

Surface-Mount TRANSZORB® Transient Voltage Suppressors



FEATURES

- Very low profile – 0.95 mm
- SMA footprint compatible
- Peak pulse power
 - 600 W at 10/1000 μ s
 - 4 kW (8/20 μ s)
- Excellent clamping capability (3 % to 9 % compared to current SMB TVS)
- ESD capability
 - 15 kV (air)
 - 8 kV (contact)
- T_J max: 175 °C
- Halogen-free according to IEC 61249-2-21 definition
- Environmentally friendly “green” specifications, lead (Pb)-free devices

KEY APPLICATIONS

- Hard disk input power line protection circuit
- Hot swap PWM IC input power line protection circuit
- Power supply DC output protection circuit

RESOURCES

- Datasheet: SMA6F5.0A thru SMA6F20A – <http://www.vishay.com/ppg?89458>
- For technical questions, contact DiodesAmericas@vishay.com; DiodesAsia@vishay.com; DiodesEurope@vishay.com
- Material categorization: For definitions of compliance, please see <http://www.vishay.com/doc?99912>

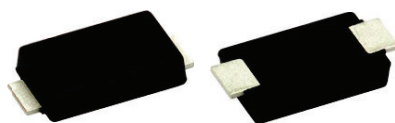

RoHS
COMPLIANT

HALOGEN
FREE

One of the World's Largest Manufacturers of
Discrete Semiconductors and Passive Components


Surface-Mount TRANSZORB® Transient Voltage Suppressors

SlimSMA™



Top View

Bottom View

DO-221AC

PRIMARY CHARACTERISTICS

V_{WM}	5.0 V to 20 V
P_{PPM} (10 x 1000 μ s)	600 W
P_{PPM} (8 x 20 μ s)	4000 W
P_D at $T_M = 55^\circ\text{C}$	6 W
T_J max.	175 $^\circ\text{C}$

TYPICAL APPLICATIONS

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, and telecommunication.

MECHANICAL DATA

Case: DO-221AC (SlimSMA)

Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, RoHS compliant, and commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

M3 suffix meets JESD 201 class 1A whisker test

Polarity: Color band denotes cathode end

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)																
DEVICE TYPE	DEVICE MARKING CODE	BREAKDOWN VOLTAGE V _{BR} AT I _T ⁽¹⁾			MAXIMUM REVERSE LEAKAGE I _D AT V _{WM} ⁽³⁾			V _C AT I _{PP}			R _D ⁽²⁾	V _C AT I _{PP}			R _D ⁽²⁾	αT ⁽³⁾
		MIN.	MAX.		25 °C	85 °C		10/1000 μs			8/20 μs					
								MAX.			MAX.					
		V		mA	μA		V	V	A	Ω	V	A	Ω	10 ⁻⁴ /°C		
SMA6F5.0A	6AE	6.40	7.07	10	150	375	5.0	9.2	68.0	0.031	13.4	298	0.021	5.7		
SMA6F6.0A	6AG	6.70	7.41	10	600	1500	6.0	9.5	63.2	0.033	13.7	290	0.022	5.9		
SMA6F6.5A	6AK	7.20	7.96	10	100	250	6.5	10.2	58.8	0.038	14.5	276	0.024	6.1		
SMA6F7.5A	6AP	8.33	9.21	1	50	125	7.5	11.8	50.8	0.051	17.0	235	0.033	6.5		
SMA6F8.0A	6AR	8.89	9.83	1	20	50	8.0	12.8	46.9	0.063	18.2	220	0.038	7.0		
SMA6F8.5A	6AT	9.4	10.4	1	20	50	8.5	13.3	45.1	0.064	18.7	205	0.040	7.3		
SMA6F10A	6AX	11.1	12.3	1	1.0	5.0	10	15.7	38.2	0.089	19.6	184	0.040	7.8		
SMA6F11A	6AZ	12.2	13.5	1	1.0	5.0	11	17.2	34.8	0.107	21.5	172	0.047	8.1		
SMA6F12A	6BE	13.3	14.7	1	0.2	1.0	12	18.8	31.9	0.128	23.5	157	0.056	8.3		
SMA6F12AHD	6BF	13.2	14.3	1	0.2	1.0	12	18.5	32.4	0.130	22.9	157	0.055	8.4		
SMA6F13A	6BG	14.4	15.9	1	0.2	1.0	13	20.4	29.4	0.153	23.9	147	0.064	8.4		
SMA6F15A	6BM	16.7	18.5	1	0.2	1.0	15	23.6	25.4	0.201	27.7	123	0.075	8.8		
SMA6F16A	6BP	17.8	19.7	1	0.2	1.0	16	25.2	23.8	0.229	29.5	119	0.082	8.8		
SMA6F17A	6BR	18.9	20.9	1	0.2	1.0	17	26.7	22.5	0.259	31.4	111	0.095	9.0		
SMA6F18A	6BT	20.0	22.1	1	0.2	1.0	18	28.3	21.2	0.292	33.2	102	0.109	9.2		
SMA6F20A	6BV	22.2	24.5	1	0.2	1.0	20	31.4	19.1	0.361	36.8	93	0.132	9.4		

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Typical thermal resistance, junction to ambient	$R_{\theta JA}$ (1)	150	$^\circ\text{C}/\text{W}$
Typical thermal resistance, junction to mount	$R_{\theta JM}$ (2)	20	$^\circ\text{C}/\text{W}$

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SMA6F5.0A-M3/6A	0.032	6A	3500	7" diameter plastic tape and reel
SMA6F5.0A-M3/6B	0.032	6B	14 000	13" diameter plastic tape and reel

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