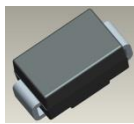


## Features

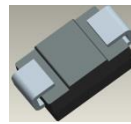
- 400, 600W Peak Pulse Power Dissipation
- 70V Standoff Voltage
- 100V Maximum Clamping Voltage
- Suitable for 48V Backplane Telecom Applications
- Glass Passivated Die Construction
- Fast Response Time: Typically Less than 1ps
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

## 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
- Weight: SMA 0.064 grams (Approximate)  
SMB 0.093 grams (Approximate)



Top View



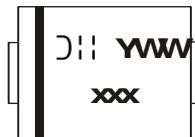
Bottom View

## Ordering Information (Note 4)

| Part Number  | Case | Packaging         |
|--------------|------|-------------------|
| SMAT70A-13-F | SMA  | 5,000/Tape & Reel |
| SMBT70A-13-F | SMB  | 3,000/Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information



xxx = Product Type Marking Code  
See Electrical Characteristics Table  
DII = Manufacturer's Code Marking  
YWW = Date Code Marking  
Y = Last Digit of Year ex: 4 for 2014  
WW = Week Code 01 to 53

**Maximum Ratings** (@T<sub>A</sub> = +25°C unless otherwise specified.)

| Characteristic  | Symbol           | SMAT70A | SMBT70A | Unit |
|---|------------------|---------|---------|------|
| Peak Pulse Power Dissipation<br>(Non-repetitive current pulse derated above T <sub>A</sub> = +25°C) | P <sub>PK</sub>  | 400     | 600     | W    |
| Peak Forward Surge Current, 8.3ms Single Half-Sine Wave<br>Superimposed on Rated Load (Note 5)      | I <sub>FSM</sub> | 40      | 100     | A    |
| Instantaneous Forward Voltage @ I <sub>PP</sub> = 35A (Note 5)                                      | V <sub>F</sub>   | 3.5     |         | V    |

**Thermal Characteristics**

| Characteristic                          | Symbol                            | Value       | Unit |
|---|-----------------------------------|-------------|------|
| Operating and Storage Temperature Range | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | °C   |

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

| Part Number | Reverse Standoff Voltage | Breakdown Voltage V <sub>BR</sub> @ I <sub>T</sub> (Note 6) |         | Test Current        | Max. Reverse Leakage @ V <sub>RWM</sub> | Max. Clamping Voltage @ I <sub>pp</sub> | Max. Peak Pulse Current I <sub>pp</sub> | Typical Total Capacitance (Note 6) | Typical Voltage Temp. Variation of V <sub>BR</sub> | Marking Code |
|-------------|--------------------------|---|---------|---------------------|---|---|---|------------------------------------|--|--------------|
|             | V <sub>RWM</sub> (V)     | Min (V)   | Max (V) | I <sub>T</sub> (mA) | I <sub>R</sub> (µA)                     | V <sub>C</sub> (V)                      | (A)                                     | (pF)                               | mV/°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: 5. V<sub>BR</sub> measured with I<sub>T</sub> current pulse = 10 ~ 15 ms.  
6. f = 1MHz, V<sub>R</sub> = 0VDC.

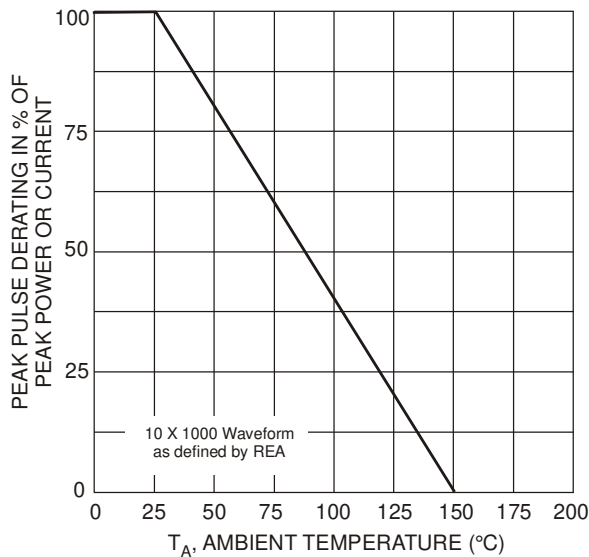


Fig. 1 Pulse Derating Curve

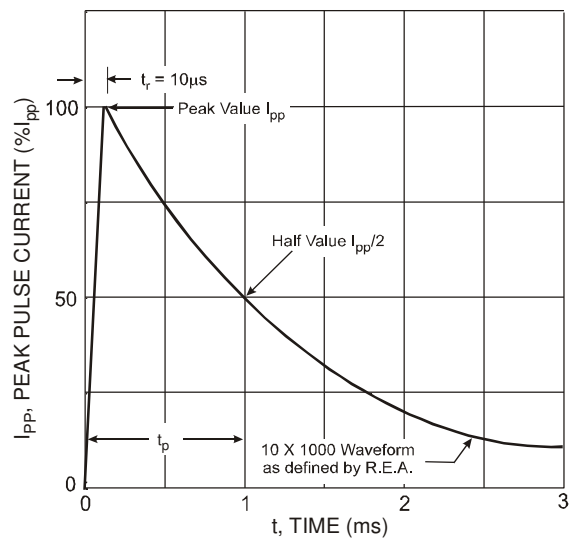
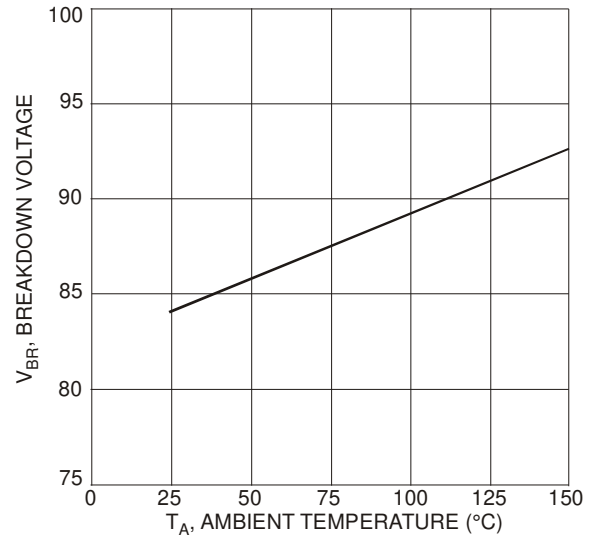
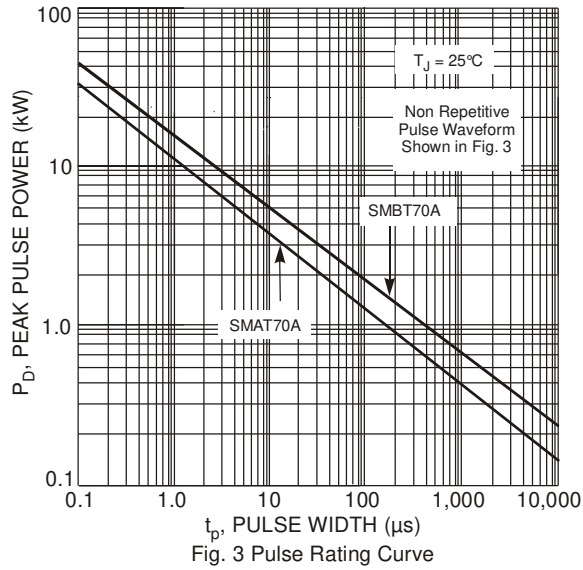


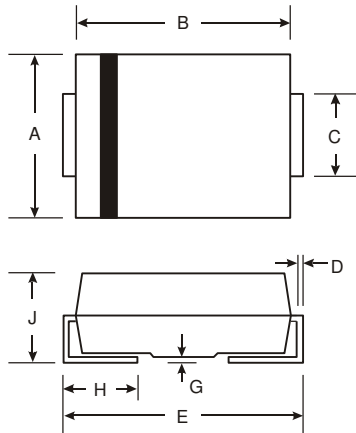
Fig. 2 Pulse Waveform



**Package Outline Dimensions**

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.

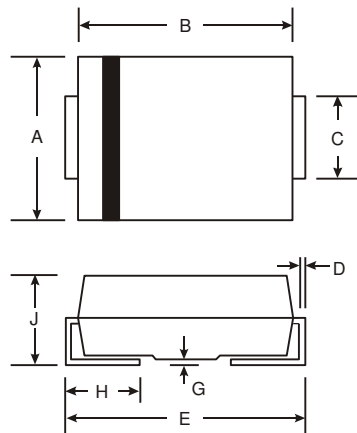
(1) SMA



| 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

(2) SMB



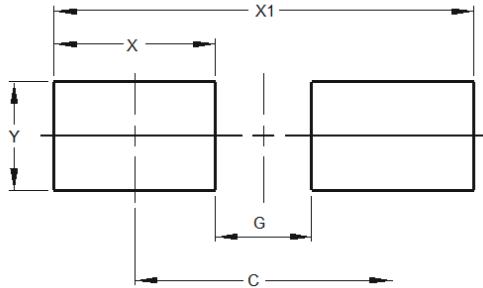
| SMB |      |      |
|-----|------|------|
| Dim | Min  | Max  |
| A   | 3.30 | 3.94 |
| B   | 4.06 | 4.57 |
| C   | 1.96 | 2.21 |
| D   | 0.15 | 0.31 |
| E   | 5.00 | 5.59 |
| G   | 0.05 | 0.20 |
| H   | 0.76 | 1.52 |
| J   | 2.00 | 2.50 |

All Dimensions in mm

**Suggested Pad Layout**

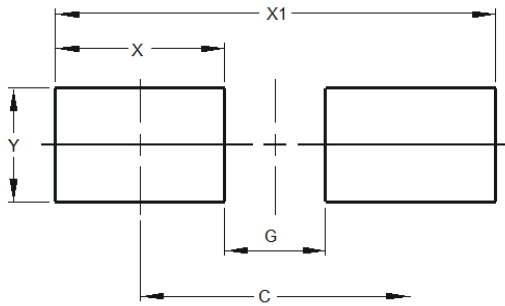
Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.

**(1) SMA**



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 4.00          |
| G          | 1.50          |
| X          | 2.50          |
| X1         | 6.50          |
| Y          | 1.70          |

**(2) SMB**



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 4.30          |
| G          | 1.80          |
| X          | 2.50          |
| X1         | 6.80          |
| Y          | 2.30          |

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