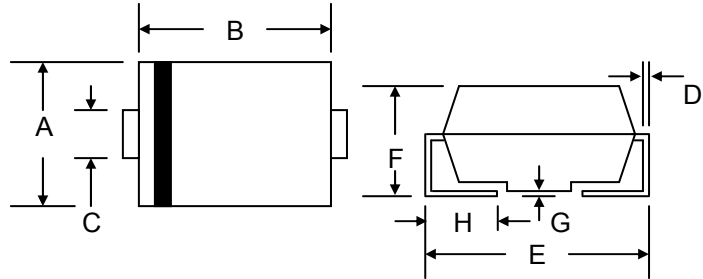


### Features

- Glass Passivated Die Construction
- 600W Peak Pulse Power Dissipation
- 5.8V – 513V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Voltage
- Typical Response Time < 1nS
- Plastic Case Material has UL Flammability Classification Rating 94V-0



### Mechanical Data

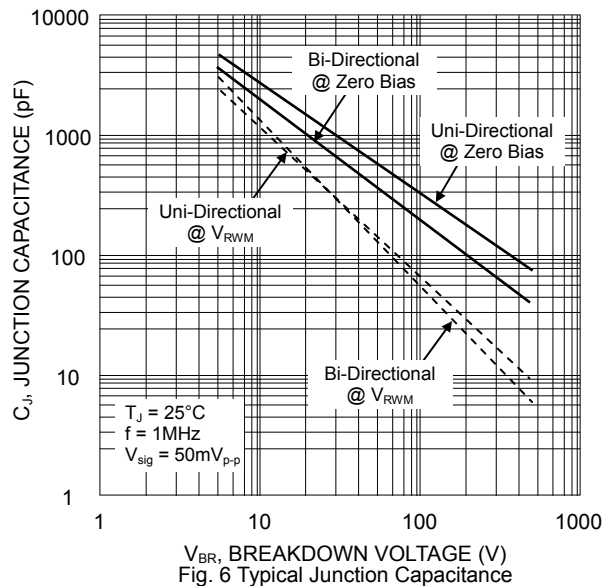
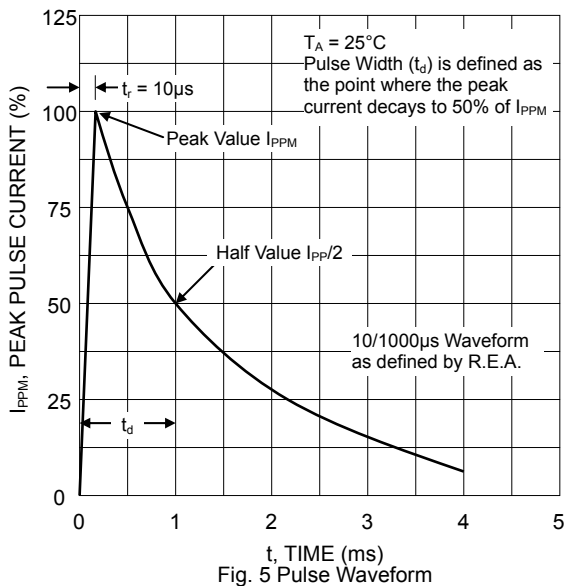
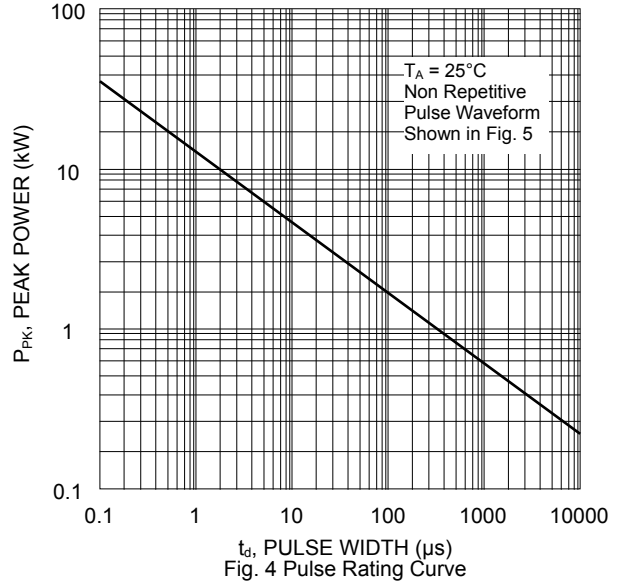
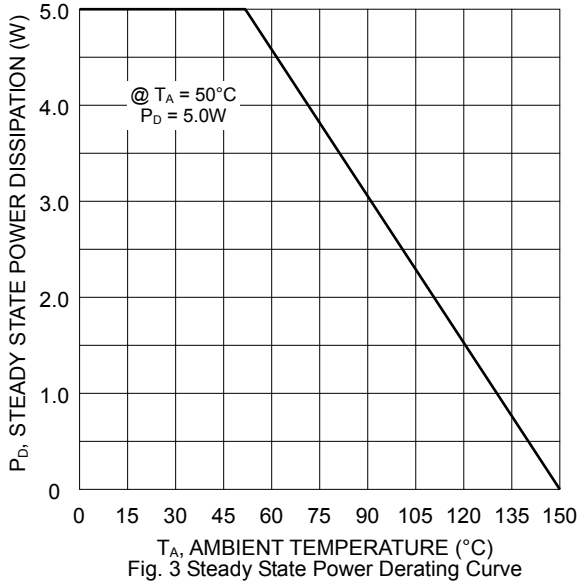
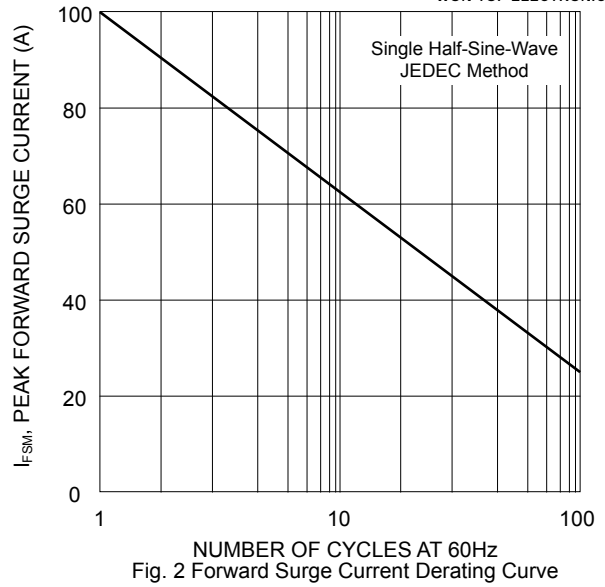
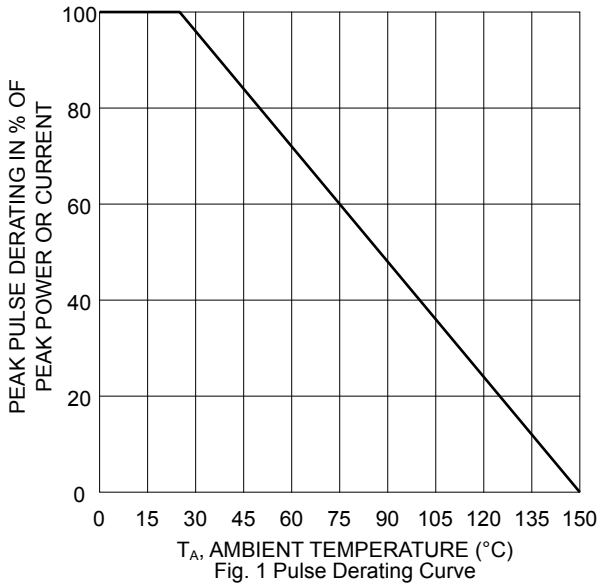
- Case: SMB/DO-214AA, Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band Except Bi-Directional
- Marking: Device Code
- Weight: 0.093 grams (approx.)
- **Lead Free: For RoHS / Lead Free Version, Add "-LF" Suffix to Part Number, See Page 6**

| SMB/DO-214AA         |       |       |
|----------------------|-------|-------|
| Dim                  | Min   | Max   |
| A                    | 3.30  | 3.94  |
| B                    | 4.06  | 4.70  |
| C                    | 1.91  | 2.11  |
| D                    | 0.152 | 0.305 |
| E                    | 5.08  | 5.59  |
| F                    | 2.13  | 2.44  |
| G                    | 0.051 | 0.203 |
| H                    | 0.76  | 1.27  |
| All Dimensions in mm |       |       |

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

| Characteristic  | Symbol                            | Value       | Unit                      |
|---|-----------------------------------|-------------|---------------------------|
| Peak Pulse Power Dissipation on 10/1000 $\mu\text{s}$ Waveform (Note 1, 2, 5) | PPPM                              | 600         | W                         |
| Peak Pulse Current on 10/1000 $\mu\text{s}$ Waveform (Note 1)                 | IPPM                              | See Table 1 | A                         |
| Peak Forward Surge Current (Note 2, 3)  | IFSM                              | 100         | A                         |
| Maximum Instantaneous Forward Voltage at 50A (Note 3, 4)                      | V <sub>F</sub>                    | 3.5 / 5.0   | V                         |
| Power Dissipation on Infinite Heatsink at $T_A = 50^\circ\text{C}$            | P <sub>D</sub>                    | 5.0         | W                         |
| Typical Thermal Resistance, Junction to Ambient (Note 2)                      | R <sub>JA</sub>                   | 100         | $^\circ\text{C}/\text{W}$ |
| Typical Thermal Resistance, Junction to Lead (Note 2)                         | R <sub>JL</sub>                   | 20          | $^\circ\text{C}/\text{W}$ |
| Operating and Storage Temperature Range                                       | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | $^\circ\text{C}$          |

- Note:
1. Non-repetitive current pulse per Figure 5 and derated above  $T_A = 25^\circ\text{C}$  per Figure 1.
  2. Mounted on 5.0 x 5.0mm copper pads to each terminal.
  3. Measured on 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum. For uni-directional devices only.
  4.  $V_F < 3.5\text{V}$  for  $V_{BR} \leq 200\text{V}$  and  $V_F < 5.0\text{V}$  for  $V_{BR} \geq 201\text{V}$ .
  5. Peak pulse power waveform is 10/1000 $\mu\text{s}$ .

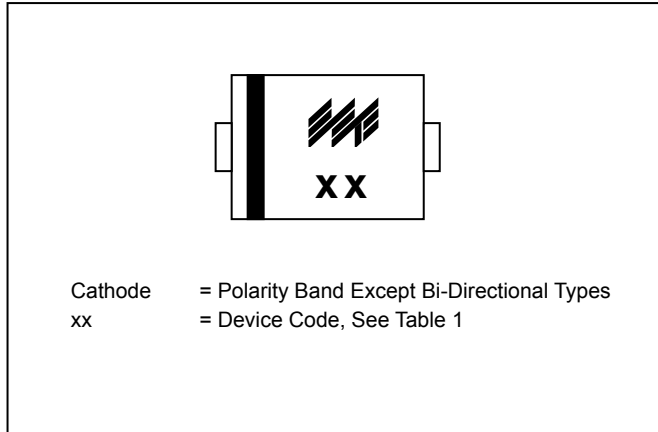


**Electrical Characteristics (@T<sub>A</sub>=25°C unless otherwise specified) Table 1**

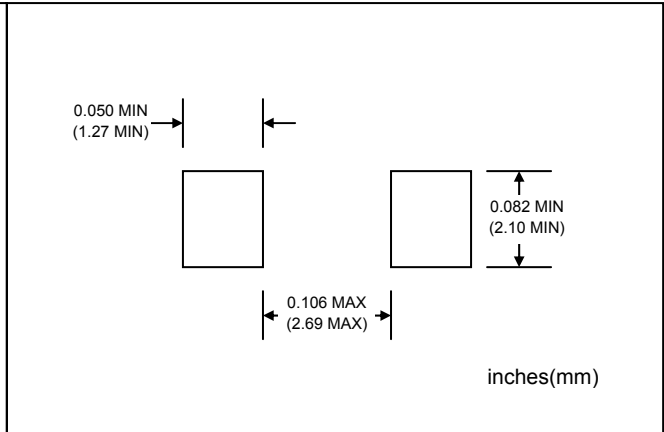
| Uni-Directional Part No. | Bi-Directional Part No. | Device Marking Code |      | Reverse Stand-Off Voltage V <sub>RWM</sub> (V) | Breakdown Voltage V <sub>BR</sub> (V) @I <sub>T</sub> |        | Test Current I <sub>T</sub> (mA) | Maximum Clamping Voltage @I <sub>PP</sub> V <sub>C</sub> (V) | Peak Pulse Current I <sub>PP</sub> (A) | Reverse Leakage* @V <sub>RWM</sub> I <sub>R</sub> (μA) |
|--------------------------|-------------------------|---------------------|------|--|---|--------|----------------------------------|--|--|--|
|                          |                         | UNI                 | BI   |  | Min.  | Max.   |                                  |  |  |  |
| P6SMB6.8A                | P6SMB6.8CA              | 6V8A                | 6V8C | 5.8  | 6.46  | 7.14   | 10                               | 10.5   | 57.14                                  | 1000   |
| P6SMB7.5A                | P6SMB7.5CA              | 7V5A                | 7V5C | 6.4  | 7.13  | 7.88   | 10                               | 11.3   | 53.10                                  | 500  |
| P6SMB8.2A                | P6SMB8.2CA              | 8V2A                | 8V2C | 7.0  | 7.79  | 8.61   | 10                               | 12.1   | 49.59                                  | 200  |
| P6SMB9.1A                | P6SMB9.1CA              | 9V1A                | 9V1C | 7.8  | 8.65  | 9.56   | 1                                | 13.4   | 44.78                                  | 50   |
| P6SMB10A                 | P6SMB10CA               | 10A                 | 10C  | 8.6  | 9.50  | 10.50  | 1                                | 14.5   | 41.38                                  | 10   |
| P6SMB11A                 | P6SMB11CA               | 11A                 | 11C  | 9.4  | 10.45   | 11.55  | 1                                | 15.6   | 38.46                                  | 5  |
| P6SMB12A                 | P6SMB12CA               | 12A                 | 12C  | 10.2   | 11.40   | 12.60  | 1                                | 16.7   | 35.93                                  | 5  |
| P6SMB13A                 | P6SMB13CA               | 13A                 | 13C  | 11.1   | 12.35   | 13.65  | 1                                | 18.2   | 32.97                                  | 1  |
| P6SMB15A                 | P6SMB15CA               | 15A                 | 15C  | 12.8   | 14.25   | 15.75  | 1                                | 21.2   | 28.30                                  | 1  |
| P6SMB16A                 | P6SMB16CA               | 16A                 | 16C  | 13.6   | 15.20   | 16.80  | 1                                | 22.5   | 26.67                                  | 1  |
| P6SMB18A                 | P6SMB18CA               | 18A                 | 18C  | 15.3   | 17.10   | 18.90  | 1                                | 25.2   | 23.81                                  | 1  |
| P6SMB20A                 | P6SMB20CA               | 20A                 | 20C  | 17.1   | 19.00   | 21.00  | 1                                | 27.7   | 21.66                                  | 1  |
| P6SMB22A                 | P6SMB22CA               | 22A                 | 22C  | 18.8   | 20.90   | 23.10  | 1                                | 30.6   | 19.61                                  | 1  |
| P6SMB24A                 | P6SMB24CA               | 24A                 | 24C  | 20.5   | 22.80   | 25.20  | 1                                | 33.2   | 18.07                                  | 1  |
| P6SMB27A                 | P6SMB27CA               | 27A                 | 27C  | 23.1   | 25.65   | 28.35  | 1                                | 37.5   | 16.00                                  | 1  |
| P6SMB30A                 | P6SMB30CA               | 30A                 | 30C  | 25.6   | 28.50   | 31.50  | 1                                | 41.4   | 14.49                                  | 1  |
| P6SMB33A                 | P6SMB33CA               | 33A                 | 33C  | 28.2   | 31.35   | 34.65  | 1                                | 45.7   | 13.13                                  | 1  |
| P6SMB36A                 | P6SMB36CA               | 36A                 | 36C  | 30.8   | 34.20   | 37.80  | 1                                | 49.9   | 12.02                                  | 1  |
| P6SMB39A                 | P6SMB39CA               | 39A                 | 39C  | 33.3   | 37.05   | 40.95  | 1                                | 53.9   | 11.13                                  | 1  |
| P6SMB43A                 | P6SMB43CA               | 43A                 | 43C  | 36.8   | 40.85   | 45.15  | 1                                | 59.3   | 10.12                                  | 1  |
| P6SMB47A                 | P6SMB47CA               | 47A                 | 47C  | 40.2   | 44.65   | 49.35  | 1                                | 64.8   | 9.26                                   | 1  |
| P6SMB51A                 | P6SMB51CA               | 51A                 | 51C  | 43.6   | 48.45   | 53.55  | 1                                | 70.1   | 8.56                                   | 1  |
| P6SMB56A                 | P6SMB56CA               | 56A                 | 56C  | 47.8   | 53.20   | 58.80  | 1                                | 77.0   | 7.79                                   | 1  |
| P6SMB62A                 | P6SMB62CA               | 62A                 | 62C  | 53.0   | 58.90   | 65.10  | 1                                | 85.0   | 7.06                                   | 1  |
| P6SMB68A                 | P6SMB68CA               | 68A                 | 68C  | 58.1   | 64.60   | 71.40  | 1                                | 92.0   | 6.52                                   | 1  |
| P6SMB75A                 | P6SMB75CA               | 75A                 | 75C  | 64.1   | 71.25   | 78.75  | 1                                | 103.0  | 5.83                                   | 1  |
| P6SMB82A                 | P6SMB82CA               | 82A                 | 82C  | 70.1   | 77.90   | 86.10  | 1                                | 113.0  | 5.31                                   | 1  |
| P6SMB91A                 | P6SMB91CA               | 91A                 | 91C  | 77.8   | 86.45   | 95.55  | 1                                | 125.0  | 4.80                                   | 1  |
| P6SMB100A                | P6SMB100CA              | 100A                | 100C | 85.5   | 95.00   | 105.00 | 1                                | 137.0  | 4.38                                   | 1  |
| P6SMB110A                | P6SMB110CA              | 110A                | 110C | 94.0   | 104.50  | 115.50 | 1                                | 152.0  | 3.95                                   | 1  |
| P6SMB120A                | P6SMB120CA              | 120A                | 120C | 102.0  | 114.00  | 126.00 | 1                                | 165.0  | 3.64                                   | 1  |
| P6SMB130A                | P6SMB130CA              | 130A                | 130C | 111.0  | 123.50  | 136.50 | 1                                | 179.0  | 3.35                                   | 1  |
| P6SMB150A                | P6SMB150CA              | 150A                | 150C | 128.0  | 142.50  | 157.50 | 1                                | 207.0  | 2.90                                   | 1  |
| P6SMB160A                | P6SMB160CA              | 160A                | 160C | 136.0  | 152.00  | 168.00 | 1                                | 219.0  | 2.74                                   | 1  |
| P6SMB170A                | P6SMB170CA              | 170A                | 170C | 145.0  | 161.50  | 178.50 | 1                                | 234.0  | 2.56                                   | 1  |
| P6SMB180A                | P6SMB180CA              | 180A                | 180C | 154.0  | 171.00  | 189.00 | 1                                | 246.0  | 2.44                                   | 1  |
| P6SMB200A                | P6SMB200CA              | 200A                | 200C | 171.0  | 190.00  | 210.00 | 1                                | 274.0  | 2.19                                   | 1  |
| P6SMB220A                | P6SMB220CA              | 220A                | 220C | 185.0  | 209.00  | 231.00 | 1                                | 328.0  | 1.83                                   | 1  |
| P6SMB250A                | P6SMB250CA              | 250A                | 250C | 214.0  | 237.50  | 262.50 | 1                                | 344.0  | 1.74                                   | 1  |
| P6SMB300A                | P6SMB300CA              | 300A                | 300C | 256.0  | 285.00  | 315.00 | 1                                | 414.0  | 1.45                                   | 1  |
| P6SMB350A                | P6SMB350CA              | 350A                | 350C | 299.3  | 332.50  | 367.50 | 1                                | 482.0  | 1.24                                   | 1  |
| P6SMB380A                | P6SMB380CA              | 380A                | 380C | 324.9  | 361.00  | 399.00 | 1                                | 524.4  | 1.14                                   | 1  |
| P6SMB400A                | P6SMB400CA              | 400A                | 400C | 342.0  | 380.00  | 420.00 | 1                                | 548.0  | 1.09                                   | 1  |
| P6SMB440A                | P6SMB440CA              | 440A                | 440C | 376.2  | 418.00  | 462.00 | 1                                | 607.2  | 0.99                                   | 1  |
| P6SMB500A                | P6SMB500CA              | 500A                | 500C | 427.5  | 475.00  | 525.00 | 1                                | 690.0  | 0.87                                   | 1  |
| P6SMB520A                | P6SMB520CA              | 520A                | 520C | 444.6  | 494.00  | 546.00 | 1                                | 717.6  | 0.84                                   | 1  |
| P6SMB550A                | P6SMB550CA              | 550A                | 550C | 470.3  | 522.50  | 577.50 | 1                                | 759.0  | 0.79                                   | 1  |
| P6SMB600A                | P6SMB600CA              | 600A                | 600C | 513.0  | 570.00  | 630.00 | 1                                | 828.0  | 0.72                                   | 1  |

\*For bi-directional devices V<sub>RWM</sub> ≤ 10V, the I<sub>R</sub> limit is double.

## MARKING INFORMATION

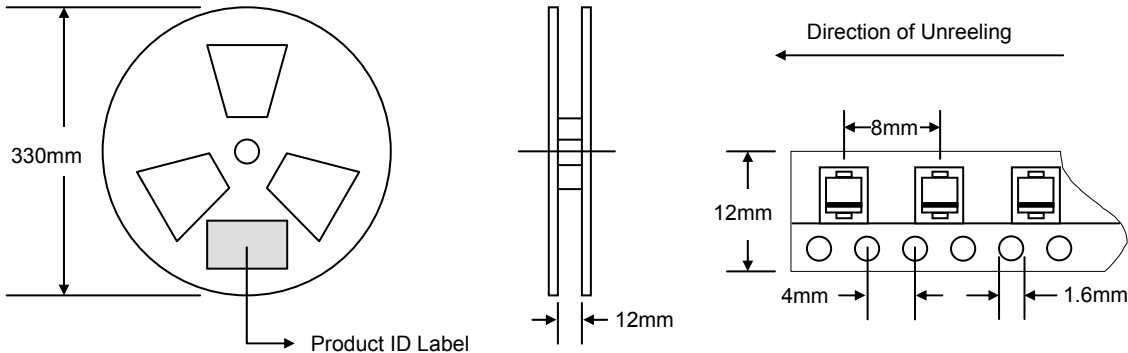


## RECOMMENDED FOOTPRINT



## 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                | 3,000          | 340 x 337 x 45                | 6,000          | 370 x 370 x 420            | 48,000         | 14.0                      |

**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 |
|-------------|--------------|-------------------|
| P6SMBxx-T3  | SMB          | 3000/Tape & Reel  |

1. Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.
2. **To order Lead Free version (with Lead Free finish), add "-LF" suffix to part number above. For example, P6SMB6.8A-T3-LF.**

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