



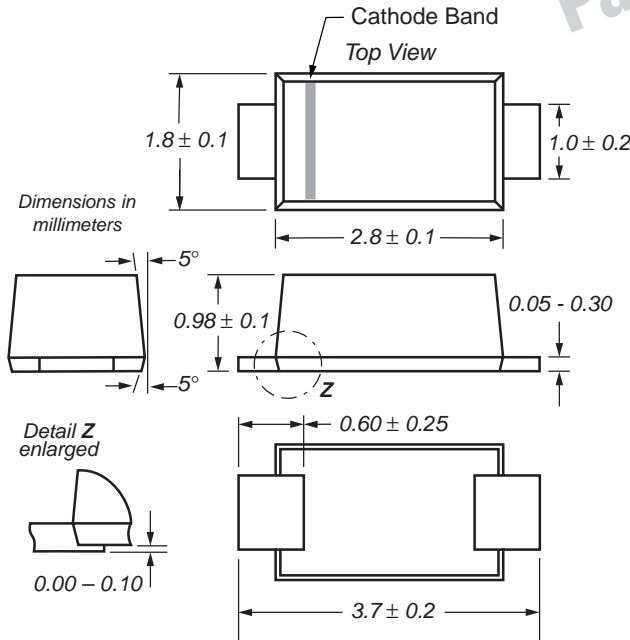
Surface Mount TransZorb® Transient Voltage Suppressors

Stand-off Voltage 5.0 to 188V

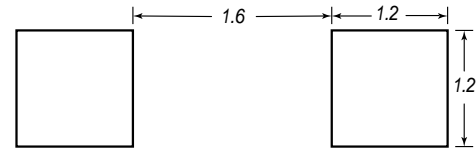
Peak Pulse Power
1000W (8/20ms pulse)
200W (10/1000ms pulse)

DO-219 (SMF)

Patented



Mounting Pad Layout



Mechanical Data

Case: Low-profile plastic case

Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

Polarity: The band denotes the cathode, which is positive with respect to the anode under normal TVS operation

Mounting Position: Any

Weight: approx. 0.01g

Packaging codes-options:

G1-10K per 13" reel (8mm tape), 50K/box

G2-3K per 7" reel (8mm tape), 30K/box

Features

- For surface mounted applications.
- Low-profile package
- Optimized for LAN protection applications
- Ideal for ESD protection of data lines in accordance with IEC 1000-4-2 (IEC801-2)
- Ideal for EFT protection of data lines in accordance with IEC 1000-4-4 (IEC801-4)
- Glass passivated junction
- Low incremental surge resistance, excellent clamping capability
- 200W peak pulse power capability with a 10/1000µs waveform, repetition rate (duty cycle): 0.01% (150W above 78V)
- Very fast response time
- High temperature soldering guaranteed: 250°C/10 seconds at terminals

Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000µs waveform ⁽¹⁾ 8/20µs waveform	PPPM	200 1000	W
Peak pulse current with a 10/1000µs waveform ⁽¹⁾	IPPM	See Next Table	A
Peak forward surge current 8.3ms single half sine-wave uni-directional only	IFSM	20	A
Operating junction and storage temperature range	TJ, TSTG	-55 to +150	°C

Note: (1) Non-repetitive current pulse and derated above TA = 25°
Rating is 150W (10/1000µs pulse) above 78V

SMF5.0A thru SMF188A



Vishay Semiconductors
formerly General Semiconductor

Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified. $V_F = 3.5V$ at $I_F = 12A$ (uni-directional only)

Device Type	Device Marking Code	Breakdown Voltage at I_T $V_{(BR)}$ (V) Min ⁽¹⁾	Test Current I_T (mA)	Stand-off Voltage V_{WM} (V)	Maximum Reverse Leakage at V_{WM} I_D (μA)	Maximum Peak Pulse Surge Current I_{PPM} (A) ^(2,3)	Maximum Clamping Voltage at I_{PPM} V_C (V)
SMF5.0A	AE	6.40	10	5.0	400	16.3	9.2
SMF6.0A	AG	6.67	10	6.0	400	14.6	10.3
SMF6.5A	AK	7.22	10	6.5	250	13.4	11.2
SMF7.0A	AM	7.78	10	7.0	100	12.5	12.0
SMF7.5A	AP	8.33	1.0	7.5	50	11.6	12.9
SMF8.0A	AR	8.89	1.0	8.0	25	11.0	13.6
SMF8.5A	AT	9.44	1.0	8.5	10	10.4	14.4
SMF9.0A	AV	10.0	1.0	9.0	5.0	9.7	15.4
SMF10A	AX	11.1	1.0	10	2.5	8.8	17.0
SMF11A	AZ	12.2	1.0	11	2.5	8.2	18.2
SMF12A	BE	13.3	1.0	12	2.5	7.5	19.9
SMF13A	BG	14.4	1.0	13	1.0	7.0	21.5
SMF14A	BK	15.6	1.0	14	1.0	6.5	23.2
SMF15A	BM	16.7	1.0	15	1.0	6.1	24.4
SMF16A	BP	17.8	1.0	16	1.0	5.8	26.0
SMF17A	BR	18.9	1.0	17	1.0	5.4	27.6
SMF18A	BT	20.0	1.0	18	1.0	5.1	29.2
SMF20A	BV	22.2	1.0	20	1.0	4.6	32.4
SMF22A	BX	24.4	1.0	22	1.0	4.2	35.5
SMF24A	BZ	26.7	1.0	24	1.0	3.9	38.9
SMF26A	CE	28.9	1.0	26	1.0	3.6	42.1
SMF28A	CG	31.1	1.0	28	1.0	3.3	45.4
SMF30A	CK	33.3	1.0	30	1.0	3.1	48.4
SMF33A	CM	36.7	1.0	33	1.0	2.8	53.3
SMF36A	CP	40.0	1.0	36	1.0	2.6	58.1
SMF40A	CR	44.4	1.0	40	1.0	2.3	64.5
SMF43A	CT	47.8	1.0	43	1.0	2.2	69.4
SMF45A	CV	50.0	1.0	45	1.0	2.1	72.7
SMF48A	CX	53.3	1.0	48	1.0	1.9	77.4
SMF51A	CZ	56.7	1.0	51	1.0	1.8	82.4

Notes: (1) $V_{(BR)}$ measured after I_T applied for 300 μs square wave pulse or equivalent

(2) Surge current waveform: 10/1000 μs

(3) SMF78A and below can withstand higher currents (to 200W for 10/1000 μs pulse), but V_C must be increased by approximately 5% ($I_{PP} = 200W/V_C$)

(4) All terms and symbols are consistent with ANSI/IEEE C62.35



Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified. $V_F = 3.5V$ at $I_F = 12A$ (uni-directional only)

Device Type	Device Marking Code	Breakdown Voltage $V_{(BR)}$ (V) (Min) ⁽¹⁾	Test Current at I_T (mA)	Stand-off Voltage V_{WM} (V)	Maximum Reverse Leakage at V_{WM} I_D (μA)	Maximum Peak Pulse Surge Current I_{PPM} (A) ^(2,3)	Maximum Clamping Voltage at I_{PPM} V_C (V)
SMF54A	RE	60.0	1.0	54	1.0	1.7	87.1
SMF58A	RG	64.4	1.0	58	1.0	1.6	93.6
SMF60A	RK	66.7	1.0	60	1.0	1.5	96.8
SMF64A	RM	71.1	1.0	64	1.0	1.5	103
SMF70A	RP	77.8	1.0	70	1.0	1.3	113
SMF75A	RR	83.3	1.0	75	1.0	1.2	121
SMF78A	RT	86.7	1.0	78	1.0	1.2	126
SMF85A	RV	94.4	1.0	85	1.0	1.1	137
SMF90A	RX	100	1.0	90	1.0	1.0	146
SMF100A	RZ	111	1.0	100	1.0	0.9	162
SMF110A	SE	122	1.0	110	1.0	0.8	177
SMF120A	SG	133	1.0	120	1.0	0.8	193
SMF130A	SK	144	1.0	130	1.0	0.7	209
SMF150A	SM	167	1.0	150	1.0	0.6	243
SMF160A	SP	178	1.0	160	1.0	0.6	259
SMF170A	SR	189	1.0	170	1.0	0.5	275
SMF188A	SS	209	1.0	188	1.0	0.5	328

Notes: (1) $V_{(BR)}$ measured after I_T applied for 300 μs square wave pulse or equivalent

(2) Surge current waveform: 10/1000 μs

(3) SMF78A and below can withstand higher currents (to 250W for 10/1000 μs pulse), but V_C must be increased by approximately 5% ($I_{PP} = 250W/V_C$)

(4) All terms and symbols are consistent with ANSI/IEEE C62.35