

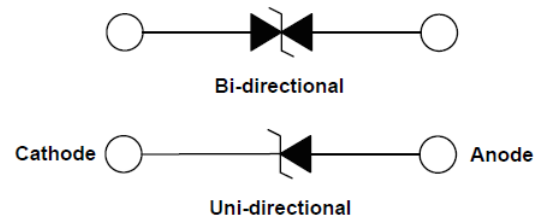
400W Transient Voltage Suppressors
Features

- Glass passivated chip.
- 400W peak pulse power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle):0.01%.
- IEC 61000-4-2 (ESD) \pm 30kV (air), \pm 30kV (contact)
- Low leakage.
- Uni and Bidirectional unit.
- Excellent clamping capability.
- Very fast response time.
- RoHS Compliant.

Mechanical Data

- Case : Epoxy, Molded
- Epoxy : UL 94V-0 rate flame retardant.
- Lead : Solderable per MIL-STD-750, method 2026.
- Polarity: Color band denotes cathode end.
- Moisture Sensitivity: Level 1 per J-STD-020.

SOD-123S

Bi-directional
Uni-directional

Pin Configuration
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⁾	P _{PP}	400	W
Peak pulse current with a 10/1000 μ s waveform ⁽¹⁾	I _{PP}	See Next Table	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	\pm 30	KV
ESD per IEC 61000-4-2 (Contact)		\pm 30	KV
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 ⁽³⁾	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 for unidirectional device only.
 (3) SMF4L5.0A-T~SMF4L9.0A-T Peak Pulse Power Dissipation is 370W min, 400W typical @10/1000 μ s.

Electrical Characteristics (T _A = 25°C Unless otherwise noted)										
Part Number (Uni)	Part Number (Bi)	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 Current I _{PP} (A)	Maximum Clamping Voltage V _C @I _{PP} (V)
		Uni	Bi	Min. (V)	Max. (V)	I _T (mA)				
SMF4L5.0A-T	SMF4L5.0CA-T	AE	WE	6.4	7	10	800/1600	5	43.48	9.2
SMF4L6.0A-T	SMF4L6.0CA-T	AG	WG	6.67	7.37	10	800/1600	6	38.83	10.3
SMF4L6.5A-T	SMF4L6.5CA-T	AK	WK	7.22	7.98	10	500/1000	6.5	35.71	11.2
SMF4L7.0A-T	SMF4L7.0CA-T	AM	WM	7.78	8.6	10	200/400	7	33.33	12
SMF4L7.5A-T	SMF4L7.5CA-T	AP	WP	8.33	9.21	1	100/200	7.5	31.01	12.9
SMF4L8.0A-T	SMF4L8.0CA-T	AR	WR	8.89	9.83	1	50/100	8	29.41	13.6
SMF4L8.5A-T	SMF4L8.5CA-T	AT	WT	9.44	10.4	1	10/20	8.5	27.78	14.4
SMF4L9.0A-T	SMF4L9.0CA-T	AV	WV	10	11.1	1	5	9	25.97	15.4
SMF4L10A-T	SMF4L10CA-T	AX	WX	11.1	12.3	1	5	10	23.53	17
SMF4L11A-T	SMF4L11CA-T	AZ	WZ	12.2	13.5	1	1	11	21.98	18.2
SMF4L12A-T	SMF4L12CA-T	BE	XE	13.3	14.7	1	1	12	20.1	19.9
SMF4L13A-T	SMF4L13CA-T	BG	XG	14.4	15.9	1	1	13	18.6	21.5
SMF4L14A-T	SMF4L14CA-T	BK	XK	15.6	17.2	1	1	14	17.24	23.2
SMF4L15A-T	SMF4L15CA-T	BM	XM	16.7	18.5	1	1	15	16.39	24.4
SMF4L16A-T	SMF4L16CA-T	BP	XP	17.8	19.7	1	1	16	15.38	26
SMF4L17A-T	SMF4L17CA-T	BR	XR	18.9	20.9	1	1	17	14.49	27.6
SMF4L18A-T	SMF4L18CA-T	BT	XT	20	22.1	1	1	18	13.7	29.2
SMF4L19A-T	SMF4L19CA-T	BB	XB	21.1	23.3	1	1	19	13	30.8
SMF4L20A-T	SMF4L20CA-T	BV	XV	22.2	24.5	1	1	20	12.35	32.4
SMF4L22A-T	SMF4L22CA-T	BX	XX	24.4	26.9	1	1	22	11.27	35.5
SMF4L24A-T	SMF4L24CA-T	BZ	XZ	26.7	29.5	1	1	24	10.28	38.9
SMF4L26A-T	SMF4L26CA-T	CE	YE	28.9	31.9	1	1	26	9.5	42.1
SMF4L28A-T	SMF4L28CA-T	CG	YG	31.1	34.4	1	1	28	8.81	45.4
SMF4L30A-T	SMF4L30CA-T	CK	YK	33.3	36.8	1	1	30	8.26	48.4
SMF4L33A-T	SMF4L33CA-T	CM	YM	36.7	40.6	1	1	33	7.5	53.3
SMF4L36A-T	SMF4L36CA-T	CP	YP	40	44.2	1	1	36	6.88	58.1
SMF4L40A-T	SMF4L40CA-T	CR	YR	44.4	49.1	1	1	40	6.2	64.5
SMF4L43A-T	SMF4L43CA-T	CT	YT	47.8	52.8	1	1	43	5.76	69.4
SMF4L45A-T	SMF4L45CA-T	CV	YV	50	55.3	1	1	45	5.5	72.7
SMF4L48A-T	SMF4L48CA-T	CX	YX	53.3	58.9	1	1	48	5.17	77.4
SMF4L51A-T	SMF4L51CA-T	CZ	YZ	56.7	62.7	1	1	51	4.85	82.4
SMF4L54A-T	SMF4L54CA-T	RE	ZE	60	66.3	1	1	54	4.59	87.1
SMF4L58A-T	SMF4L58CA-T	RG	ZG	64.4	71.2	1	1	58	4.27	93.6

Electrical Characteristics (T _A = 25°C Unless otherwise noted)										
Part Number (Uni)	Part Number (Bi)	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 Current I _{PP} (A)	Maximum Clamping Voltage V _C @I _{PP} (V)
		Uni	Bi	Min. (V)	Max. (V)	I _T (mA)				
SMF4L60A-T	SMF4L60CA-T	RK	ZK	66.7	73.7	1	1	60	4.13	96.8
SMF4L64A-T	SMF4L64CA-T	RM	ZM	71.1	78.6	1	1	64	3.88	103
SMF4L70A-T	SMF4L70CA-T	RP	ZP	77.8	86	1	1	70	3.54	113
SMF4L75A-T	SMF4L75CA-T	RR	ZR	83.3	92.1	1	1	75	3.31	121
SMF4L78A-T	SMF4L78CA-T	RT	ZT	86.7	95.8	1	1	78	3.17	126
SMF4L80A-T	SMF4L80CA-T	RB	ZB	88.8	97.6	1	1	80	3.09	129.6
SMF4L85A-T	SMF4L85CA-T	RV	ZV	94.4	104	1	1	85	2.92	137

Typical Performance Characteristics ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

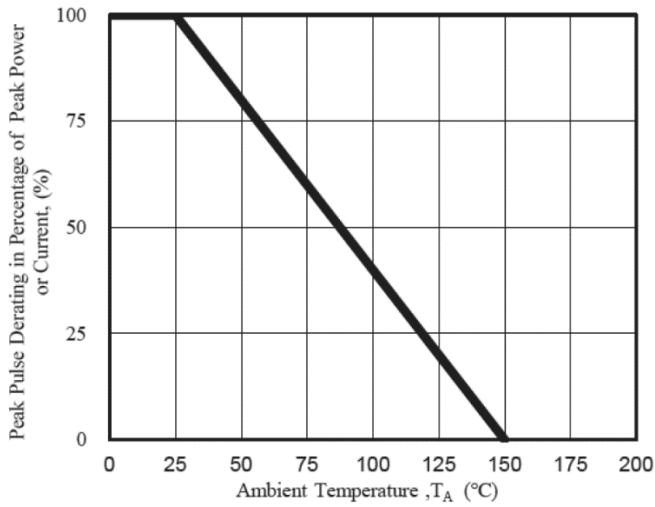


Fig 1. Peak Derating Curve

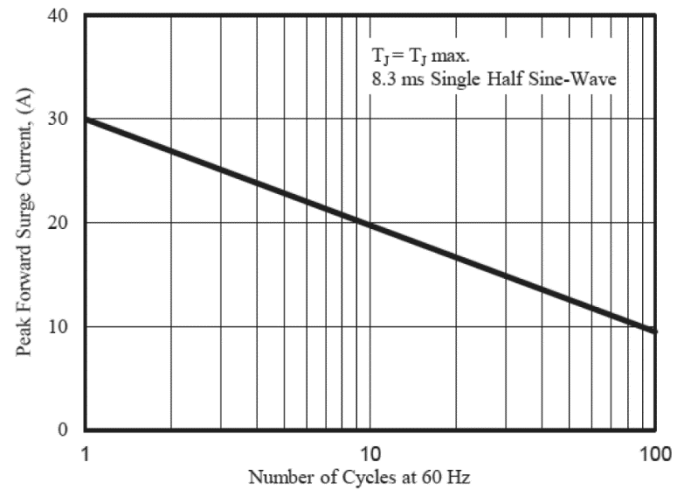


Fig 2. Max. Non-Repetitive

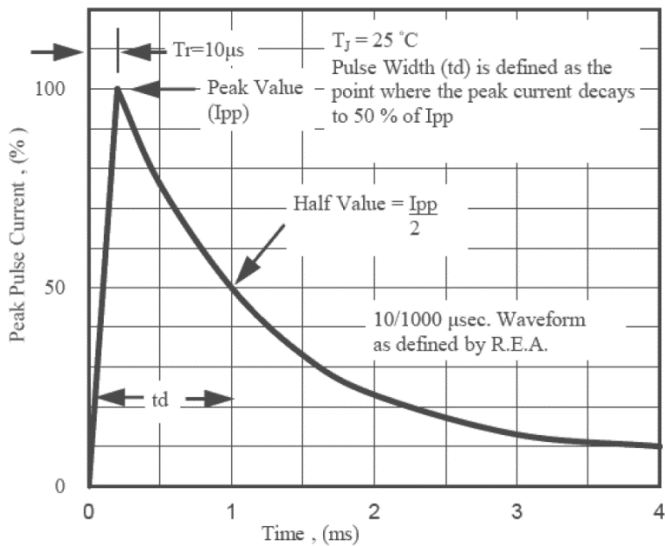


Fig 3. Pulse Waveform

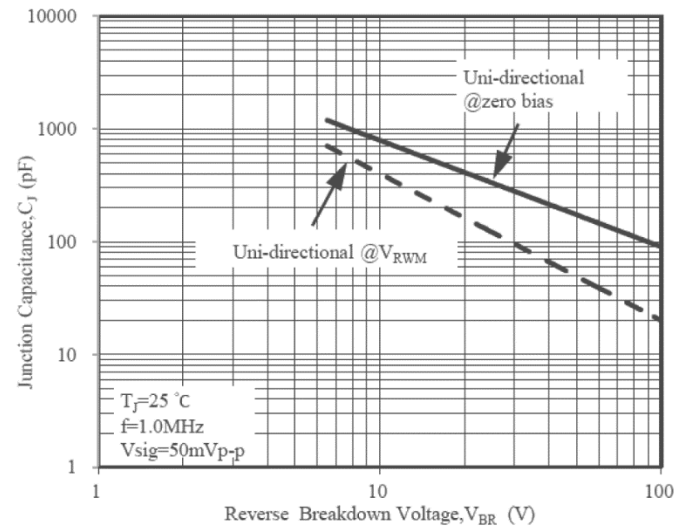


Fig 4. Typical Junction Capacitance

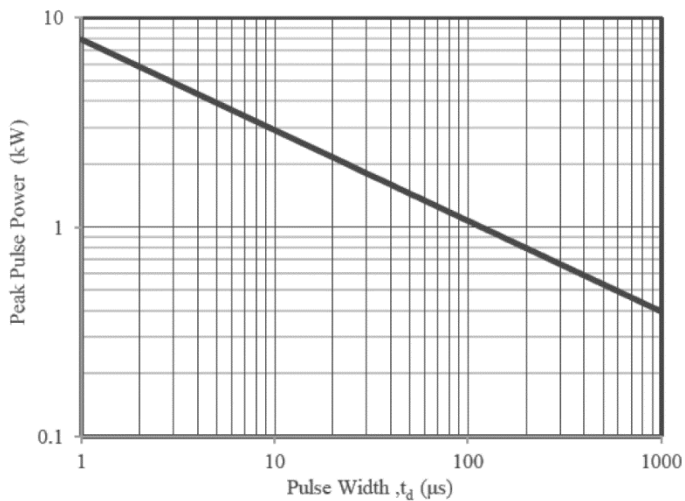


Fig 54. Steady State Power Derating Curve

Package Outline Drawing

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.60	2.00	0.063	0.079
B	3.55	3.85	0.140	0.152
C	0.80	1.00	0.031	0.039
D	1.00	1.40	0.039	0.055
E	0.60	1.00	0.024	0.039
F	0.12	0.20	0.005	0.008

Suggested PAD Layout

Symbol	SOD-123S	
	Millimeters	Inches
A	3.47	0.137
B	0.78	0.031
C	1.22	0.048
D	4.25	0.167
E	2.70	0.106

Ordering information

Part Number	Package	Base qty	Reel Size	Delivery mode
		(pcs)	(inch)	
SMF4Lxx(A)CA-T Series	SOD-123S	3,000	7	Tape and reel