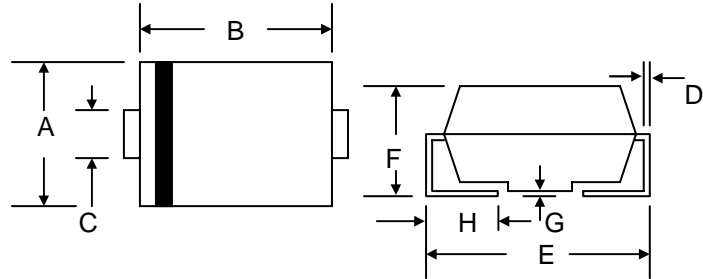


400W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Features

- Glass Passivated Die Construction
- 400W Peak Pulse Power Dissipation
- 180V – 440V 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: SMA/DO-214AC, Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band Except Bi-Directional
- Marking: Device Code
- Weight: 0.064 grams (approx.)
- **Lead Free: For RoHS / Lead Free Version, Add “-LF” Suffix to Part Number, See Page 5**

| SMA/DO-214AC | | |
|----------------------|-------|-------|
| Dim | Min | Max |
| A | 2.50 | 2.90 |
| B | 4.00 | 4.60 |
| C | 1.20 | 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 @ $T_A=25^\circ\text{C}$ unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|--|-----------------|-------------|--------------------|
| Peak Pulse Power Dissipation at $T_A = 25^\circ\text{C}$ (Note 1, 2, 5) Figure 3 | P PPM | 400 Minimum | W |
| Peak Forward Surge Current (Note 3) | IFSM | 40 | A |
| Peak Pulse Current on 10/1000 μS Waveform (Note 1) Figure 4 | IPPM | See Table 1 | A |
| Steady State Power Dissipation (Note 4) | PM(AV) | 1.0 | W |
| Typical Thermal Resistance, Junction to Lead (Note 6) | $R_{\theta JL}$ | 30 | $^\circ\text{C/W}$ |
| Typical Thermal Resistance, Junction to Ambient (Note 6) | $R_{\theta JA}$ | 120 | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range | T_j, T_{STG} | -55 to +150 | $^\circ\text{C}$ |

- Note: 1. Non-repetitive current pulse per Figure 4 and derated above $T_A = 25^\circ\text{C}$ per Figure 1.
 2. Mounted on 5.0mm² copper pad to each terminal.
 3. 8.3ms single half sine-wave duty cycle = 4 pulses per minutes maximum.
 4. Lead temperature at 75 $^\circ\text{C}$.
 5. Peak pulse power waveform is 10/1000 μS .
 6. Mounted on minimum recommended pad layout.

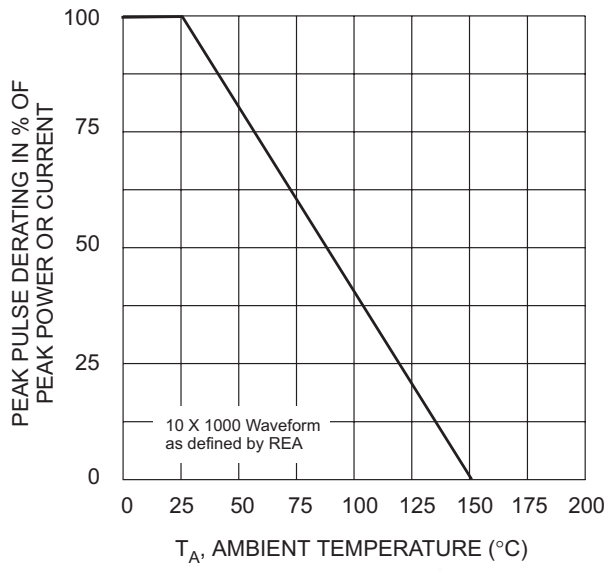


Fig. 1 Pulse Derating Curve

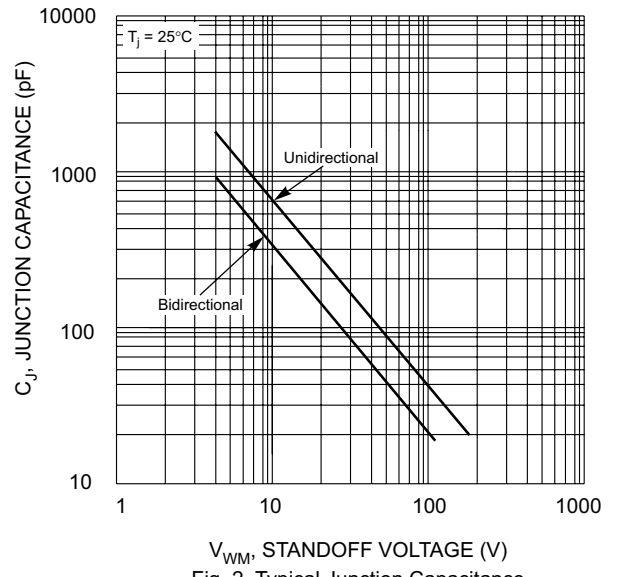


Fig. 2 Typical Junction Capacitance

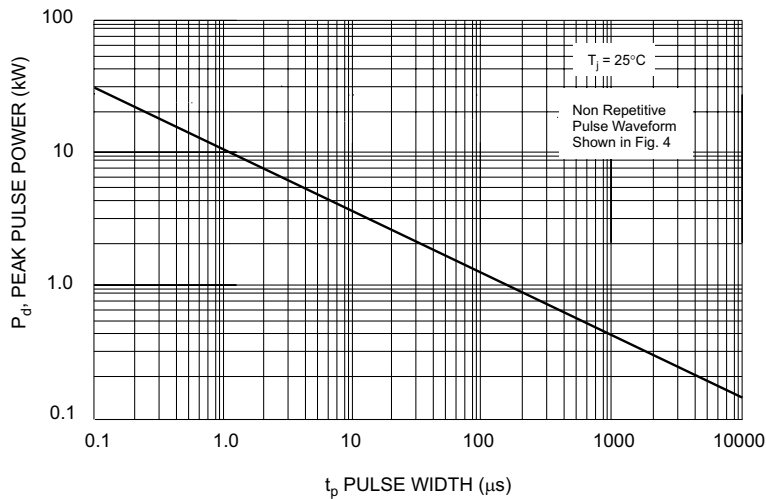


Fig. 3 Pulse Rating Curve

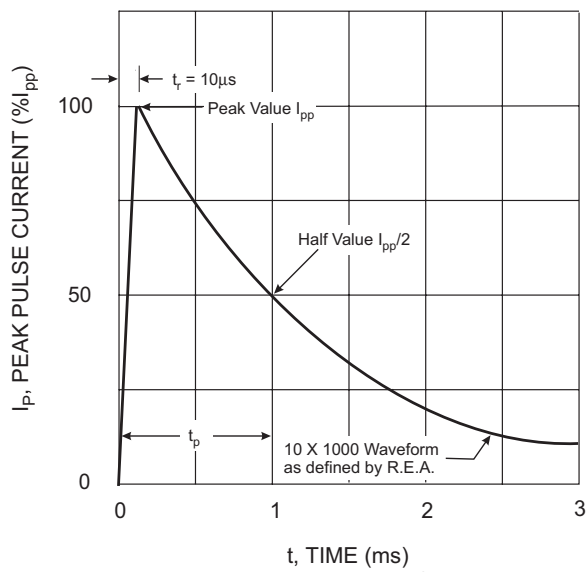


Fig. 4 Pulse Waveform

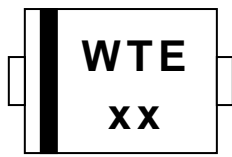
UNI-DIRECTIONAL 400 WATT SURFACE MOUNT TVS

| 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 | 200.00 | 244.80 | 1 | 322.0 | 1.24 | 1 |
| P4SMAJ180A | ST | 180.00 | 200.00 | 220.00 | 1 | 292.0 | 1.37 | 1 |
| P4SMAJ190 | SU | 190.00 | 211.00 | 258.40 | 1 | 340.0 | 1.18 | 1 |
| P4SMAJ190A | SV | 190.00 | 211.00 | 232.00 | 1 | 308.0 | 1.30 | 1 |
| P4SMAJ200A | SX | 200.00 | 224.00 | 247.00 | 1 | 324.0 | 1.23 | 1 |
| P4SMAJ220A | GE | 220.00 | 246.00 | 272.00 | 1 | 356.0 | 1.12 | 1 |
| P4SMAJ250A | GF | 250.00 | 279.00 | 309.00 | 1 | 405.0 | 0.99 | 1 |
| P4SMAJ300A | GG | 300.00 | 335.00 | 371.00 | 1 | 486.0 | 0.82 | 1 |
| P4SMAJ350A | GH | 350.00 | 391.00 | 432.00 | 1 | 567.0 | 0.71 | 1 |
| P4SMAJ400A | GK | 400.00 | 447.00 | 494.00 | 1 | 648.0 | 0.62 | 1 |
| P4SMAJ440A | GL | 440.00 | 492.00 | 543.00 | 1 | 713.0 | 0.56 | 1 |

BI-DIRECTIONAL 400 WATT SURFACE MOUNT TVS

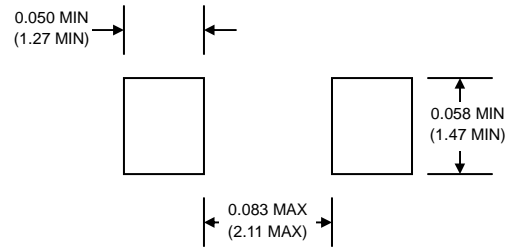
| BI-DIRECTIONAL PART NO. | DEVICE MARKING CODE | REVERSE STAND-OFF VOLTAGE VRWM (V) | BREAKDOWN VOLTAGE VBR (V) MIN. @IT | BREAKDOWN VOLTAGE VBR (V) MAX. @IT | TEST CURRENT IT (mA) | MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V) | PEAK PULSE CURRENT Ipp (A) | REVERSE LEAKAGE @VRWM IR (uA) |
|-------------------------|---------------------|------------------------------------|------------------------------------|------------------------------------|----------------------|--------------------------------------|----------------------------|-------------------------------|
| P4SMAJ180C | YS | 180.00 | 200.00 | 244.80 | 1 | 322.0 | 1.24 | 1 |
| P4SMAJ180CA | YT | 180.00 | 200.00 | 220.00 | 1 | 292.0 | 1.37 | 1 |
| P4SMAJ190C | YU | 190.00 | 211.00 | 258.40 | 1 | 340.0 | 1.18 | 1 |
| P4SMAJ190CA | YV | 190.00 | 211.00 | 232.00 | 1 | 308.0 | 1.30 | 1 |
| P4SMAJ200CA | YX | 200.00 | 224.00 | 247.00 | 1 | 324.0 | 1.23 | 1 |
| P4SMAJ220CA | ZE | 220.00 | 246.00 | 272.00 | 1 | 356.0 | 1.12 | 1 |
| P4SMAJ250CA | ZF | 250.00 | 279.00 | 309.00 | 1 | 405.0 | 0.99 | 1 |
| P4SMAJ300CA | ZG | 300.00 | 335.00 | 371.00 | 1 | 486.0 | 0.82 | 1 |
| P4SMAJ350CA | ZH | 350.00 | 391.00 | 432.00 | 1 | 567.0 | 0.71 | 1 |
| P4SMAJ400CA | ZK | 400.00 | 447.00 | 494.00 | 1 | 648.0 | 0.62 | 1 |
| P4SMAJ440CA | ZL | 440.00 | 492.00 | 543.00 | 1 | 713.0 | 0.56 | 1 |

MARKING INFORMATION



Cathode = Polarity Band Except Bi-Directional Types
 WTE = Manufacturer's Logo
 xx = Device Code, See Page 3

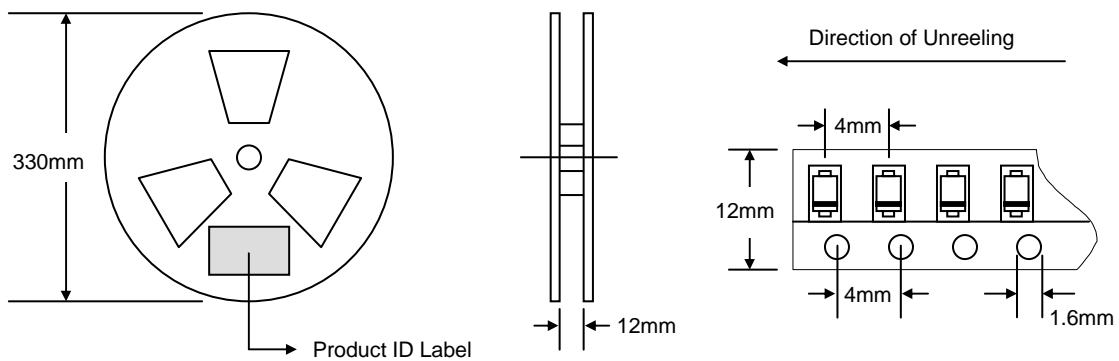
RECOMMENDED FOOTPRINT



inches(mm)

PACKAGING INFORMATION

TAPE & REEL



| Reel Diameter (mm) | Quantity (PCS) | Inner Box Size L x W x H (mm) | Quantity (PCS) | Carton Size L x W x H (mm) | Quantity (PCS) | Approx. Gross Weight (KG) |
|--------------------|----------------|-------------------------------|----------------|----------------------------|----------------|---------------------------|
| 330 | 7,500 | 340 x 337 x 45 | 15,000 | 370 x 370 x 420 | 120,000 | 17.5 |

Note: 1. Paper reel, white or gray color.
 2. Components are packed in accordance with EIA standard 481-1 and 481-2.

ORDERING INFORMATION

| Product No. | Package Type | Shipping Quantity |
|-------------|--------------|-------------------|
| P4SMAJxx-T3 | SMA | 7500/Tape & Reel |

1. Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.
2. **To order RoHS / Lead Free version, add “-LF” suffix to part number above. For example, P4SMAJ180-T3-LF.**

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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.

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We power your everyday.