

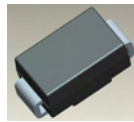
400W, 600W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Features

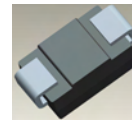
- 400, 600W Peak Pulse Power Dissipation
- 70V Standoff Voltage
- 100V Maximum Clamping Voltage - A requirement of many - 48V Backplane Telecom Applications
- Glass Passivated Die Construction
- Fast Response Time: Typically less than 1 ps
- **Lead Free Finish/RoHS Compliant (Note 4)**
- **Qualified 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 (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 (μA)	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 μs .
 3. $f = 1\text{MHz}$, $V_R = 0\text{VDC}$.
 4. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see *EU Directive 2002/95/EC Annex Notes*.

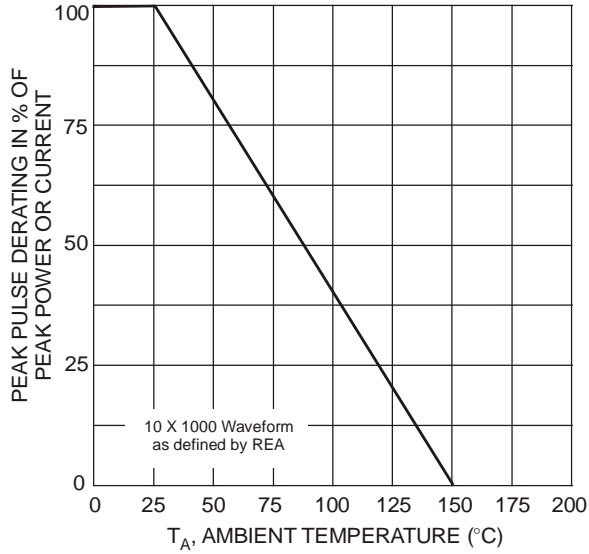


Fig. 1 Pulse Derating Curve

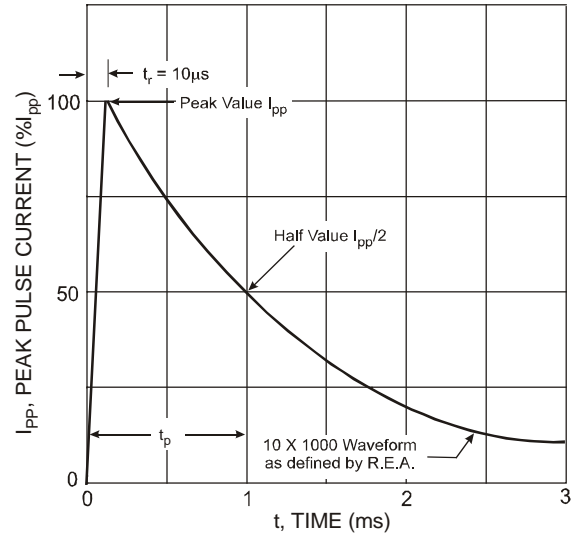


Fig. 2 Pulse Waveform

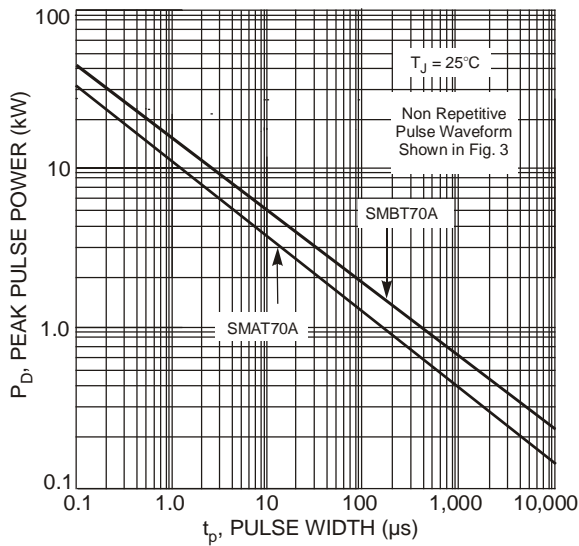


Fig. 3 Pulse Rating Curve

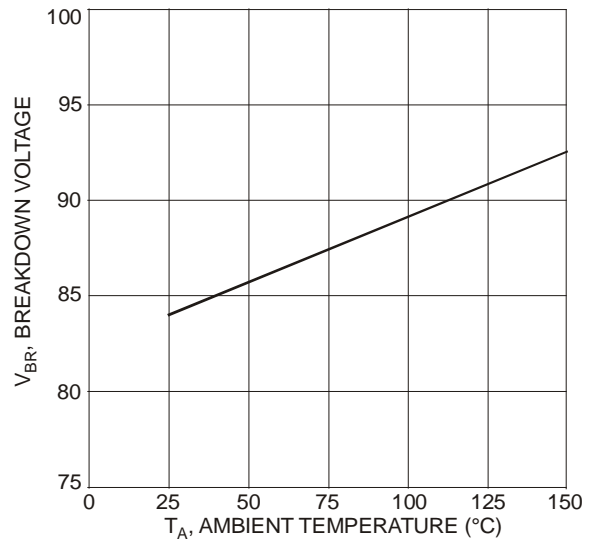


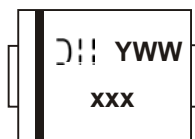
Fig. 4 Average Breakdown Voltage vs. Ambient Temperature

Ordering Information (Note 5)

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

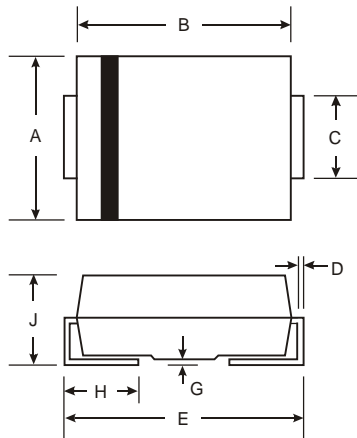
Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

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

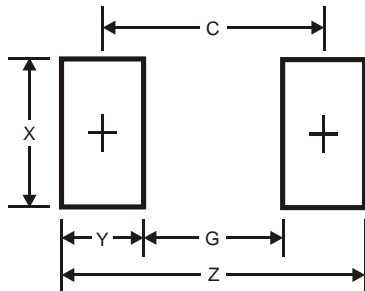
Package Outline Dimensions



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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