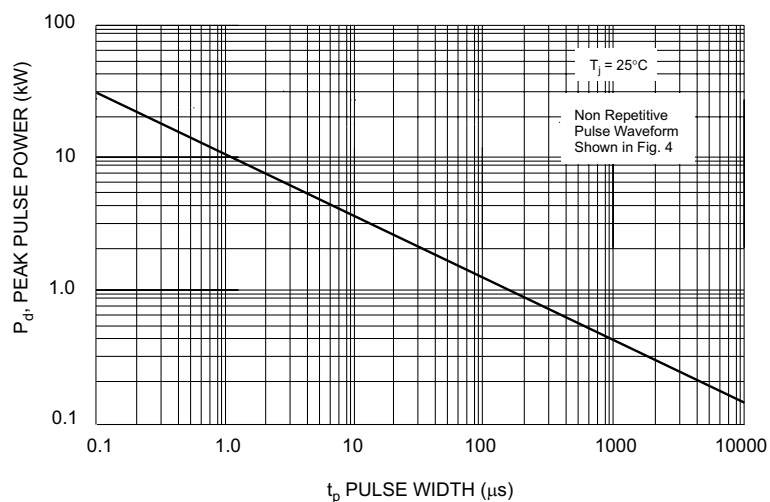


Fig. 3 Pulse Rating Curve

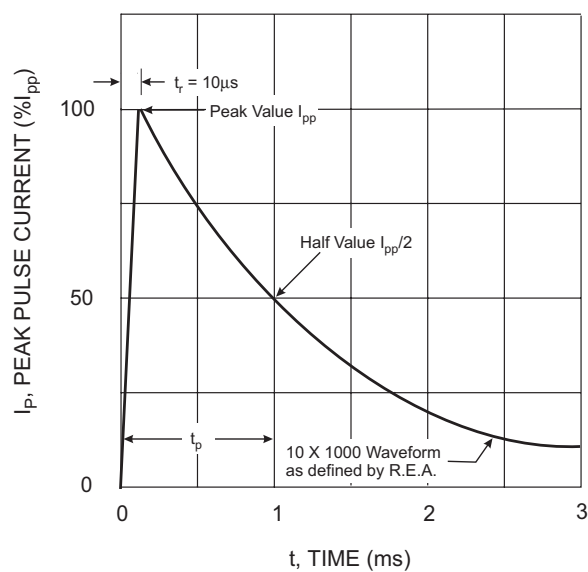


Fig. 4 Pulse Waveform

## UNI-DIRECTIONAL 400 WATT SURFACE MOUNT TVS

UNI-DIRECTIONAL PART NO.	DEVICE MARKING CODE	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @VRWM IR (uA)
P4SMAJ180	SS	180.00	198.00	253.80	1	322.0	1.2	5
P4SMAJ180A	ST	180.00	198.00	230.40	1	292.0	1.3	5
P4SMAJ190	SU	190.00	209.00	267.90	1	340.0	1.2	5
P4SMAJ190A	SV	190.00	209.00	243.20	1	308.0	1.3	5
P4SMAJ200	SW	200.00	220.00	282.00	1	358.0	1.1	5
P4SMAJ200A	SX	200.00	220.00	256.00	1	324.0	1.2	5
P4SMAJ210	SY	210.00	231.00	296.10	1	376.0	1.1	5
P4SMAJ210A	SZ	210.00	231.00	268.80	1	340.0	1.2	5
P4SMAJ220	GD	220.00	242.00	310.20	1	394.0	1.0	5
P4SMAJ220A	GE	220.00	242.00	281.60	1	356.0	1.1	5

## BI-DIRECTIONAL 400 WATT SURFACE MOUNT TVS

BI-DIRECTIONAL PART NO.	DEVICE MARKING CODE	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @VRWM IR (uA)
P4SMAJ180C	YS	180.00	198.00	253.80	1	322.0	1.2	5
P4SMAJ180CA	YT	180.00	198.00	230.40	1	292.0	1.3	5
P4SMAJ190C	YU	190.00	209.00	267.90	1	340.0	1.2	5
P4SMAJ190CA	YV	190.00	209.00	243.20	1	308.0	1.3	5
P4SMAJ200C	YW	200.00	220.00	282.00	1	358.0	1.1	5
P4SMAJ200CA	YX	200.00	220.00	256.00	1	324.0	1.2	5
P4SMAJ210C	YY	210.00	231.00	296.10	1	376.0	1.1	5
P4SMAJ210CA	YZ	210.00	231.00	268.80	1	340.0	1.2	5
P4SMAJ220C	ZD	220.00	242.00	310.20	1	394.0	1.0	5
P4SMAJ220CA	ZE	220.00	242.00	281.60	1	356.0	1.1	5

## ORDERING INFORMATION

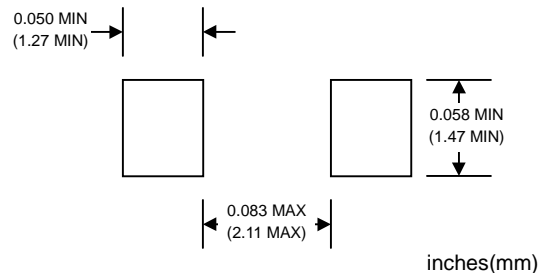
Product No.♦	Package Type	Shipping Quantity
P4SMAJxx-T1	SMA	1800/Tape & Reel
<b>P4SMAJxx-T3</b>	SMA	7500/Tape & Reel
P4SMAJxxA-T1	SMA	1800/Tape & Reel
<b>P4SMAJxxA-T3</b>	SMA	7500/Tape & Reel
P4SMAJxxC-T1	SMA	1800/Tape & Reel
<b>P4SMAJxxC-T3</b>	SMA	7500/Tape & Reel
P4SMAJxxCA-T1	SMA	1800/Tape & Reel
<b>P4SMAJxxCA-T3</b>	SMA	7500/Tape & Reel

Products listed in **bold** are WTE **Preferred** devices.

♦T1 suffix refers to a 7" reel. T3 suffix refers to a 13" reel.

Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.

## RECOMMENDED FOOTPRINT



Won-Top Electronics Co., Ltd (WTE) has checked all information carefully and believes it to be correct and accurate. However, WTE cannot assume any responsibility for inaccuracies. Furthermore, this information does not give the purchaser of semiconductor devices any license under patent rights to manufacturer. WTE reserves the right to change any or all information herein without further notice.

**WARNING:** DO NOT USE IN LIFE SUPPORT EQUIPMENT. WTE power semiconductor products are not authorized for use as critical components in life support devices or systems without the express written approval.

### Won-Top Electronics Co., Ltd.

No. 44 Yu Kang North 3rd Road, Chine Chen Dist., Kaohsiung, Taiwan

**Phone:** 886-7-822-5408 or 886-7-822-5410

**Fax:** 886-7-822-5417

**Email:** sales@wontop.com

**Internet:** <http://www.wontop.com>

*We power your everyday.*