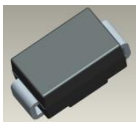
400W, 600W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Features

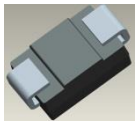
- 400, 600W Peak Pulse Power Dissipation
- 70V Standoff Voltage
- 100V Maximum Clamping Voltage
- Suitable for 48V Backplane Telecom Applications
- Glass Passivated Die Construction
- Fast Response Time: Typically Less than 1ps
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony 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 e3
- 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 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
= Manufacturers' Code Marking
YWW = Date Code Marking
Y = Last Digit of Year ex: 4 for 2014
WW = Week Code 01 to 53

Maximum Ratings (@T_A = +25°C unless otherwise specified.)

Characteristic	Symbol	SMAT70A	SMBT70A	Unit
Peak Pulse Power Dissipation (Non-repetitive current pulse derated above T_A = +25°C)	P_{PK}	400	600	W
Peak Forward Surge Current, 8.3ms Single Half-Sine Wave Superimposed on Rated Load (Note 5)	I_{FSM}	40	100	A
Instantaneous Forward Voltage @ I_{PP} = 35A (Note 5)	V_F	3.5		V

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics (@T_A = +25°C unless otherwise specified.)

Part Number	Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T (Note 6)		Test Current	Max. Reverse Leakage @ V_{RWM}	Max. Clamping Voltage @ I_{pp}	Max. Peak Pulse Current I_{pp}	Typical Total Capacitance (Note 6)	Typical Voltage Temp. Variation of V_{BR}	Marking Code
	V_{RWM} (V)	Min (V)	Max (V)	I_T (mA)	I_R (µA)	V_C (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_{BR} measured with I_T current pulse = 10 ~ 15 ms.
6. f = 1MHz, V_R = 0VDC.

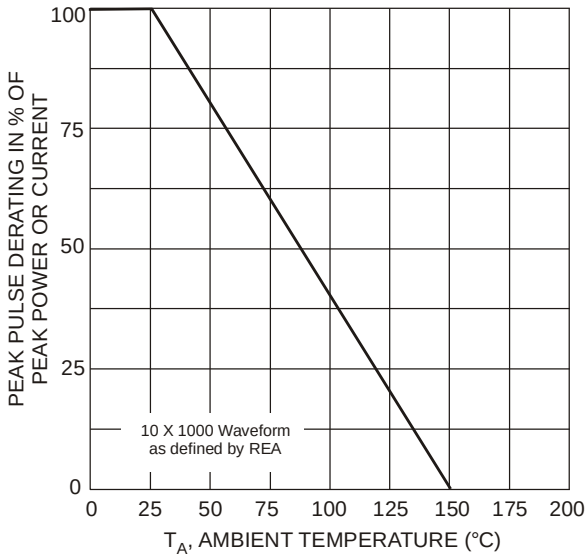


Fig. 1 Pulse Derating Curve

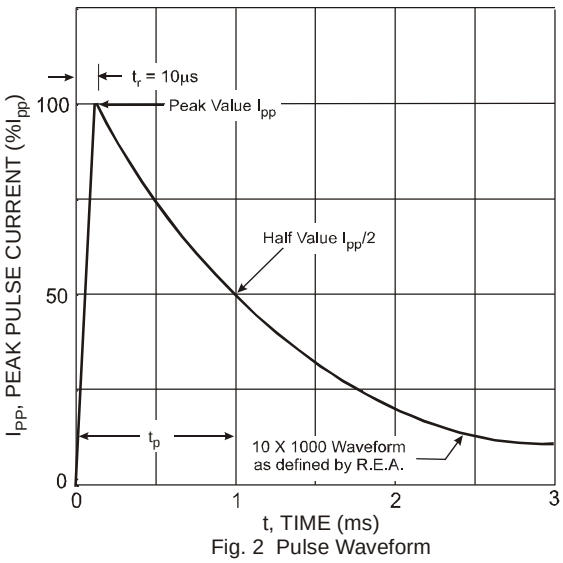


Fig. 2 Pulse Waveform

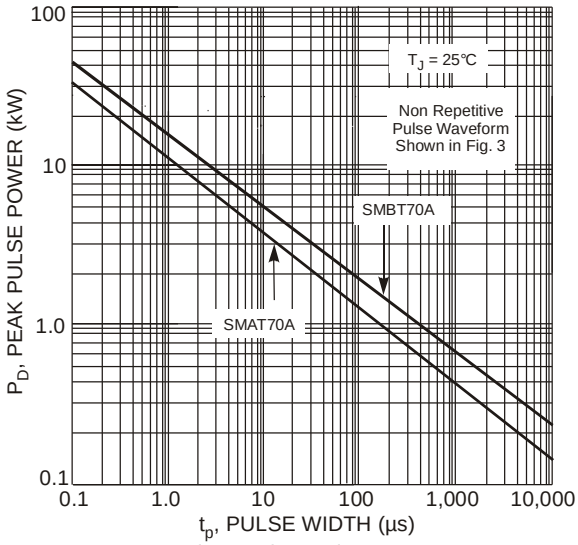


Fig. 3 Pulse Rating Curve

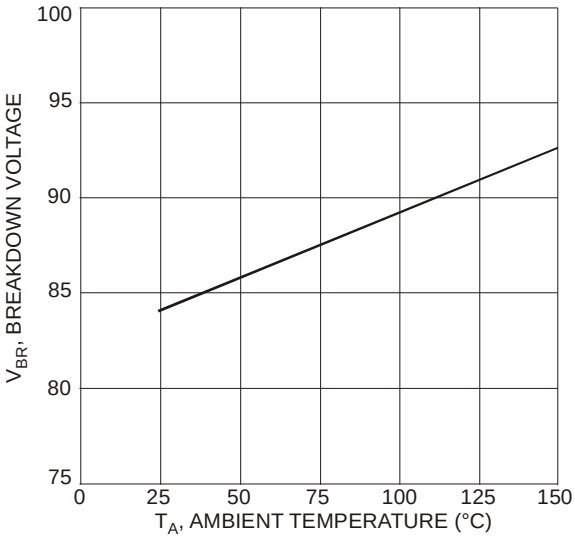
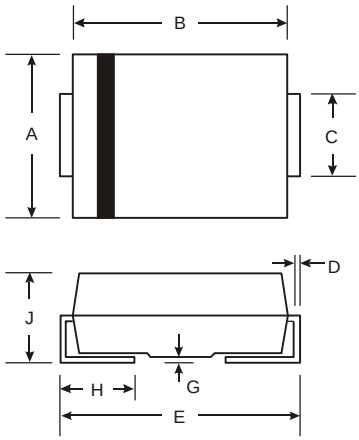


Fig. 4 Average Breakdown Voltage vs. Ambient Temperature

Package Outline Dimensions

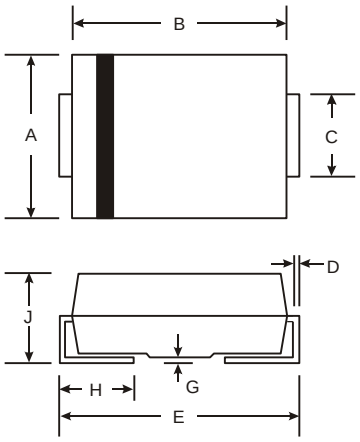
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.

(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

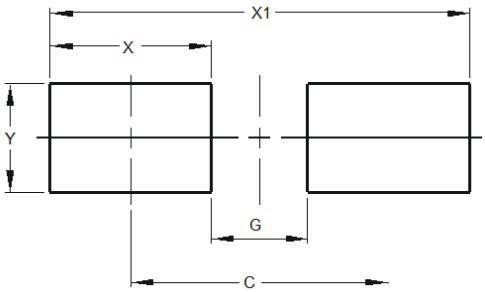


SMB		
Dim	**Min**	**Max**
A	3.30	3.94
B	4.06	4.57
C	1.96	2.21
D	0.15	0.31
E	5.00	5.59
G	0.05	0.20
H	0.76	1.52
J	2.00	2.50
All Dimensions in mm		

Suggested Pad Layout

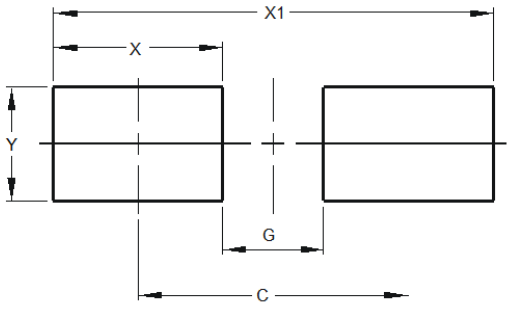
Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.

(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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