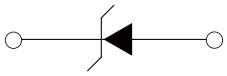
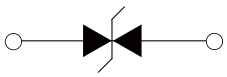
FEATURES

- Low profile package
- Ideal for automated placement
- 400 Watt peak pulse power capability with a 10/1000μs waveform
- For surface mounted applicatons to optimize board space
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance

SOD-123FL



Uni-directionnal



Bi-directionnal

APPLICATIONS

- Power supply protection
- Automotive application
- Industrial application
- Power management

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUMRATINGS (T_A=25°C)

Parameter	Symbo	Value	Unit
Peak Pulse Power Dissipation on 10/1000us waveform (Note1)	P_{PPM}	400	Watts
Steady State Power Dissipation at T_L=75°C	P_D	2.8	Watts

Notes : 1.Non-repetitive current pulse,T_A=25°C.
2.8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum

THERMAL CONSIDERATIONS

Parameter	Symbol	Value	Unit
Operating Junction Temperature	T_J	-55 to +150	℃
Storage Temperature Range	T_{STG}	-55 to +150	℃
Junction to Ambient on printed circuit	$R_{\theta JA}$	220	℃/W

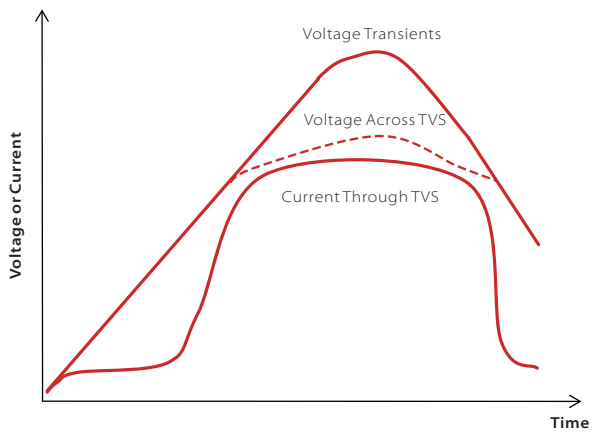
ELECTRICAL CHARACTERISTICS (T_A=25℃)

Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage Min.@I_T	Breakdown Voltage Max.@I_T	Test Current	Maximum Clamping Voltage @I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RWM}
Uni-Polar	Bi-Polar	Uni	Bi	V_{RWM}(V)	V_{BR}(V)	V_{BR}(V)	I_T(mA)	V_C(V)	I_{PP}(A)	I_R(uA)
SMF4L5.0A	SMF4L5.0CA	KE	WE	5.0	6.40	7.00	10	9.2	43.5	800
SMF4L6.0A	SMF4L6.0CA	KG	WG	6.0	6.67	7.37	10	10.3	38.8	800
SMF4L6.5A	SMF4L6.5CA	KK	WK	6.5	7.22	7.98	10	11.2	35.7	500
SMF4L7.0A	SMF4L7.0CA	KM	WM	7.0	7.78	8.60	10	12.0	33.3	200
SMF4L7.5A	SMF4L7.5CA	KP	WP	7.5	8.33	9.21	1	12.9	31.0	100
SMF4L8.0A	SMF4L8.0CA	KR	WR	8.0	8.89	9.83	1	13.6	29.4	50
SMF4L8.5A	SMF4L8.5CA	KT	WT	8.5	9.44	10.40	1	14.4	27.8	20
SMF4L9.0A	SMF4L9.0CA	KV	WV	9.0	10.00	11.10	1	15.4	26.0	10
SMF4L10A	SMF4L10CA	KX	WX	10.0	11.10	12.30	1	17.0	23.5	5
SMF4L11A	SMF4L11CA	KZ	WZ	11.0	12.20	13.50	1	18.2	22.0	1
SMF4L12A	SMF4L12CA	LE	XE	12.0	13.30	14.70	1	19.9	20.1	1
SMF4L13A	SMF4L13CA	LG	XG	13.0	14.40	15.90	1	21.5	18.6	1
SMF4L14A	SMF4L14CA	LK	XK	14.0	15.60	17.20	1	23.2	17.2	1
SMF4L15A	SMF4L15CA	LM	XM	15.0	16.70	18.50	1	24.4	16.4	1
SMF4L16A	SMF4L16CA	LP	XP	16.0	17.80	19.70	1	26.0	15.4	1
SMF4L17A	SMF4L17CA	LR	XR	17.0	18.90	20.90	1	27.6	14.5	1
SMF4L18A	SMF4L18CA	LT	XT	18.0	20.00	22.10	1	29.2	13.7	1
SMF4L20A	SMF4L20CA	LV	XV	20.0	22.20	24.50	1	32.4	12.3	1
SMF4L22A	SMF4L22CA	LX	XX	22.0	24.40	26.90	1	35.5	11.3	1
SMF4L24A	SMF4L24CA	LZ	XZ	24.0	26.70	29.50	1	38.9	10.3	1
SMF4L26A	SMF4L26CA	ME	YE	26.0	28.90	31.90	1	42.1	9.5	1
SMF4L28A	SMF4L28CA	MG	YG	28.0	31.10	34.40	1	45.4	8.8	1
SMF4L30A	SMF4L30CA	MK	YK	30.0	33.30	36.80	1	48.4	8.3	1
SMF4L33A	SMF4L33CA	MM	YM	33.0	36.70	40.60	1	53.3	7.5	1
SMF4L36A	SMF4L36CA	MP	YP	36.0	40.00	44.20	1	58.1	6.9	1
SMF4L40A	SMF4L40CA	MR	YR	40.0	44.40	49.10	1	64.5	6.2	1
SMF4L43A	SMF4L43CA	MT	YT	43.0	47.80	52.80	1	69.4	5.8	1
SMF4L45A	SMF4L45CA	MV	YV	45.0	50.00	55.30	1	72.7	5.5	1
SMF4L48A	SMF4L48CA	MX	YX	48.0	53.30	58.90	1	77.4	5.2	1
SMF4L51A	SMF4L51CA	MZ	YZ	51.0	56.70	62.70	1	82.4	4.9	1
SMF4L54A	SMF4L54CA	NE	ZE	54.0	60.00	66.30	1	87.1	4.6	1
SMF4L58A	SMF4L58CA	NG	ZG	58.0	64.40	71.20	1	93.6	4.3	1

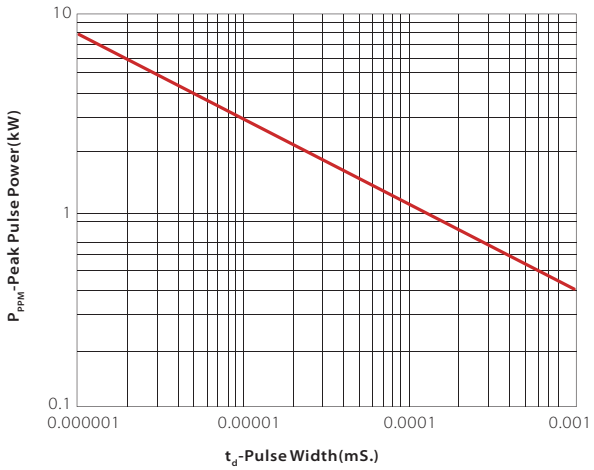
Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage Min.@I_T	Breakdown Voltage Max.@I_T	Test Current	Maximum Clamping Voltage @I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RWM}
Uni-Polar	**Bi-Polar**	**Uni**	**Bi**	**V_{RWM}(V)**	**V_{BR}(V)**	**V_{BR}(V)**	**I_T(mA)**	**V_C(V)**	**I_{PP}(A)**	**I_R(uA)**
SMF4L60A	SMF4L60CA	NK	ZK	60.0	66.70	73.70	1	96.8	4.1	1
SMF4L64A	SMF4L64CA	NK	ZK	60.0	66.70	73.70	1	96.8	4.1	1
SMF4L70A	SMF4L70CA	NP	ZP	70.0	77.80	86.00	1	113.0	3.5	1
SMF4L75A	SMF4L75CA	NR	ZR	75.0	83.30	92.10	1	121.0	3.3	1
SMF4L78A	SMF4L78CA	NT	ZT	78.0	86.70	95.80	1	126.0	3.2	1
SMF4L85A	SMF4L85CA	NV	ZV	85.0	94.40	104.00	1	137.0	2.9	1
SMF4L90A	SMF4L90CA	NX	ZX	90.0	100.00	111.00	1	146.0	2.7	1
SMF4L100A	SMF4L100CA	NZ	ZZ	100.0	111.00	123.00	1	162.0	2.5	1
SMF4L110A	SMF4L110CA	PE	VE	110.0	122.00	135.00	1	177.0	2.3	1
SMF4L120A	SMF4L120CA	PG	VG	120.0	133.00	147.00	1	193.0	2.1	1
SMF4L130A	SMF4L130CA	PK	VK	130.0	144.00	159.00	1	209.0	1.9	1
SMF4L150A	SMF4L150CA	PM	VM	150.0	167.00	185.00	1	243.0	1.6	1
SMF4L160A	SMF4L160CA	PP	VP	160.0	178.00	197.00	1	259.0	1.5	1
SMF4L170A	SMF4L170CA	PR	VR	170.0	189.00	209.00	1	275.0	1.5	1

CHARACTERISTIC CURVES

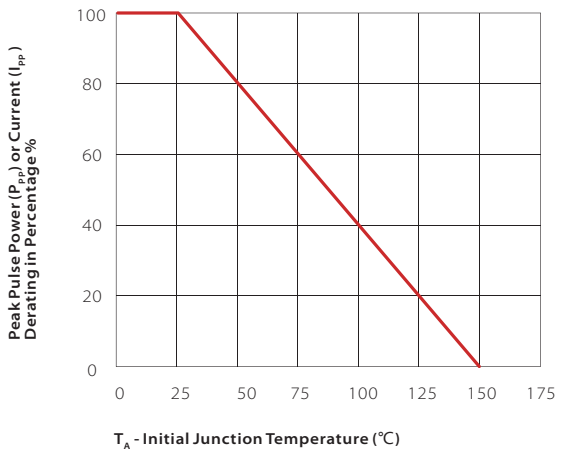
TVS Transients Clamping Waveform



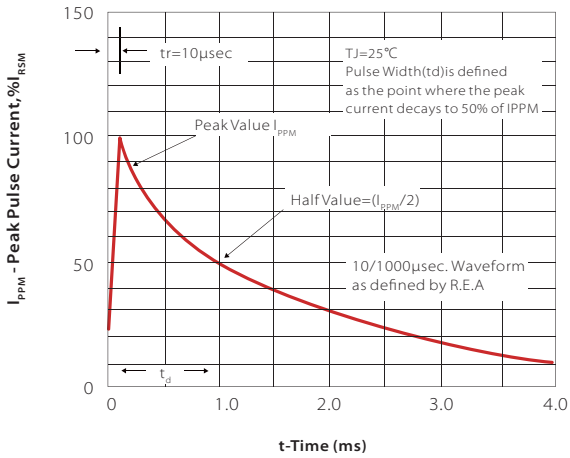
Peak Pulse Power Rating Curve



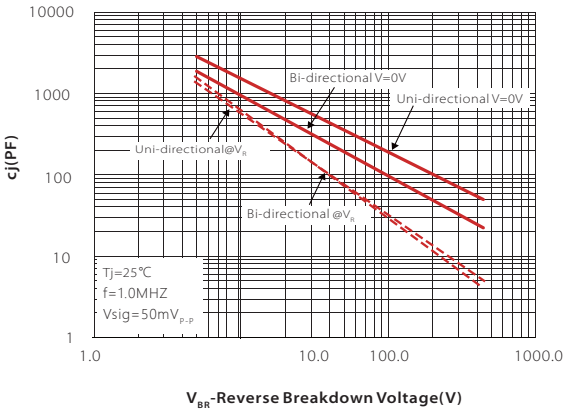
Pulse Derating Curve



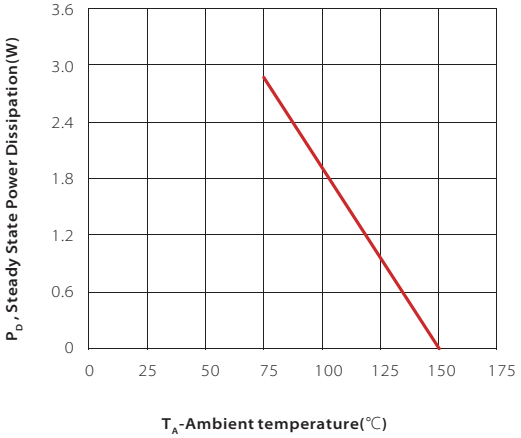
Pulse Waveform



Typical Junction Capacitance

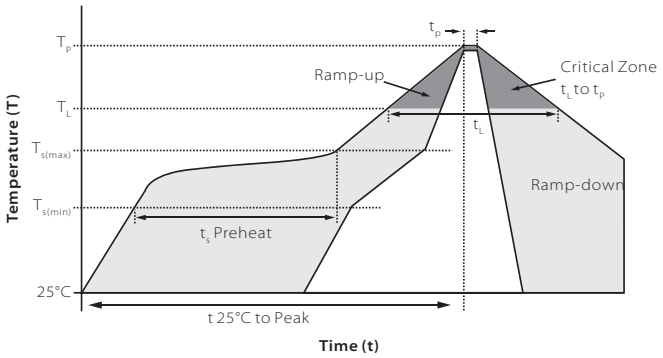


Steady State Power Dissipaton Deraiting Curve

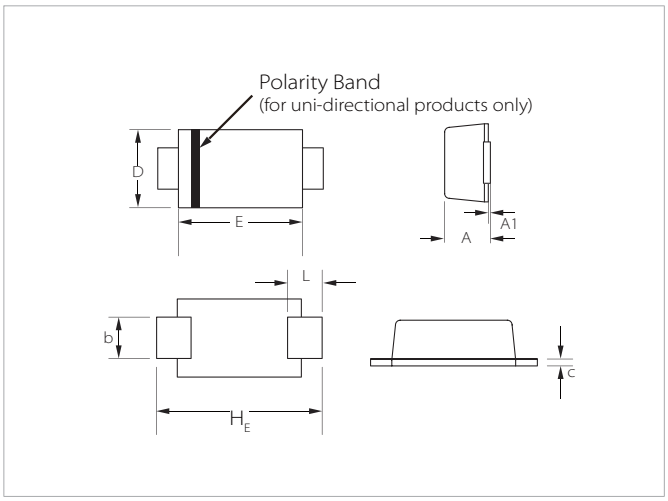


SOLDERING PARAMETERS

Reflow Condition		Lead–free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C

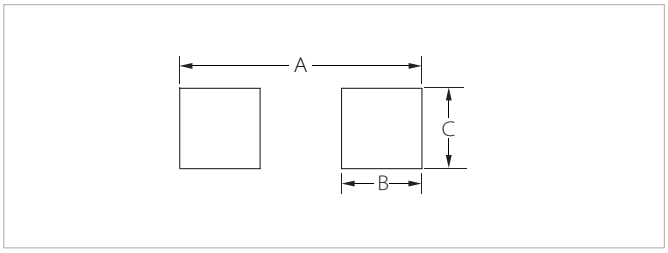


SOD-123FL PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.95	1.45	0.037	0.057
A1	0.00	0.10	0.000	0.004
b	0.70	1.20	0.028	0.047
c	0.05	0.30	0.002	0.012
D	1.50	2.00	0.059	0.079
E	2.50	2.90	0.098	0.114
L	0.35	0.90	0.014	0.035
H_E	3.40	3.90	0.134	0.154

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
A	4.20	0.165
B	1.50	0.059
C	1.20	0.047

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SMF4Lxx(C)A	SOD-123FL	3000PCS	7″

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