YENYO

SMF-A SERIES

Surface Mount Transient Voltage Suppressor

Working Voltage 5.0 to 58 V
Peak Pulse Power 200W

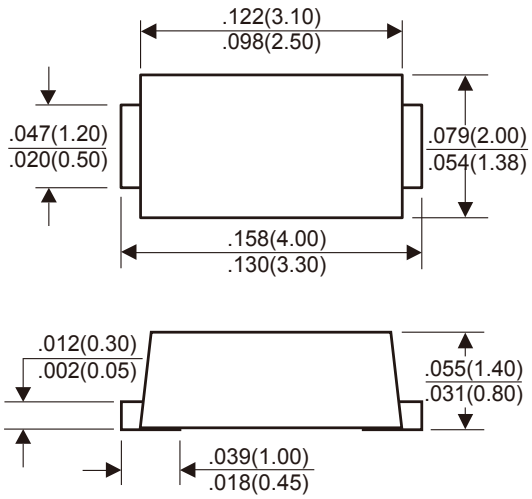
Features

- ✶ High reliability application and automotive grade AEC-Q101 qualified
- ✶ 200W peak pulse power capability at 10/1000μs waveform, repetition rate (duty cycles):0.01%
- ✶ Low leakage
- ✶ Excellent clamping capability
- ✶ Very fast response time
- ✶ RoHS compliant
- ✶ ESD Rating of Class 3 (>16 kV) per Human Body Model
- ✶ ESD Rating of Level 4 (8 kV Contact Discharge) per IEC61000-4-2
- ✶ EFT (Electrical Fast Transients) Rating of 40A per IEC61000-4-4

Mechanical Data

- ✶ Case: Molded plastic, SOD-123FL
- ✶ Epoxy: UL 94V-0 rate flame retardant
- ✶ Terminals: Solderable per MIL-STD-750, method 2026
- ✶ Polarity: Color band denotes cathode end
- ✶ Part no. with suffix "-A" means AEC-Q101 qualified

SOD-123FL



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND THERMAL CHARACTERISTICS

T_A = 25°C unless otherwise noted

PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation with a 10/1000μs waveform (Note 1,2)	P_{PPM}	200	W
Peak forward surge current, 8.3 ms single half sine-wave (Note 3)	I_{FSM}	20	A
Power dissipation on infinite heatsink at T_L=75°C	P_D	0.4	W
Maximum instantaneous forward voltage at 25A for unidirectional only	V_F	3.5	V
Typical thermal resistance junction to ambient	$R_{\theta JA}$	220	°C/W
Typical thermal resistance junction to lead	$R_{\theta JL}$	110	°C/W
Operating junction and storage temperature range	T_J , T_{STG}	-65 to +150	°C

Notes : (1) Non-repetitive current pulse, per Fig. 3 and derated above T_A=25°C per Fig. 2
(2) Mounted on copper pad area of 0.2" x 0.2" (5.0 x 5.0mm) to each terminal
(3) Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum

SMF-A SERIES

Electrical Characteristics(T_A=25°C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Device Marking Code		Breakdown Voltage $V_{BR}@I_T$			Maximum Reverse Leakage $I_R@V_{RWM}$ (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage $V_C@I_{PP}$ (V)
		Uni	Bi	Min (V)	Max (V)	I_T (mA)				
SMF5.0-A	SMF5.0C-A	FEA	KEA	6.40	7.00	10	400	5.0	21.74	9.2
SMF6.0-A	SMF6.0C-A	FGA	KGA	6.67	7.37	10	400	6.0	19.42	10.3
SMF6.5-A	SMF6.5C-A	FKA	KKA	7.22	7.98	10	250	6.5	17.86	11.2
SMF7.0-A	SMF7.0C-A	FMA	KMA	7.78	8.60	10	100	7.0	16.67	12.0
SMF7.5-A	SMF7.5C-A	FPA	KPA	8.33	9.21	1	50	7.5	15.50	12.9
SMF8.0-A	SMF8.0C-A	FRA	KRA	8.89	9.83	1	25	8.0	14.71	13.6
SMF8.5-A	SMF8.5C-A	FTA	KTA	9.44	10.4	1	10	8.5	13.89	14.4
SMF9.0-A	SMF9.0C-A	FVA	KVA	10.0	11.1	1	5	9.0	12.99	15.4
SMF10-A	SMF10C-A	FXA	KXA	11.1	12.3	1	2.5	10	11.76	17.0
SMF11-A	SMF11C-A	FZA	KZA	12.2	13.5	1	2.5	11	10.99	18.2
SMF12-A	SMF12C-A	HEA	LEA	13.3	14.7	1	2.5	12	10.05	19.9
SMF13-A	SMF13C-A	HGA	LGA	14.4	15.9	1	1	13	9.30	21.5
SMF14-A	SMF14C-A	HKA	LKA	15.6	17.2	1	1	14	8.62	23.2
SMF15-A	SMF15C-A	HMA	LMA	16.7	18.5	1	1	15	8.20	24.4
SMF16-A	SMF16C-A	HPA	LPA	17.8	19.7	1	1	16	7.69	26.0
SMF17-A	SMF17C-A	HRA	LRA	18.9	20.9	1	1	17	7.25	27.6
SMF18-A	SMF18C-A	HTA	LTA	20.0	22.1	1	1	18	6.85	29.2
SMF20-A	SMF20C-A	HVA	LVA	22.2	24.5	1	1	20	6.17	32.4
SMF22-A	SMF22C-A	HXA	LXA	24.4	26.9	1	1	22	5.63	35.5
SMF24-A	SMF24C-A	HZA	LZA	26.7	29.5	1	1	24	5.14	38.9
SMF26-A	SMF26C-A	JEA	MEA	28.9	31.9	1	1	26	4.75	42.1
SMF28-A	SMF28C-A	JGA	MGA	31.1	34.4	1	1	28	4.41	45.4
SMF30-A	SMF30C-A	JKA	MKA	33.3	36.8	1	1	30	4.13	48.4
SMF33-A	SMF33C-A	JMA	MMA	36.7	40.6	1	1	33	3.75	53.3
SMF36-A	SMF36C-A	JPA	MPA	40.0	44.2	1	1	36	3.44	58.1
SMF40-A	SMF40C-A	JRA	MRA	44.4	49.1	1	1	40	3.10	64.5
SMF43-A	SMF43C-A	JTA	MTA	47.8	52.8	1	1	43	2.88	69.4
SMF45-A	SMF45C-A	JVA	MVA	50.0	55.3	1	1	45	2.75	72.7
SMF48-A	SMF48C-A	JXA	MXA	53.3	58.9	1	1	48	2.58	77.4
SMF51-A	SMF51C-A	JZA	MZA	56.7	62.7	1	1	51	2.43	82.4
SMF54-A	SMF54C-A	XEA	NEA	60.0	66.3	1	1	54	2.30	87.1
SMF58-A	SMF58C-A	XGA	NGA	64.4	71.2	1	1	58	2.14	93.6

Suffix "A" denotes 5% tolerance device.

Add suffix "CA" after part number to specify Bi-directional devices.

For Bi-directional type having V_{RWM} of 10 volts and less, the I limit is double.

RATINGS AND CHARACTERISTICS CURVES

Fig.1 - Peak Pulse Power Rating Curve

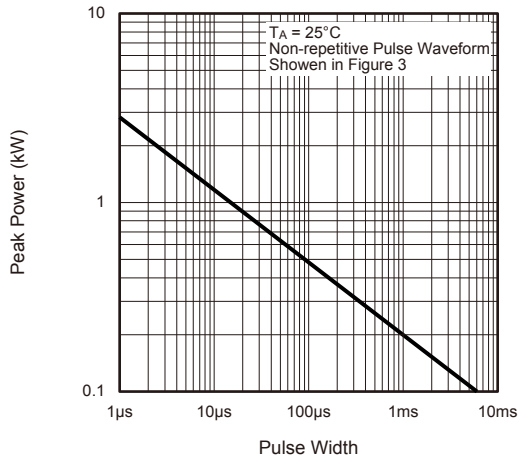


Fig.2 - Pulse Derating Curve

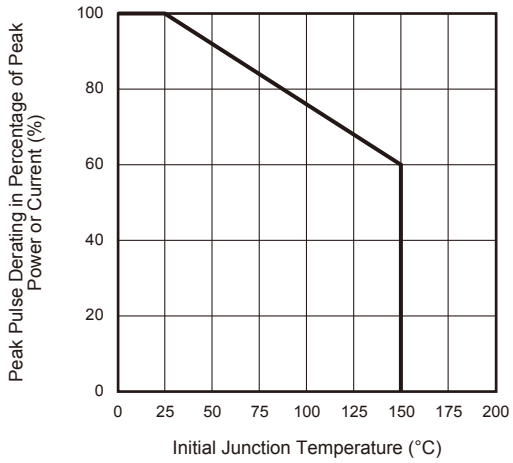


Fig.3 - Pulse Waveform

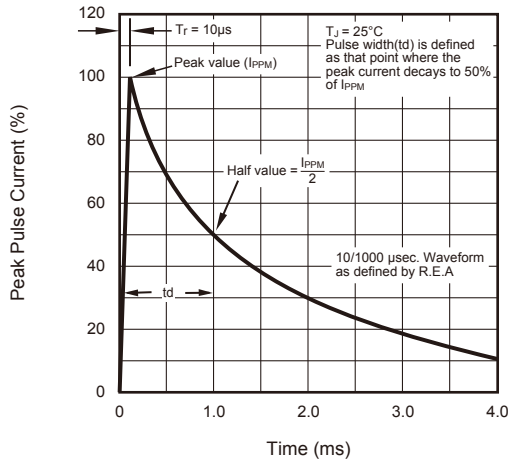


Fig.4 - Typical Junction Capacitance

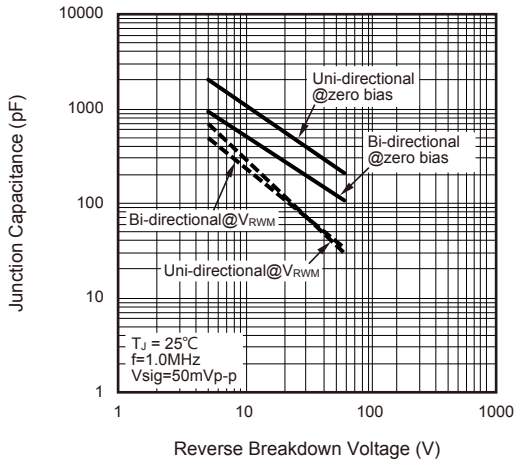


Fig.5 - Steady State Power Derating Curve

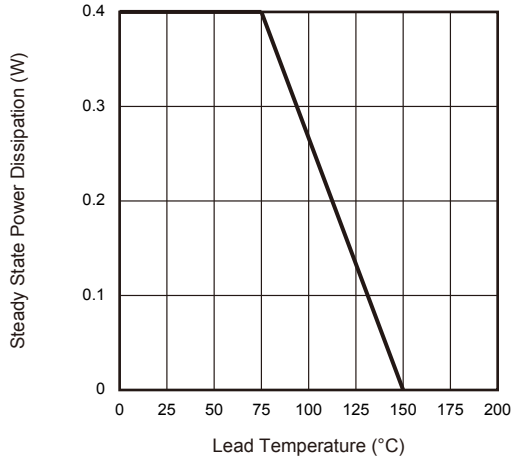


Fig.6 - Maximum Non-Repetitive Surge Current