

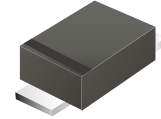
SMF4L-HF Series

Working Peak Reverse Voltage: 5 to 60 V

Peak Pulse Power: 400 W

RoHS Device

Halogen Free

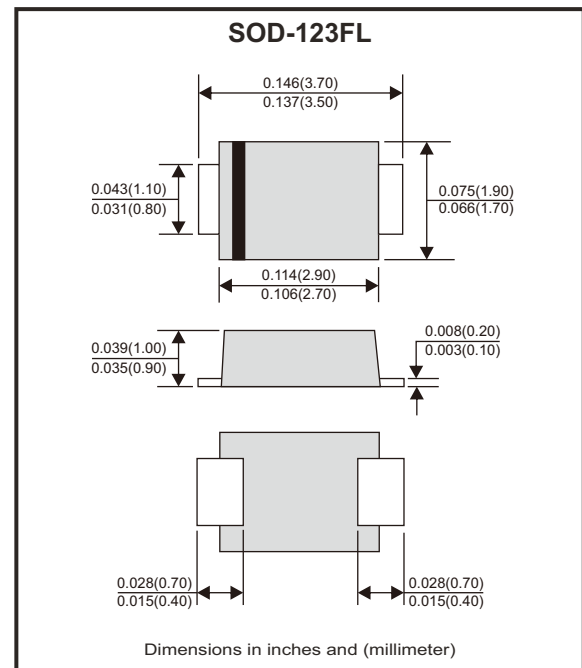


Features

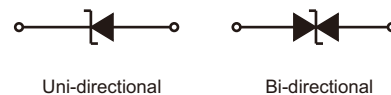
- Glass passivated chip.
- 400W peak pulse power capability with a 10/1000 μ s waveform, repetition rate (duty cycles): 0.01%.
- Low leakage.
- Excellent clamping capability.
- Very fast response time.
- ESD protection of data lines in accordance with IEC 61000-4-2.
- IEC 61000-4-2 ESD 15kV (air), 8kV (contact).
- High temperature soldering: 260°C/40 seconds at terminals.

Mechanical data

- Case: JEDEC SOD-123FL, molded plastic over glass passivated junction.
- Epoxy: UL 94V-0 rate flame retardant.
- Polarity: Color band denotes cathode end except bipolar.
- Terminal: Solderable per MIL-STD-750, method 2026.
- Mounting position: Any.



Circuit Diagram



Maximum Ratings (T_A=25°C unless otherwise noted)

Characteristics	Symbol	Value	Units
Peak power dissipation with a 10/1000 μ s waveform (Note 1)	P _{PP}	400	W
Peak pulse current with a 10/1000 μ s waveform (Note 1)	I _{PP}	See next table	A
Power dissipation on infinite heatsink at T _L = 50°C	P _D	1.0	W
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only (Note 2)	I _{FSM}	30	A
Max. instantaneous forward voltage at 25A for unidirectional 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.5 and derated above T_a=25°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.

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

Part No	Breakdown voltage V _{BR} @ I _T			Maximum reverse leakage @ V _{RWM} I _R (μA)	Working peak reverse voltage V _{RWM} (V)	Maximum reverse surge current I _{PP} (A)	Maximum clamping voltage @ I _{PP} V _C (V)	Marking code	
	Min(V)	Max(V)	I _T (mA)					Uni	Bi
SMF4L5.0(C)A-HF	6.40	7.00	10	800	5.0	43.5	9.2	KE	AE
SMF4L6.0(C)A-HF	6.67	7.37	10	800	6.0	38.8	10.3	KG	AG
SMF4L6.5(C)A-HF	7.22	7.98	10	500	6.5	35.7	11.2	KK	AK
SMF4L7.0(C)A-HF	7.78	8.60	10	200	7.0	33.3	12.0	KM	AM
SMF4L7.5(C)A-HF	8.33	9.21	1	100	7.5	31.0	12.9	KP	AP
SMF4L8.0(C)A-HF	8.89	9.83	1	50	8.0	29.4	13.6	KR	AR
SMF4L8.5(C)A-HF	9.44	10.4	1	20	8.5	27.8	14.4	KT	AT
SMF4L9.0(C)A-HF	10.0	11.1	1	10	9.0	26.0	15.4	KV	AV
SMF4L10(C)A-HF	11.1	12.3	1	5	10	23.5	17.0	KX	AX
SMF4L11(C)A-HF	12.2	13.5	1	1	11	22.0	18.2	KZ	AZ
SMF4L12(C)A-HF	13.3	14.7	1	1	12	20.1	19.9	LE	BE
SMF4L13(C)A-HF	14.4	15.9	1	1	13	18.6	21.5	LG	BG
SMF4L14(C)A-HF	15.6	17.2	1	1	14	17.2	23.2	LK	BK
SMF4L15(C)A-HF	16.7	18.5	1	1	15	16.4	24.4	LM	BM
SMF4L16(C)A-HF	17.8	19.7	1	1	16	15.4	26.0	LP	BP
SMF4L17(C)A-HF	18.9	20.9	1	1	17	14.5	27.6	LR	BR
SMF4L18(C)A-HF	20.0	22.1	1	1	18	13.7	29.2	LT	BT
SMF4L20(C)A-HF	22.2	24.5	1	1	20	12.3	32.4	LV	BV
SMF4L22(C)A-HF	24.4	26.9	1	1	22	11.3	35.5	LX	BX
SMF4L24(C)A-HF	26.7	29.5	1	1	24	10.3	38.9	LZ	BZ
SMF4L26(C)A-HF	28.9	31.9	1	1	26	9.5	42.1	ME	CE
SMF4L28(C)A-HF	31.1	34.4	1	1	28	8.8	45.4	MG	CG
SMF4L30(C)A-HF	33.3	36.8	1	1	30	8.3	48.4	MK	CK
SMF4L33(C)A-HF	36.7	40.6	1	1	33	7.5	53.3	MM	CM
SMF4L36(C)A-HF	40.0	44.2	1	1	36	6.9	58.1	MP	CP
SMF4L40(C)A-HF	44.4	49.1	1	1	40	6.2	64.5	MR	CR
SMF4L43(C)A-HF	47.8	52.8	1	1	43	5.8	69.4	MT	CT
SMF4L45(C)A-HF	50.0	55.3	1	1	45	5.5	72.7	MV	CV
SMF4L48(C)A-HF	53.3	58.9	1	1	48	5.2	77.4	MX	CX
SMF4L51(C)A-HF	56.7	62.7	1	1	51	4.9	82.4	MZ	CZ
SMF4L54A-HF	60.0	66.3	1	1	54	4.6	87.1	NE	
SMF4L58A-HF	64.4	71.2	1	1	58	4.3	93.6	NG	
SMF4L60A-HF	66.7	73.7	1	1	60	4.1	96.8	NK	

Notes: 1. Suffix A denotes 5% tolerance device.

2. For Bi-directional devices, use suffix CA.

3. For Bi-directional devices having VR of 10 volts and under, the IR limit is double.

Typical Rating and Characteristic Curves (SMF4L-HF Series)

Fig.1 - Pulse Derating Curve

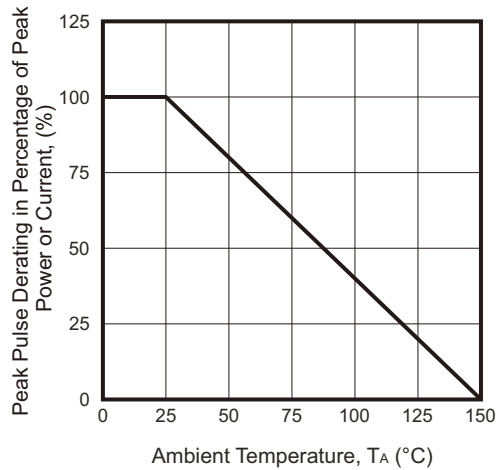


Fig.2 - Max. Non-repetitive Surge Current

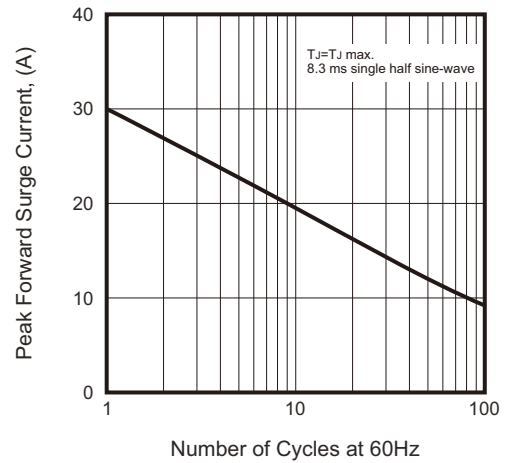


Fig.3 - Typical Junction Capacitance

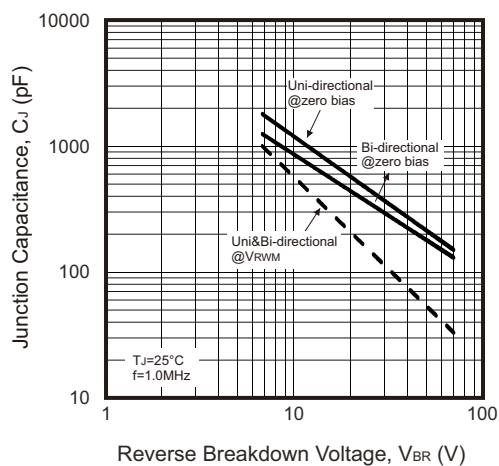


Fig.4 - Peak Pulse Power Rating Curve

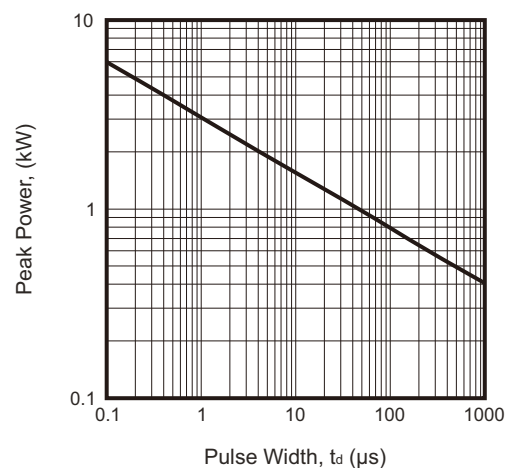
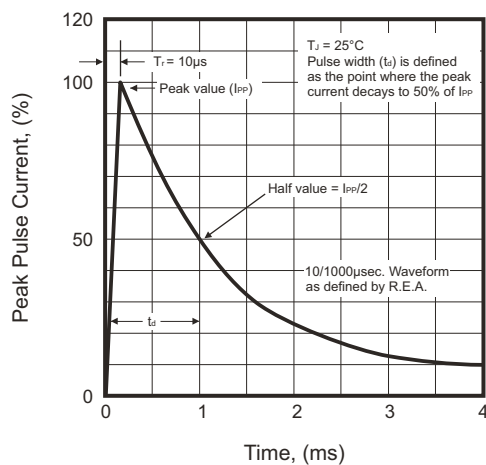
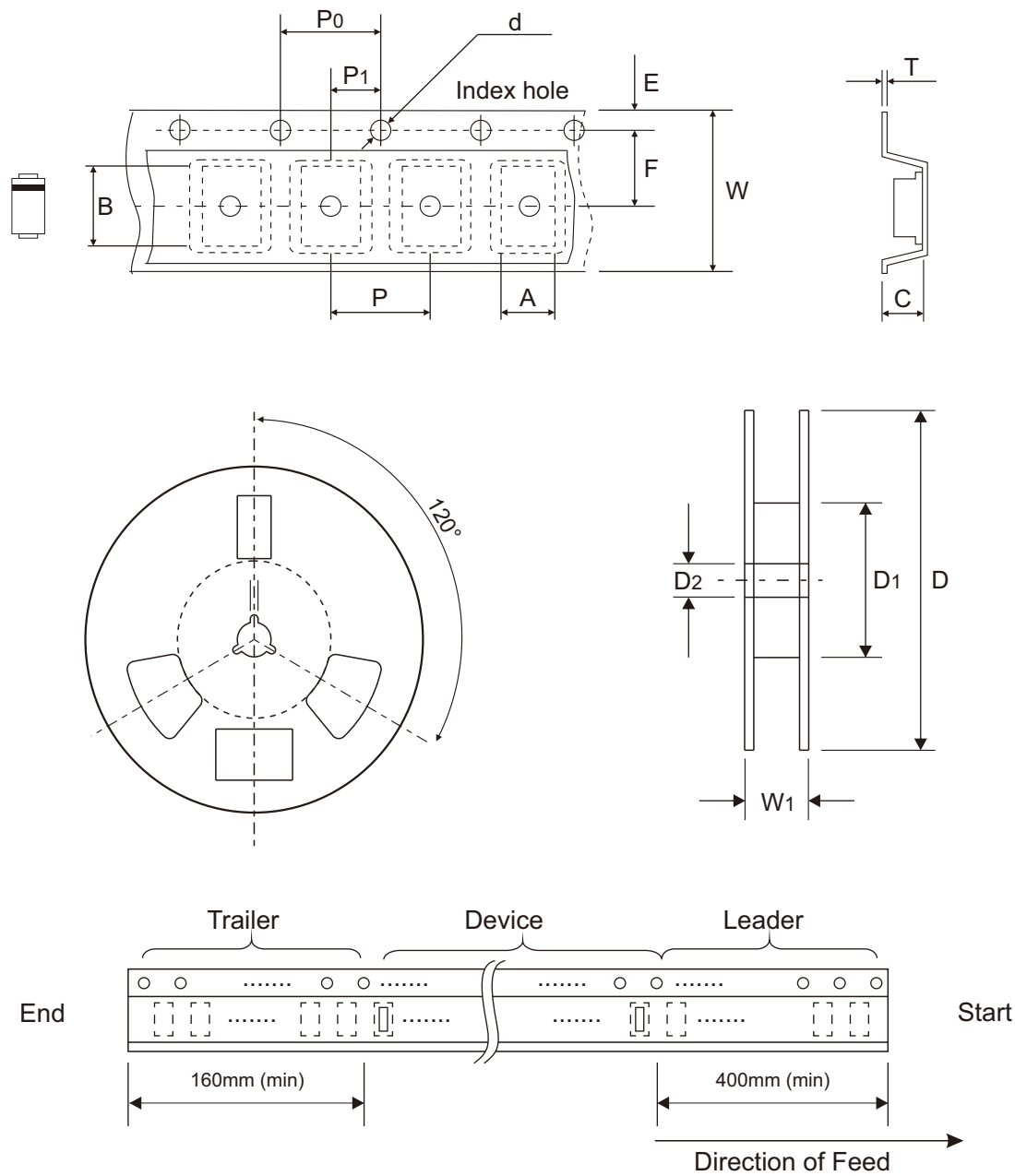


Fig.5 - Pulse Waveform



Reel Taping Specification



SOD-123FL	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	2.05 ± 0.10	3.85 ± 0.10	1.25 ± 0.10	1.55 ± 0.05	178.00 ± 1.00	60.00 ± 0.50	13.50 ± 0.50
	(inch)	0.081 ± 0.004	0.152 ± 0.004	0.049 ± 0.004	0.061 ± 0.002	7.008 ± 0.039	2.362 ± 0.020	0.531 ± 0.020

SOD-123FL	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.20 ± 0.05	8.00 ± 0.30	12.00 ± 0.50
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.008 ± 0.002	0.315 ± 0.012	0.472 ± 0.020

Marking Code

Part Number	Marking Code
SMF4L-HF Series	See Page 2

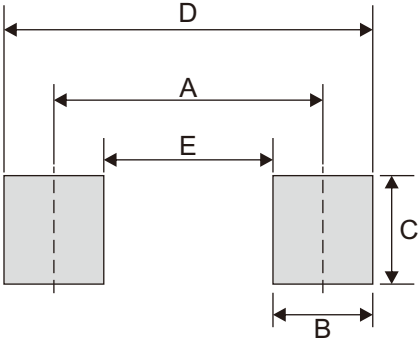


xx = Product type marking code (See Page 2)

┃ = Cathode band

Suggested P.C.B. PAD Layout

SIZE	SOD-123FL	
	(mm)	(inch)
A	3.10	0.122
B	1.15	0.045
C	1.25	0.048
D	4.25	0.167
E	1.95	0.077



Standard Packaging

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