

Transient Voltage Suresor

Working Peak Reverse Voltage: 5.0 to 190 Volts

Power Dissipation: 200Watts

RoHS Device

Halogen Free

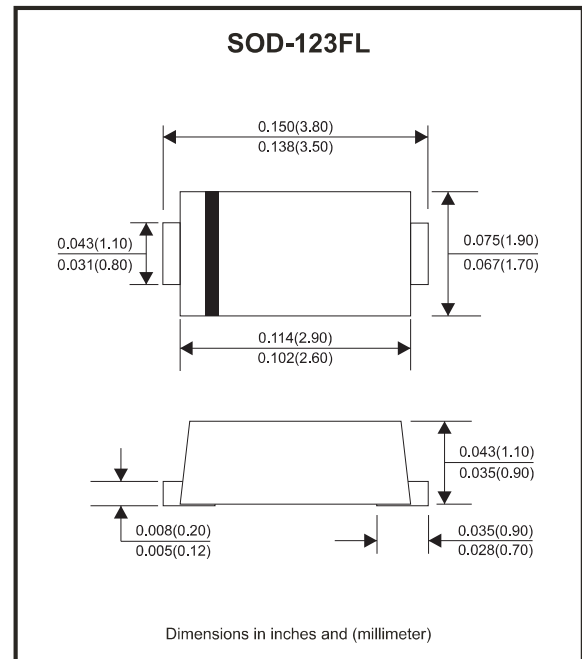


Features

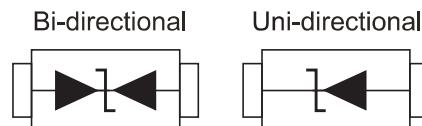
- Glass passivated chip.
- Low leakage current.
- 200W peak pulse power capility with a 10/1000us waveform,repertive rate (duty cycle):0.01%.
- Uni and bidirectional unit.
- Excellent clamping capability.
- Very fast response time.

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 except bipolar.
- Mounting position: Any.
- Weight: 0.016 grams(approx.).



Circuit Diagram



Maximum Rating and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Parameter	Symbol	Value	Unit
Peak power dissipation at 10/1000μs waveform (Note 1)	P _{PP}	200	W
Peak power dissipation at 8/20μs waveform (Note 1)	P _{PP}	1000	W
Peak pulse current with a 10/1000μs waveform (Note 1)	I _{PP}	See next table	A
Power dissipation on infinite heatsink at T _L = 75°C	P _D	0.4	W
Peak forward surge current, 8.3ms single half sone-wave undiresctional only (Note 2)	I _{FSM}	20	A
Max.instantaneous forward voltage at 25A for undiresctional only	V _F	3.5	V
Operating junction and storage temperature range	T _J ,T _{STG}	-55 to +150	°C

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above T_A=25°C per Fig.1
2. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.

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Electrical Characteristics (at TA=25°C, unless otherwise specified)

Part No	Absolute Maximum Rating (Ta=25°C)				V _C (Max.) @ IPP	I _{PP} (Max.) @ 10/1000us	I _R (Max.) @ V _{RWM}	Marking Code	
	V _{RWM}	V _{BR} Min.	V _{BR} Max.	I _T					
	(V)	(V)	(V)	(mA)	(V)	(A)	(uA)	Uni	Bi
SMF5.0(C)A	5.0	6.40	7.00	10	9.20	21.74	400	FE	KE
SMF6.0(C)A	6.0	6.67	7.37	10	10.3	19.42	400	FG	KG
SMF6.5(C)A	6.5	7.22	7.98	10	11.2	17.86	250	FK	KK
SMF7.0(C)A	7.0	7.78	8.60	10	12.0	16.67	100	FM	KM
SMF7.5(C)A	7.5	8.33	9.21	1	12.9	15.50	50	FP	KP
SMF8.0(C)A	8.0	8.89	9.83	1	13.6	14.71	25	FR	KR
SMF8.5(C)A	8.5	9.44	10.40	1	14.4	13.89	10	FT	KT
SMF9.0(C)A	9.0	10.00	11.10	1	15.4	12.99	5	FV	KV
SMF10(C)A	10.0	11.10	12.30	1	17.0	11.76	2.5	FX	KX
SMF11(C)A	11.0	12.20	13.50	1	18.2	10.99	2.5	FZ	KZ
SMF12(C)A	12.0	13.30	14.70	1	19.9	10.05	2.5	HE	LE
SMF13(C)A	13.0	14.40	15.90	1	21.5	9.30	1	HG	LG
SMF14(C)A	14.0	15.60	17.20	1	23.2	8.62	1	HK	LK
SMF15(C)A	15.0	16.70	18.50	1	24.4	8.20	1	HM	LM
SMF16(C)A	16.0	17.80	19.70	1	26.0	7.69	1	HP	LP
SMF17(C)A	17.0	18.90	20.90	1	27.6	7.25	1	HR	LR
SMF18(C)A	18.0	20.00	22.10	1	29.2	6.85	1	HT	LT
SMF19(C)A	19.0	21.10	23.30	1	30.6	6.54	1	HB	LB
SMF20(C)A	20.0	22.20	24.50	1	32.4	6.17	1	HV	LV
SMF22(C)A	22.0	24.40	26.90	1	35.5	5.63	1	HX	LX
SMF24(C)A	24.0	26.70	29.50	1	38.9	5.14	1	HZ	LZ
SMF26(C)A	26.0	28.90	31.90	1	42.1	4.75	1	JE	ME
SMF28(C)A	28.0	31.10	34.40	1	45.4	4.41	1	JG	MG
SMF30(C)A	30.0	33.30	36.80	1	48.4	4.13	1	JK	MK
SMF33(C)A	33.0	36.70	40.60	1	53.3	3.75	1	JM	MM
SMF36(C)A	36.0	40.00	44.20	1	58.1	3.44	1	JP	MP
SMF40(C)A	40.0	44.40	49.10	1	64.5	3.10	1	JR	MR
SMF43(C)A	43.0	47.80	52.80	1	69.4	2.88	1	JT	MT
SMF45(C)A	45.0	50.00	55.30	1	72.7	2.75	1	JV	MV
SMF48(C)A	48.0	53.30	58.90	1	77.4	2.58	1	JX	MX
SMF51(C)A	51.0	56.70	62.70	1	82.4	2.43	1	JZ	MZ
SMF54(C)A	54.0	60.00	66.30	1	87.1	2.30	1	XE	NE
SMF58(C)A	58.0	64.40	71.20	1	93.6	2.14	1	XG	NG
SMF60(C)A	60.0	66.70	73.70	1	96.8	2.07	1	XK	NK
SMF64(C)A	64.0	71.10	78.60	1	103.0	1.94	1	XM	NM
SMF70(C)A	70.0	77.80	86.00	1	113.0	1.77	1	XP	NP
SMF75(C)A	75.0	83.30	92.10	1	121.0	1.65	1	XR	NR
SMF78(C)A	78.0	86.70	95.80	1	126.0	1.59	1	XT	NT
SMF80(C)A	80.0	88.80	97.60	1	129.0	1.55	1	XB	NB
SMF85(C)A	85.0	94.40	104.00	1	137.0	1.46	1	XV	NV
SMF90(C)A	90.0	100.00	111.00	1	146.0	1.37	1	XX	NX
SMF100(C)A	100.0	111.00	123.00	1	162.0	1.23	1	XZ	NZ
SMF110(C)A	110.0	122.00	135.00	1	177.0	1.13	1	TE	PE
SMF120(C)A	120.0	133.00	147.00	1	193.0	1.04	1	TG	PG
SMF130(C)A	130.0	144.00	159.00	1	209.0	0.96	1	TK	PK
SMF140(C)A	140.0	155.00	171.00	1	224.0	0.89	1	TB	PB
SMF150(C)A	150.0	167.00	185.00	1	243.0	0.82	1	TM	PM
SMF160(C)A	160.0	178.00	197.00	1	259.0	0.77	1	TP	PP
SMF170(C)A	170.0	189.00	209.00	1	275.0	0.73	1	TR	PR
SMF180(C)A	180.0	200.00	220.00	1	292.0	0.68	1	TT	PT
SMF190(C)A	190.0	211.00	232.00	1	308.0	0.65	1	TV	PV

Notes:

1. Suffix C after part number to specify bi-directional devices.
2. For Bi-Directional devices having V_R of 10 volts and under, the I_R limit is double.

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Rating and Characteristic Curves (SMF5.0(C)A THRU SMF190(C)A)

Fig. 1 - Pulse Derating Curve

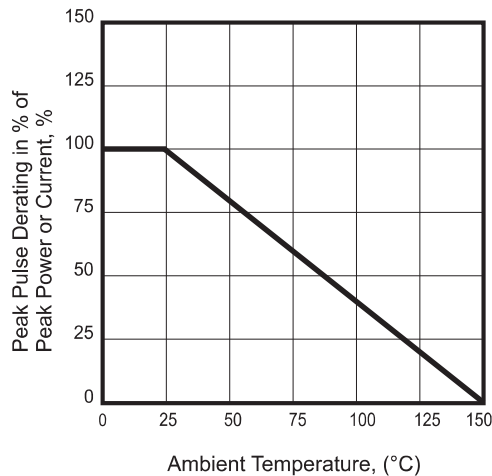


Fig.2 - Steady State Power Derating Curve

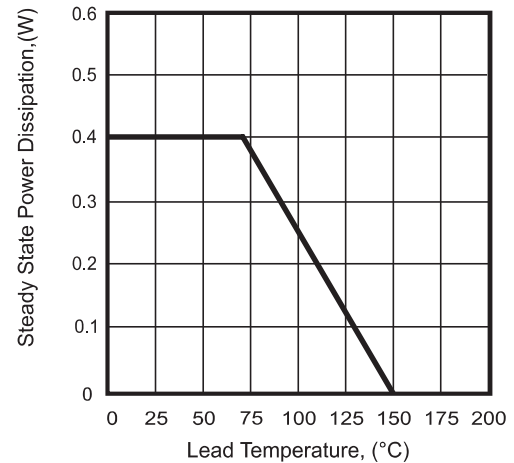


Fig. 3 - Pulse Waveform

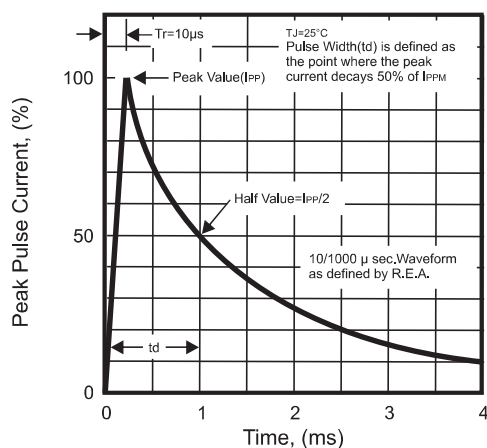


Fig. 4 - Peak Pulse Power Rating Curve

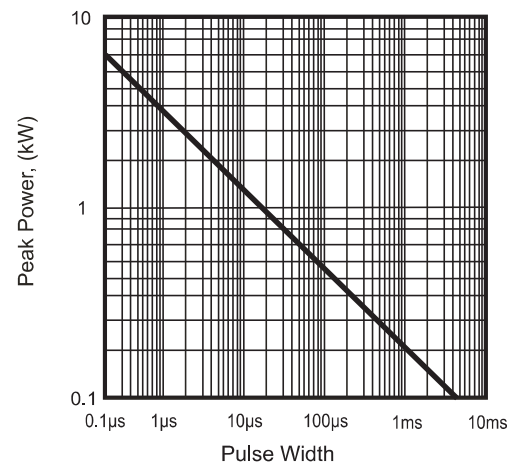


Fig. 5 - Maximum Non-Repetitive Surge Current

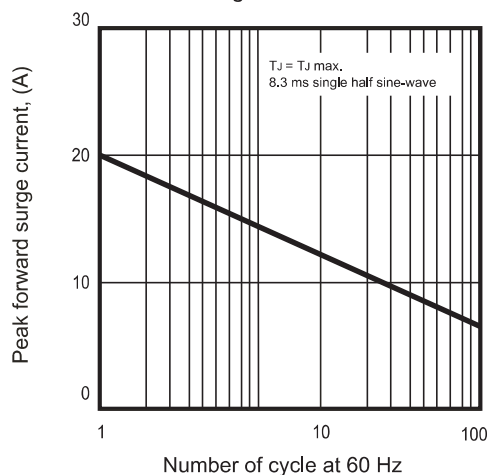
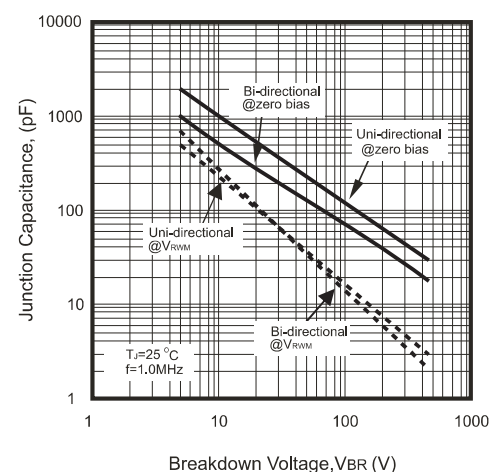


Fig.6 - Typical Junction Capacitance

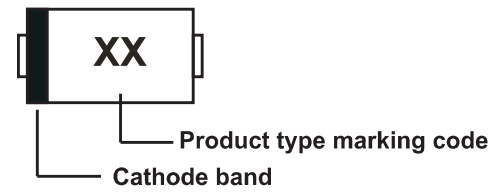


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Marking Code

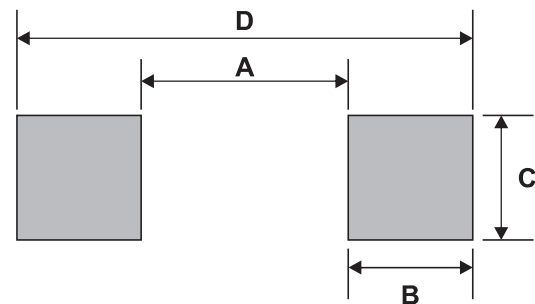
Part Number	Marking Code
SMF - Series	See Page 2



xx = Marking code (See Page 2)

Suggested PAD Layout

SIZE	SOD-123FL	
	(mm)	(inch)
A	2.00	0.079
B	1.20	0.047
C	1.20	0.047
D	4.40	0.173

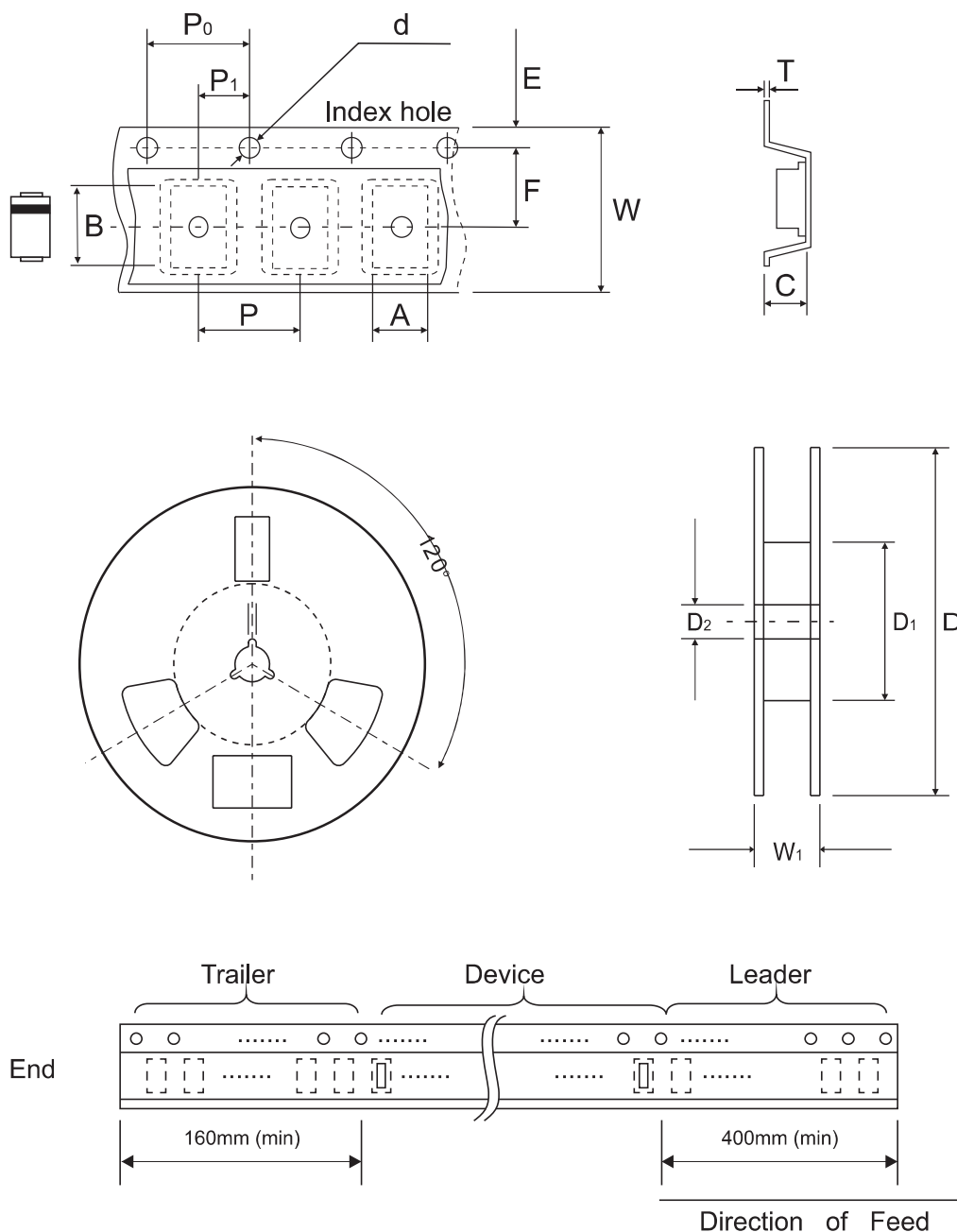


Note: 1. The pad layout is for reference purpose only.

Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOD-123FL	3,000	7

Reel Taping Specification



	SYMBOL	A	B	C	d	D	D1	D2
SOD-123FL	(mm)	2.05 ± 0.10	3.90 ± 0.10	1.28 ± 0.05	1.55 ± 0.05	180 ± 1.00	60.00 ± 1.50	13.00 ± 0.20
	(inch)	0.081 ± 0.004	0.154 ± 0.004	0.050 ± 0.002	0.061 ± 0.002	7.087 ± 0.039	2.362 ± 0.059	0.512 ± 0.008

	SYMBOL	E	F	P	P ₀	P ₁	T	W	W ₁
SOD-123FL	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.25 ± 0.02	8.00 ± 0.30	$10.70 + 2.00 - 1.00$
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.010 ± 0.001	0.315 ± 0.012	$0.421 + 0.079 - 0.039$

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