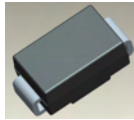


**400W, 600W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR**
**Features**

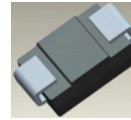
- 400, 600W Peak Pulse Power Dissipation
- 70V Standoff Voltage
- 100V Maximum Clamping Voltage - A requirement of many - 48V Backplane Telecom Applications
- Glass Passivated Die Construction
- Fast Response Time: Typically less than 1 ps
- **Lead Free Finish, RoHS Compliant (Note 4)**
- **Green Molding Compound (No Halogen and Antimony) (Note 5)**
- **Qualified to AEC-Q101 Standards for High Reliability**

**Mechanical Data**

- Case: SMA / SMB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208
- Polarity Indicator: Cathode Band
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: SMA 0.064 grams (approximate)  
SMB 0.093 grams (approximate)



Top View



Bottom View

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

| Characteristic   | Symbol    | SMAT70A | SMBT70A | Unit |
|--|-----------|---------|---------|------|
| Peak Pulse Power Dissipation<br>(Non repetitive current pulse derated above $T_A = 25^\circ\text{C}$ ) | $P_{PK}$  | 400     | 600     | W    |
| Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (Note 2)            | $I_{FSM}$ | 40      | 100     | A    |
| Instantaneous Forward Voltage @ $I_{PP} = 35\text{A}$ (Note 2)   | $V_F$     | 3.5     |         | V    |

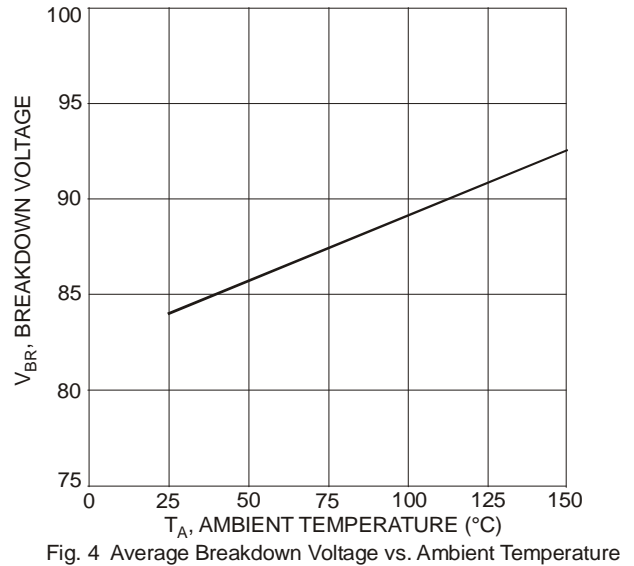
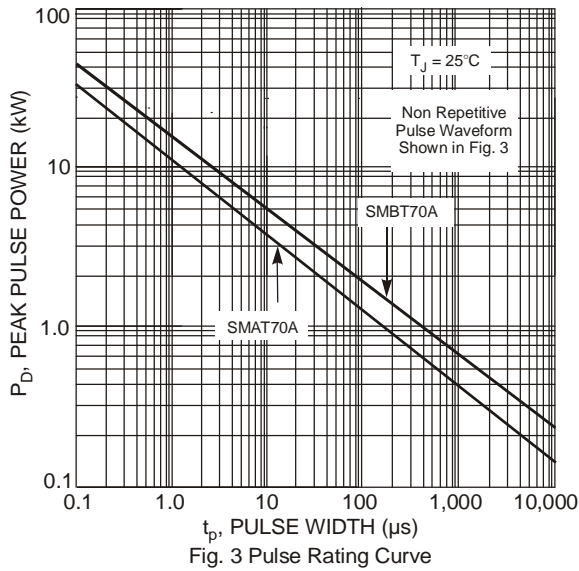
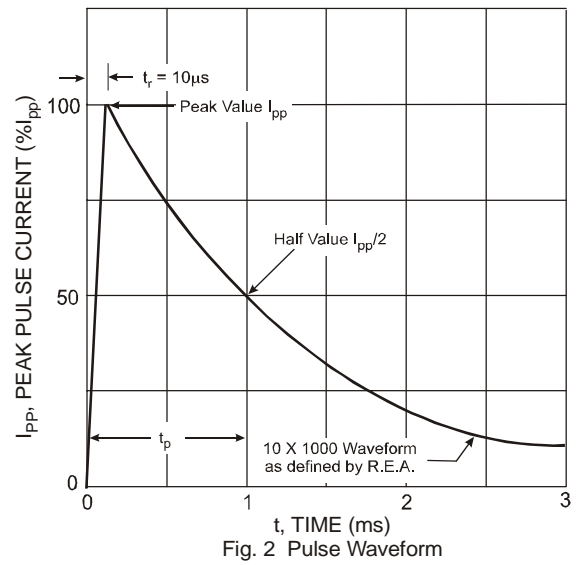
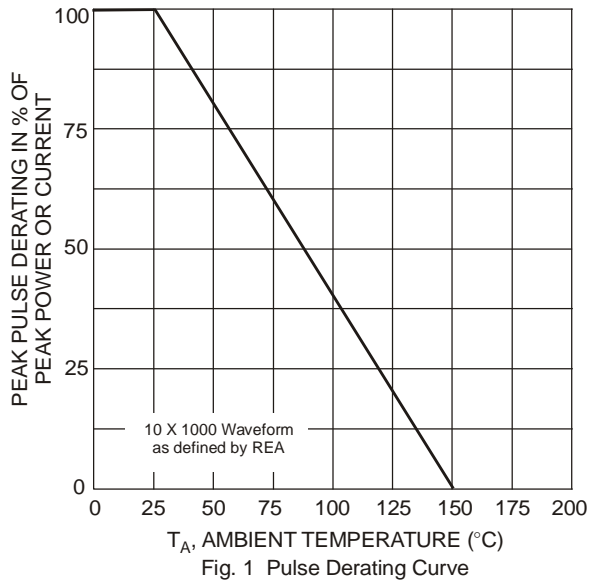
**Thermal Characteristics**

| Characteristic                          | Symbol         | Value       | Unit             |
|---|----------------|-------------|------------------|
| Operating and Storage Temperature Range | $T_J, T_{STG}$ | -55 to +150 | $^\circ\text{C}$ |

**Electrical Characteristics** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

| Part Number | Reverse Standoff Voltage | Breakdown Voltage $V_{BR}$ @ $I_T$ (Note 3) |         | Test Current | Max. Reverse Leakage @ $V_{RWM}$ | Max. Clamping Voltage @ $I_{PP}$ | Max. Peak Pulse Current $I_{PP}$ | Typical Junction Capacitance (Note 3) | Typical Voltage Temp. Variation of $V_{BR}$ | Marking Code |
|-------------|--------------------------|---|---------|--------------|----------------------------------|----------------------------------|----------------------------------|---------------------------------------|---|--------------|
|             | $V_{RWM}$ (V)            | Min (V)                                     | Max (V) | $I_T$ (mA)   | $I_R$ ( $\mu\text{A}$ )          | $V_C$ (V)                        | (A)                              | (pF)                                  | mV/ $^\circ\text{C}$                        |              |
| SMAT70A     | 70                       | 77.8  | 89.5    | 1.0          | 5.0                              | 100                              | 3.5                              | 140                                   | 80  | KEX          |
| SMBT70A     | 70                       | 77.8  | 89.5    | 1.0          | 5.0                              | 100                              | 5.3                              | 290                                   | 80  | NPX          |

- Notes:
1. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
  2.  $V_{BR}$  measured with  $I_T$  current pulse = 300 $\mu\text{s}$ .
  3.  $f = 1\text{MHz}$ ,  $V_R = 0\text{VDC}$ .
  4. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html).
  5. Product manufactured with Data Code 0924 (week 24, 2009) and newer are built with Green Molding Compound.

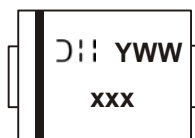


**Ordering Information** (Note 6)

| Part Number  | Case | Packaging        |
|--------------|------|------------------|
| SMAT70A-13-F | SMA  | 5000/Tape & Reel |
| SMBT70A-13-F | SMB  | 3000/Tape & Reel |

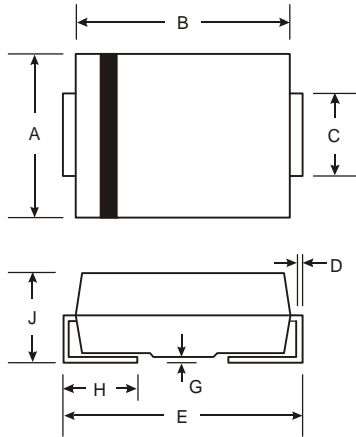
Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



xxx = Product type marking code  
See Electrical Characteristics Table  
DII = Manufacturers' code marking  
YWW = Date code marking  
Y = Last digit of year ex: 2 for 2002  
WW = Week code 01 to 52

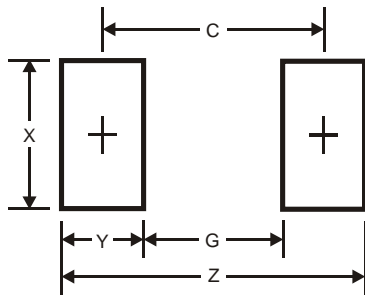
**Package Outline Dimensions**



| SMA                  |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 2.29 | 2.92 |
| B                    | 4.00 | 4.60 |
| C                    | 1.27 | 1.63 |
| D                    | 0.15 | 0.31 |
| E                    | 4.80 | 5.59 |
| G                    | 0.05 | 0.20 |
| H                    | 0.76 | 1.52 |
| J                    | 2.01 | 2.30 |
| All Dimensions in mm |      |      |

| SMB                  |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 3.30 | 3.94 |
| B                    | 4.06 | 4.57 |
| C                    | 1.96 | 2.21 |
| D                    | 0.15 | 0.31 |
| E                    | 5.00 | 5.59 |
| G                    | 0.05 | 0.20 |
| H                    | 0.76 | 1.52 |
| J                    | 2.00 | 2.62 |
| All Dimensions in mm |      |      |

**Suggested Pad Layout**



| SMA Dimensions | Value (in mm) |
|----------------|---------------|
| Z              | 6.5           |
| G              | 1.5           |
| X              | 1.7           |
| Y              | 2.5           |
| C              | 4.0           |

| SMB Dimensions | Value (in mm) |
|----------------|---------------|
| Z              | 6.7           |
| G              | 1.8           |
| X              | 2.3           |
| Y              | 2.5           |
| C              | 4.3           |

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