

Reverse Voltage: 3.3V to 100V
Peak Pulse Power: 400 W

Surface Mount Transient Voltage Suppressors

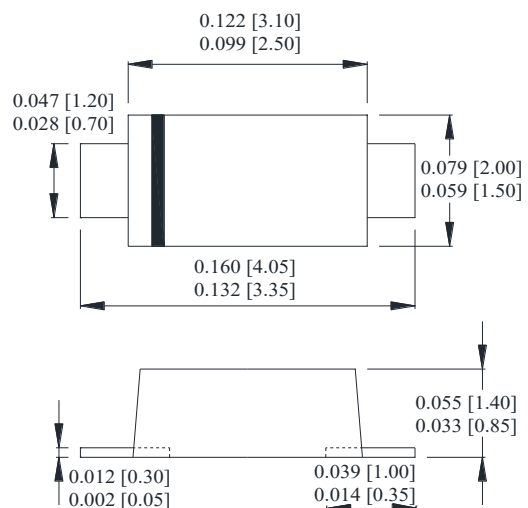
Features

- Glass passivated chip
- Maximum 400 W peak power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle):0.01 %
- AEC-Q101 qualified
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- RoHS compliant

Mechanical Data

- Case: Molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end
- Mounting position: Any

SOD-123FL



Dimensions : inch [mm]

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

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 μ s waveform ⁽¹⁾⁽³⁾	P_{PP}	400	W
Peak pulse current with a 10/1000 μ s waveform ⁽¹⁾	I_{PP}	See Next Table	A
Power dissipation on infinite heatsink at $T_L = 75^\circ\text{C}$	P_D	1.0	W
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only ⁽²⁾	I_{FSM}	30	A
Maximum instantaneous forward voltage at 25 A for unidirectional only	V_F	3.5	V
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Note:

(1)Non-repetitive current pulse per Fig.3 and derated above $T_A = 25^\circ\text{C}$ per Fig.1.

(2)Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

(3)TPSMF4L5.0A~TPSMF4L9.0A Peak Pulse Power Dissipation is 370W min, 400W typical @10/1000 μ s

Ratings and Characteristics Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

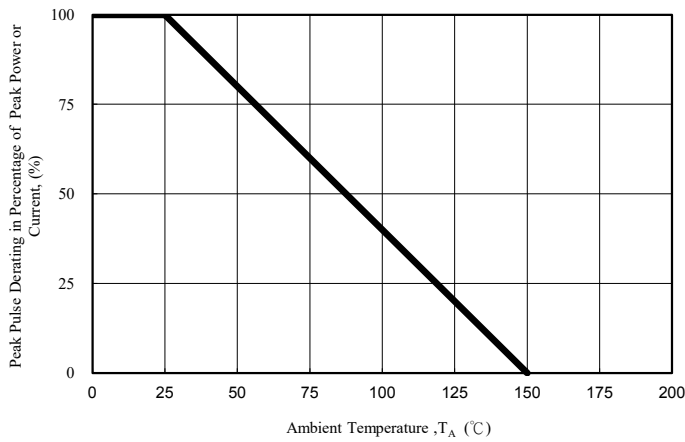


Fig. 1 - Pulse Derating Curve

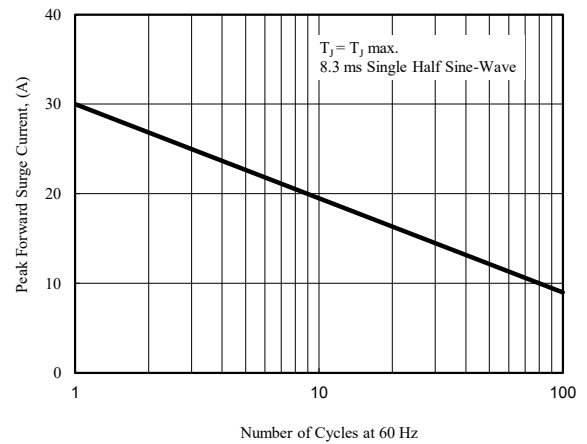


Fig. 2 - Maximum Non-Repetitive Surge Current

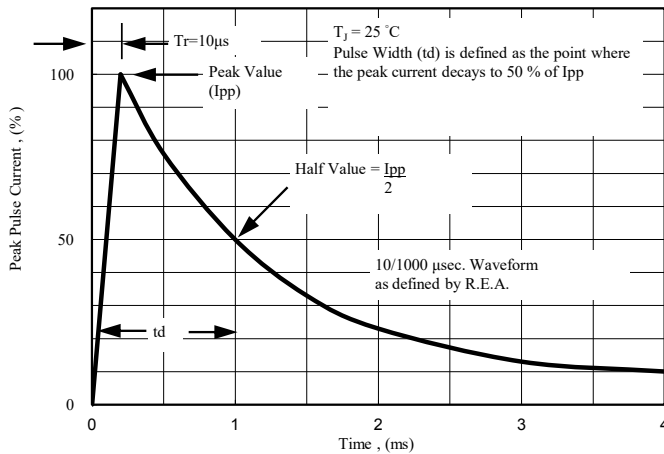


Fig. 3 - Pulse Waveform

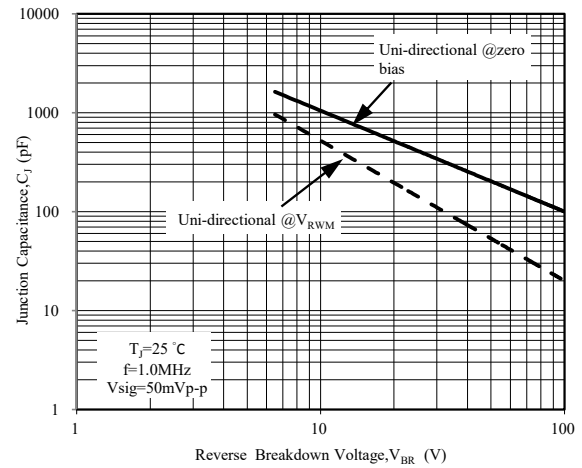


Fig. 4 - Typical Junction Capacitance

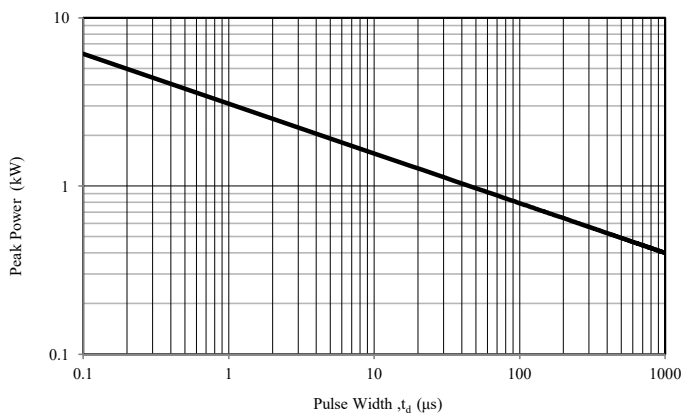


Fig. 5 - Steady State Power Derating Curve

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ 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)				
TPSMF4L3.3A	TPSMF4L3.3CA	A1A	AAA	5.44	6.50	10	30	3.3	47.10	8.5
TPSMF4L5.0A	TPSMF4L5.0CA	KEA	FEA	6.40	7.07	10	800	5.0	43.38	9.2
TPSMF4L6.0A	TPSMF4L6.0CA	KGA	FGA	6.67	7.37	10	800	6.0	38.83	10.3
TPSMF4L6.5A	TPSMF4L6.5CA	KKA	FKA	7.22	7.98	10	500	6.5	35.71	11.2
TPSMF4L7.0A	TPSMF4L7.0CA	KMA	FMA	7.78	8.60	10	200	7.0	33.33	12.0
TPSMF4L7.5A	TPSMF4L7.5CA	KPA	FPA	8.33	9.21	1	100	7.5	31.01	12.9
TPSMF4L8.0A	TPSMF4L8.0CA	KRA	FRA	8.89	9.83	1	50	8.0	29.41	13.6
TPSMF4L8.5A	TPSMF4L8.5CA	KTA	FTA	9.44	10.40	1	10	8.5	27.78	14.4
TPSMF4L9.0A	TPSMF4L9.0CA	KVA	FVA	10.00	11.10	1	5	9.0	25.97	15.4
TPSMF4L10A	TPSMF4L10CA	KXA	FXA	11.10	12.30	1	2.5	10.0	23.52	17.0
TPSMF4L11A	TPSMF4L11CA	KZA	HZA	12.20	13.50	1	2.5	11.0	21.98	18.2
TPSMF4L12A	TPSMF4L12CA	LEA	HEA	13.30	14.70	1	2.5	12.0	20.10	19.9
TPSMF4L13A	TPSMF4L13CA	LGA	HGA	14.40	15.90	1	1.0	13.0	18.60	20.0
TPSMF4L14A	TPSMF4L14CA	LKA	HKA	15.60	17.20	1	1.0	14.0	17.24	23.2
TPSMF4L15A	TPSMF4L15CA	LMA	HMA	16.70	18.50	1	1.0	15.0	16.40	24.4
TPSMF4L16A	TPSMF4L16CA	LPA	HPA	17.80	19.70	1	1.0	16.0	15.38	26.0
TPSMF4L17A	TPSMF4L17CA	LRA	HRA	18.90	20.90	1	1.0	17.0	14.50	27.6
TPSMF4L18A	TPSMF4L18CA	LTA	HTA	20.00	22.10	1	1.0	18.0	13.70	29.2
TPSMF4L19A	TPSMF4L19CA	LBA	HBA	21.10	23.30	1	1.0	19.0	13.08	30.6
TPSMF4L20A	TPSMF4L20CA	LVA	HVA	22.20	24.50	1	1.0	20.0	12.34	32.4
TPSMF4L22A	TPSMF4L22CA	LXA	HXA	24.40	26.90	1	1.0	22.0	11.26	35.5
TPSMF4L24A	TPSMF4L24CA	LZA	HZA	26.70	29.50	1	1.0	24.0	10.28	38.9
TPSMF4L26A	TPSMF4L26CA	MEA	JEA	28.90	31.90	1	1.0	26.0	9.50	42.1
TPSMF4L28A	TPSMF4L28CA	MGA	JGA	31.10	34.40	1	1.0	28.0	8.82	45.4
TPSMF4L30A	TPSMF4L30CA	MKA	JKA	33.30	36.80	1	1.0	30.0	8.26	48.4
TPSMF4L33A	TPSMF4L33CA	MMA	JMA	36.70	40.60	1	1.0	33.0	7.50	53.3
TPSMF4L36A	TPSMF4L36CA	MPA	JPA	40.00	44.20	1	1.0	36.0	6.88	58.1
TPSMF4L40A	TPSMF4L40CA	MRA	JRA	44.40	49.10	1	1.0	40.0	6.20	64.5
TPSMF4L43A	TPSMF4L43CA	MTA	JTA	47.80	52.80	1	1.0	43.0	5.76	69.4
TPSMF4L45A	TPSMF4L45CA	MVA	JVA	50.00	55.30	1	1.0	45.0	5.50	72.7
TPSMF4L48A	TPSMF4L48CA	MXA	JXA	53.30	58.90	1	1.0	48.0	5.16	77.4
TPSMF4L51A	TPSMF4L51CA	MZA	JZA	56.70	62.70	1	1.0	51.0	4.86	82.4
TPSMF4L54A	TPSMF4L54CA	NEA	XEA	60.00	66.30	1	1.0	54.0	4.60	87.1
TPSMF4L58A	TPSMF4L58CA	NGA	XGA	64.40	71.20	1	1.0	58.0	4.28	93.6
TPSMF4L60A	TPSMF4L60CA	NKA	XKA	66.70	73.70	1	1.0	60.0	4.14	96.8
TPSMF4L64A	TPSMF4L64CA	NMA	XMA	71.10	78.60	1	1.0	64.0	3.88	103.0
TPSMF4L70A	TPSMF4L70CA	NPA	XPA	77.80	86.00	1	1.0	70.0	3.54	113.0
TPSMF4L75A	TPSMF4L75CA	NRA	XRA	83.30	92.10	1	1.0	75.0	3.30	121.0
TPSMF4L78A	TPSMF4L78CA	NTA	XTA	86.70	95.80	1	1.0	78.0	3.18	126.0

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ 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)				
TPSMF4L80A	TPSMF4L80CA	NBA	XBA	88.80	97.60	1	1.0	80.0	3.10	129.0
TPSMF4L85A	TPSMF4L85CA	NVA	XVA	94.40	104.00	1	1.0	85.0	2.92	137.0
TPSMF4L90A	TPSMF4L90CA	NXA	XXA	100.00	111.00	1	1.0	90.0	2.74	146.0
TPSMF4L100A	TPSMF4L100CA	NZA	XZA	111.00	123.00	1	1.0	100.0	2.46	162.0

Note:

1. Suffix 'A' denotes 5% tolerance device.
2. Add suffix 'CA' after part number to specify Bi-directional devices.
3. For Bi-Directional devices having V_R of 10 volts and under, the I_R limit is double.