

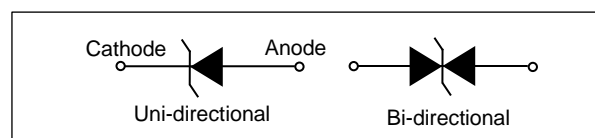
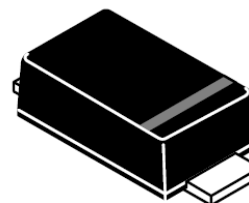
Features

- Glass passivated chip.
- 400W peak pulse power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle):0.01%.
- Low leakage.
- Uni and Bidirectional unit.
- Excellent clamping capability.
- Very fast response time.
- Range: S-P4SMFJ5.0A(CA) Thru.S-P4SMFJ220A
- AEC -Q101 qualified.

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.
- Moisture Sensitivity: Level 1 per J-STD-020.
- RoHS Compliant.

SOD-123FL



Circuit Diagram

- Terminal Connections: See Diagram Right

Absolute 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
Power dissipation on infinite heatsink at $T_L = 75^\circ\text{C}$	P_D	3	W
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only ⁽²⁾	I_{FSM}	40	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.5 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

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

Part Number		Reverse Stand-off Voltage	Breakdown Voltage V _{BR} @ I _T		Test Current	Max. Clamping Voltage @ I _{PP}	Max. Peak Pulse Current	Max. Reverse Leakage @ V _{RWM}
UNI-POLAR	BI-POLAR	V _{RWM} (V)	Min.(V)	Max.(V)	I _T (mA)	V _{C MAX} (V)	I _{PP} (A)	I _R (uA)
S-P4SMFJ5.0A	S-P4SMFJ5.0CA	5.0	6.40	7.00	10	9.2	43.5	800
S-P4SMFJ6.0A	S-P4SMFJ6.0CA	6.0	6.67	7.37	10	10.3	38.8	800
S-P4SMFJ6.5A	S-P4SMFJ6.5CA	6.5	7.22	7.98	10	11.2	35.7	500
S-P4SMFJ7.0A	S-P4SMFJ7.0CA	7.0	7.78	8.60	10	12.0	33.3	200
S-P4SMFJ7.5A	S-P4SMFJ7.5CA	7.5	8.33	9.21	1	12.9	31.0	100
S-P4SMFJ8.0A	S-P4SMFJ8.0CA	8.0	8.89	9.83	1	13.6	29.4	50
S-P4SMFJ8.5A	S-P4SMFJ8.5CA	8.5	9.44	10.40	1	14.4	27.8	20
S-P4SMFJ9.0A	S-P4SMFJ9.0CA	9.0	10.00	11.10	1	15.4	26.0	10
S-P4SMFJ10A	S-P4SMFJ10CA	10.0	11.10	12.30	1	17.0	23.5	5
S-P4SMFJ11A	S-P4SMFJ11CA	11.0	12.20	13.50	1	18.2	22.0	1
S-P4SMFJ12A	S-P4SMFJ12CA	12.0	13.30	14.70	1	19.9	20.1	1
S-P4SMFJ13A	S-P4SMFJ13CA	13.0	14.40	15.90	1	21.5	18.6	1
S-P4SMFJ14A	S-P4SMFJ14CA	14.0	15.60	17.20	1	23.2	17.2	1
S-P4SMFJ15A	S-P4SMFJ15CA	15.0	16.70	18.50	1	24.4	16.4	1
S-P4SMFJ16A	S-P4SMFJ16CA	16.0	17.80	19.70	1	26.0	15.4	1
S-P4SMFJ17A	S-P4SMFJ17CA	17.0	18.90	20.90	1	27.6	14.5	1
S-P4SMFJ18A	S-P4SMFJ18CA	18.0	20.00	22.10	1	29.2	13.7	1
S-P4SMFJ20A	S-P4SMFJ20CA	20.0	22.20	24.50	1	32.4	12.3	1
S-P4SMFJ22A	S-P4SMFJ22CA	22.0	24.40	26.90	1	35.5	11.3	1
S-P4SMFJ24A	S-P4SMFJ24CA	24.0	26.70	29.50	1	38.9	10.3	1
S-P4SMFJ26A	S-P4SMFJ26CA	26.0	28.90	31.90	1	42.1	9.5	1
S-P4SMFJ28A	S-P4SMFJ28CA	28.0	31.10	34.40	1	45.4	8.8	1
S-P4SMFJ30A	S-P4SMFJ30CA	30.0	33.50	36.80	1	48.4	8.3	1
S-P4SMFJ33A	S-P4SMFJ33CA	33.0	36.70	40.60	1	53.3	7.5	1
S-P4SMFJ36A	S-P4SMFJ36CA	36.0	40.00	44.20	1	58.1	6.9	1
S-P4SMFJ40A	S-P4SMFJ40CA	40.0	44.40	49.10	1	64.5	6.2	1
S-P4SMFJ43A	S-P4SMFJ43CA	43.0	47.80	52.80	1	69.4	5.8	1
S-P4SMFJ45A	S-P4SMFJ45CA	45.0	50.00	55.30	1	72.7	5.5	1
S-P4SMFJ48A	S-P4SMFJ48CA	48.0	53.30	58.90	1	77.4	5.2	1
S-P4SMFJ51A	S-P4SMFJ51CA	51.0	56.70	62.70	1	82.4	4.9	1
S-P4SMFJ54A	S-P4SMFJ54CA	54.0	60.00	66.30	1	87.1	4.6	1
S-P4SMFJ58A	S-P4SMFJ58CA	58.0	64.40	71.20	1	93.6	4.3	1
S-P4SMFJ60A	S-P4SMFJ60CA	60.0	66.70	73.70	1	96.8	4.1	1
S-P4SMFJ64A	S-P4SMFJ64CA	64.0	71.10	78.60	1	103.0	3.9	1
S-P4SMFJ70A	S-P4SMFJ70CA	70.0	77.80	86.00	1	113.0	3.5	1
S-P4SMFJ75A	S-P4SMFJ75CA	75.0	83.30	92.10	1	121.0	3.3	1
S-P4SMFJ78A	S-P4SMFJ78CA	78.0	86.70	95.80	1	126.0	3.2	1
S-P4SMFJ85A	S-P4SMFJ85CA	85.0	94.4	104.0	1	137.0	2.9	1
S-P4SMFJ90A	S-P4SMFJ90CA	90.0	100.0	111.0	1	146.0	2.7	1
S-P4SMFJ100A	S-P4SMFJ100CA	100.0	111.0	123.0	1	162.0	2.5	1
S-P4SMFJ110A	S-P4SMFJ110CA	110.0	122.0	135.0	1	177.0	2.3	1
S-P4SMFJ120A	S-P4SMFJ120CA	120.0	133.0	147.0	1	193.0	2.1	1
S-P4SMFJ130A	S-P4SMFJ130CA	130.0	144.0	159.0	1	209.0	1.9	1
S-P4SMFJ150A	S-P4SMFJ150CA	150.0	167.0	185.0	1	243.0	1.6	1
S-P4SMFJ160A	S-P4SMFJ160CA	160.0	178.0	197.0	1	259.0	1.5	1
S-P4SMFJ170A	S-P4SMFJ170CA	170.0	189.0	209.0	1	275.0	1.5	1
S-P4SMFJ180A		180.0	201.0	222.0	1	292.0	1.4	1
S-P4SMFJ190A		190.0	209.0	243.0	1	308.0	1.3	1
S-P4SMFJ200A		200.0	224.0	247.0	1	324.0	1.2	1
S-P4SMFJ210A		210.0	231.0	268.0	1	340.0	1.2	1
S-P4SMFJ220A		220.0	246.0	272.0	1	356.0	1.1	1

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

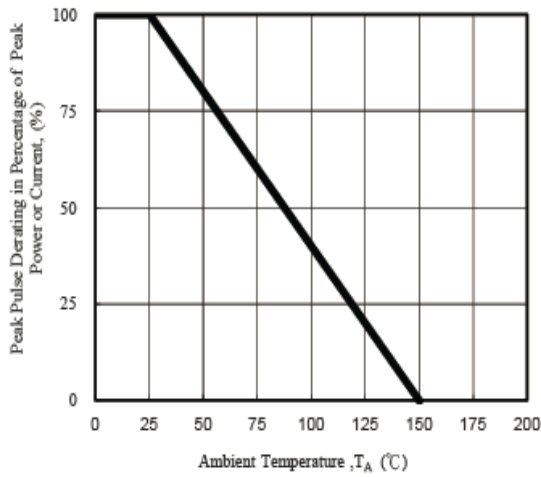


Fig. 1 - Pulse Derating Curve

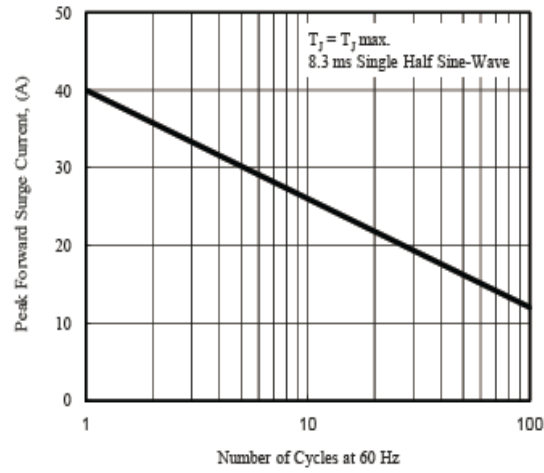


Fig. 2 - Maximum Non-Repetitive Surge Current

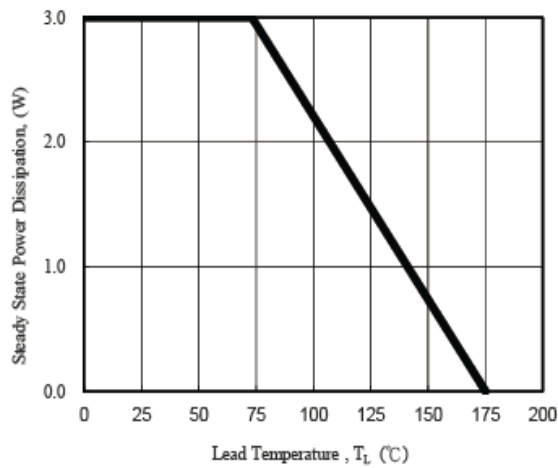


Fig. 3 - Steady State Power Derating Curve

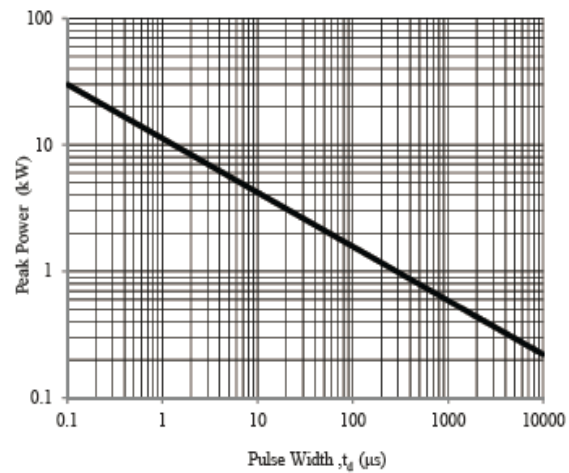


Fig. 4 - Peak Pulse Power Rating Curve

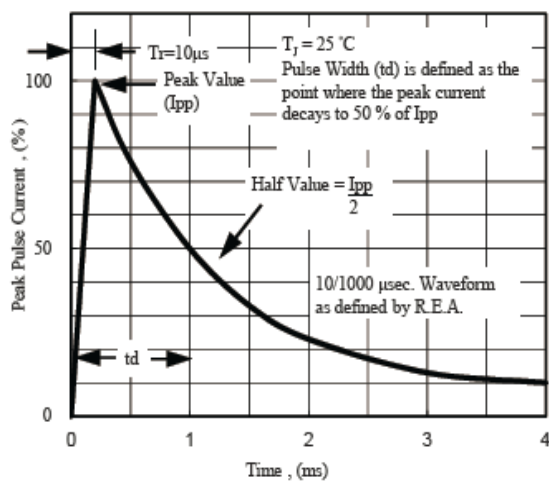


Fig. 5 - Pulse Waveform

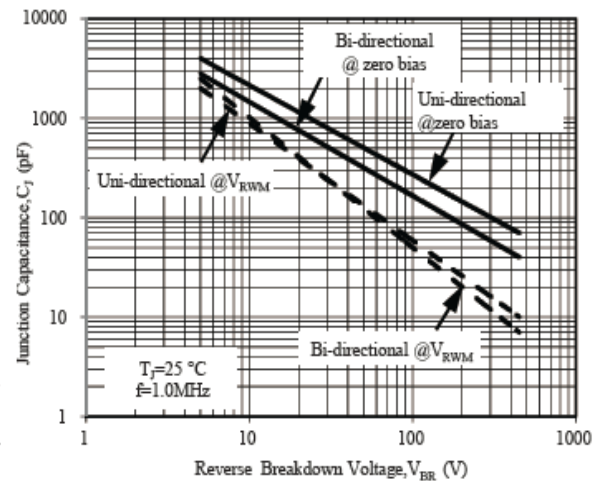
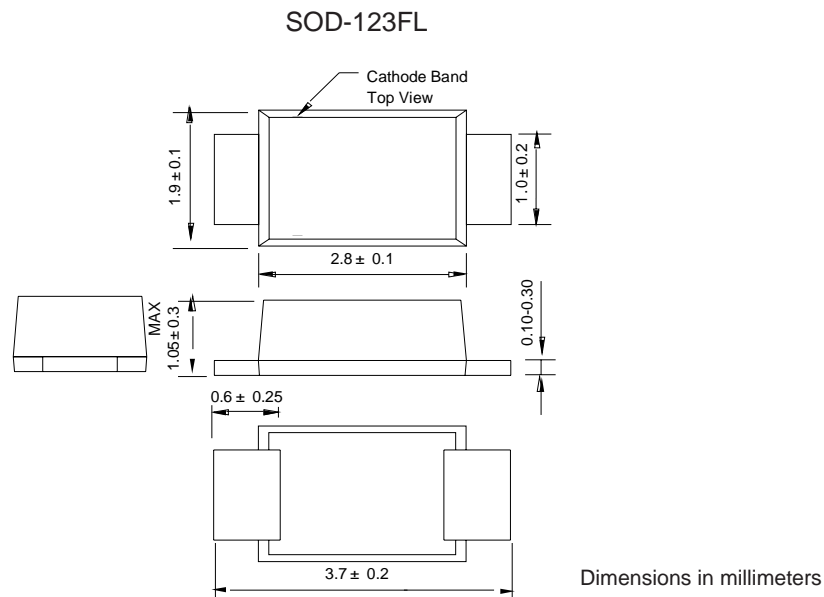



Fig. 6 - Typical Junction Capacitance

Package Outline Dimensions and Pad Layouts



Summary of Packing Options

Package Type	Description	Packing Quantity	Industry Standard
SOD-123FL 	Embossed Carrier Reel Pack	3000PCS	EIA-481-D

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