

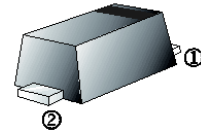
RoHS Compliant Product

A suffix of "-C" specifies halogen-free and lead-free

FEATURES

- For Surface Mounted Applications
- Low-Profile Package
- Ideal for Automated Placement
- Uni Polar Unit
- 400W Peak Pulse Power Capability with a 10/1000 μ s Waveform
- Low Incremental Surge Resistance
- Excellent Clamping Capability
- Very Fast Response Time
- High Temperature Soldering Guaranteed: 260°C/10s at Terminals
- Meets MSL Level 1

SOD-123FL



MECHANICAL DATA

- Package: SOD-123FL
Molding Compound Meets UL 94 V-0 Flammability Rating
- Terminals: Tin Plated Leads, Solderable per J-STD-002 and JESD22-B102
- Polarity: Color band denotes cathode end
- Mounting Position: Any



PACKAGE INFORMATION

Package	MPQ	Leader Size
SOD-123FL	3K	7 inch

ORDER INFORMATION

Part Number	Type
S4FL5.0A-C~S4FL85A-C	Lead (Pb)-free and Halogen-free

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(Rating 25°C ambient temperature unless otherwise specified. Single phase half wave, 60Hz, resistive or inductive load.
For capacitive load, de-rate current by 20%.)

Rating	Symbol	Value	Unit
Peak Power Dissipation with a 10/1000 μ s waveform ^{1 2}	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	T _L =70°C P _D	0.8	W
Peak Forward Surge Current, 8.3ms single half sine-wave unidirectional only ³	I _{FSM}	30	A
Operating Junction & Storage Temperature Range	T _J , T _{STG}	-55~150	°C
Thermal Resistance Ratings			
Thermal Resistance from Junction-Ambient	R _{θJA}	300	°C/W
Thermal Resistance from Junction-Case	R _{θJC}	40	
Thermal Resistance from Junction-Lead	R _{θJL}	26	

Notes:

1. Non-repetitive current pulse per Fig.2 and de-rated above T_A=25°C per Fig.3.
2. T_L=30°C unless otherwise noted, V_F≤1.25V@200mA.
3. Measured on 8.3ms single half sine-wave or equivalent square wave for unidirectional device only.

ELECTRICAL CHARACTERISTICS (Rating $T_A=25^\circ\text{C}$ unless otherwise specified)

Part Number	Marking Code	Reverse Stand-Off Voltage	Breakdown Voltage V_{BR} @ I_T		Test Current	Maximum Reverse Leakage I_R @ V_{RWM}	Maximum Clamping Voltage V_C @ I_{PP}	Maximum Reverse Surge Current
			Min.	Max.				
		V_{RWM}	V_{BR}	I_T^1	I_R	V_C	I_{PP}^2	
Uni	Uni	V	V		mA	μA	V	A
S4FL5.0A-C	KE / F5.0A	5	6.4	7.07	10	800	9.2	43.38
S4FL6.0A-C	KG / F6.0A	6	6.67	7.37	10	800	10.3	38.83
S4FL6.5A-C	KK / F6.5A	6.5	7.22	7.98	10	500	11.2	35.71
S4FL7.0A-C	KM / F7.0A	7	7.78	8.6	10	200	12	33.33
S4FL7.5A-C	KP / F7.5A	7.5	8.33	9.21	1	100	12.9	31.01
S4FL8.0A-C	KR / F8.0A	8	8.89	9.83	1	50	13.6	29.41
S4FL8.5A-C	KT / F8.5A	8.5	9.44	10.4	1	10	14.4	27.78
S4FL9.0A-C	KV / F9.0A	9	10	11.1	1	5	15.4	25.97
S4FL10A-C	KX / F10A	10	11.1	12.3	1	2.5	17	23.52
S4FL11A-C	KZ / F11A	11	12.2	13.5	1	2.5	18.2	21.98
S4FL12A-C	LE / F12A	12	13.3	14.7	1	2.5	19.9	20.1
S4FL13A-C	LG / F13A	13	14.4	15.9	1	1	20	18.6
S4FL14A-C	LK / F14A	14	15.6	17.2	1	1	23.2	17.24
S4FL15A-C	LM / F15A	15	16.7	18.5	1	1	24.4	16.4
S4FL16A-C	LP / F16A	16	17.8	19.7	1	1	26	15.38
S4FL17A-C	LR / F17A	17	18.9	20.9	1	1	27.6	14.5
S4FL18A-C	LT / F18A	18	20	22.1	1	1	29.2	13.7
S4FL19A-C	F19A	19	21.1	23.3	1	1	30.6	13.08
S4FL20A-C	LV / F20A	20	22.2	24.5	1	1	32.4	12.34
S4FL22A-C	LX / F22A	22	24.4	26.9	1	1	35.5	11.26
S4FL24A-C	LZ / F24A	24	26.7	29.5	1	1	38.9	10.28
S4FL26A-C	ME / F26A	26	28.9	31.9	1	1	42.1	9.5
S4FL28A-C	MG / F28A	28	31.1	34.4	1	1	45.4	8.82
S4FL30A-C	MK / F30A	30	33.3	36.8	1	1	48.4	8.26
S4FL33A-C	MM / F33A	33	36.7	40.6	1	1	53.3	7.5
S4FL36A-C	MP / F36A	36	40	44.2	1	1	58.1	6.88
S4FL40A-C	MR / F40A	40	44.4	49.1	1	1	64.5	6.2
S4FL43A-C	MT / F43A	43	47.8	52.8	1	1	69.4	5.76
S4FL45A-C	MV / F45A	45	50	55.3	1	1	72.7	5.5

ELECTRICAL CHARACTERISTICS (Rating $T_A=25^\circ\text{C}$ unless otherwise specified)

Part Number	Marking Code	Reverse Stand-Off Voltage	Breakdown Voltage V_{BR} @ I_T		Test Current	Maximum Reverse Leakage I_R @ V_{RWM}	Maximum Clamping Voltage V_C @ I_{PP}	Maximum Reverse Surge Current
			Min.	Max.				
		V_{RWM}	V_{BR}	I_T ¹	I_R	V_C	I_{PP} ²	
Uni	Uni	V	V		μA	μA	V	A
S4FL48A-C	MX / F48A	48	53.3	58.9	1	1	77.4	5.16
S4FL51A-C	MZ / F51A	51	56.7	62.7	1	1	82.4	4.86
S4FL54A-C	NE / F54A	54	60	66.3	1	1	87.1	4.6
S4FL58A-C	NG / F58A	58	64.4	71.2	1	1	93.6	4.28
S4FL60A-C	NK / F60A	60	66.7	73.7	1	1	96.8	4.14
S4FL64A-C	NM / F64A	64	71.1	78.6	1	1	103	3.88
S4FL70A-C	NP / F70A	70	77.8	86	1	1	113	3.54
S4FL75A-C	NR / F75A	75	83.3	92.1	1	1	121	3.3
S4FL78A-C	NT / F78A	78	86.7	95.8	1	1	126	3.18
S4FL80A-C	F80A	80	88.8	97.6	1	1	129	3.1
S4FL85A-C	NV / F85A	85	94.4	104	1	1	137	2.92

Notes:

1. $t_p \leq 50\text{ms}$, Pulse test: $t_p \leq 50\text{ms}$.
2. Surge current waveform per Fig.2 and derated per Fig.3.

RATINGS AND CHARACTERISTIC CURVES

FIG1: Peak Pulse Power Rating Curve

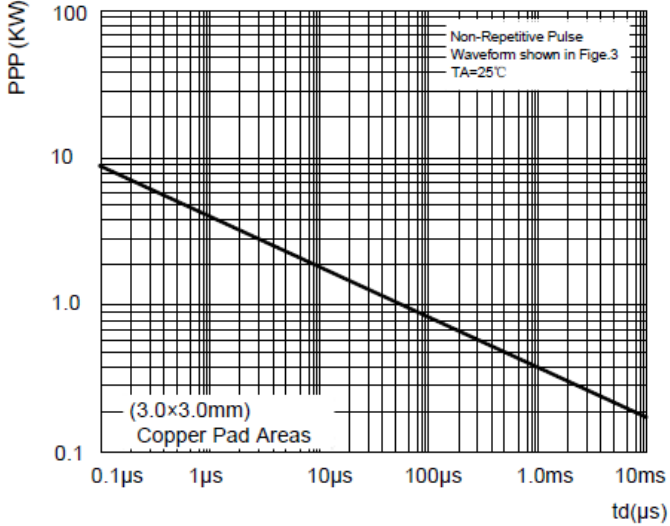


FIG2: Pulse Waveform

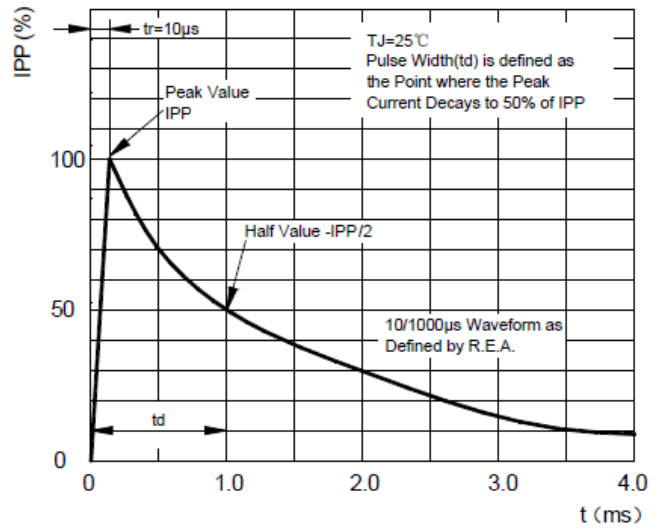


FIG3: Pulse Power or Current vs. Initial Junction Temperature

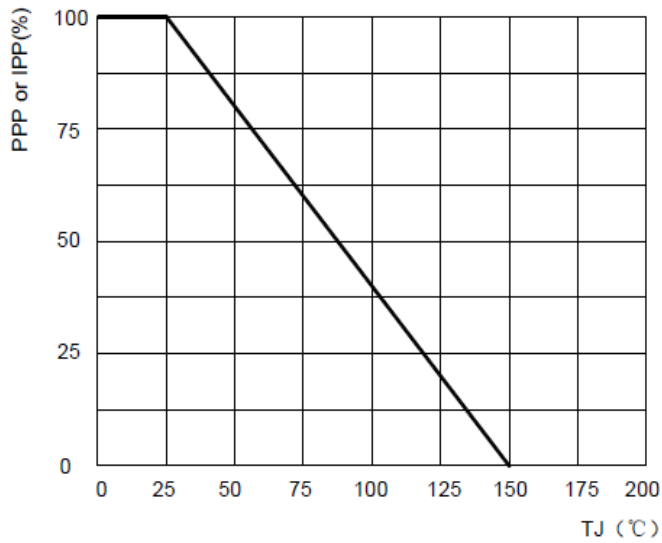
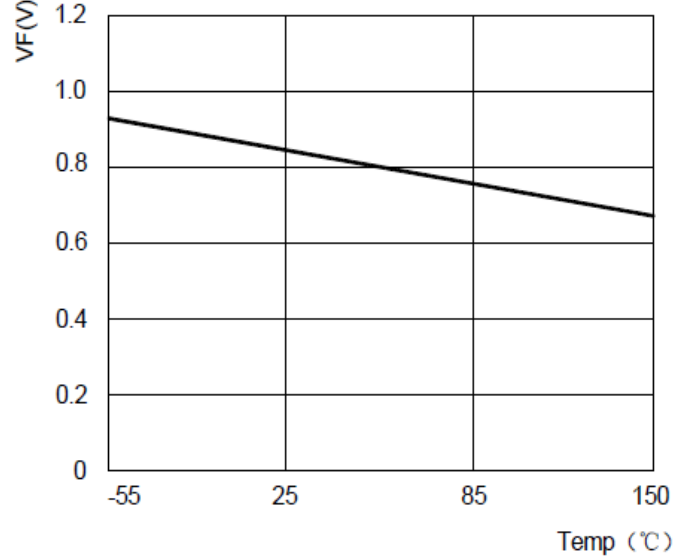
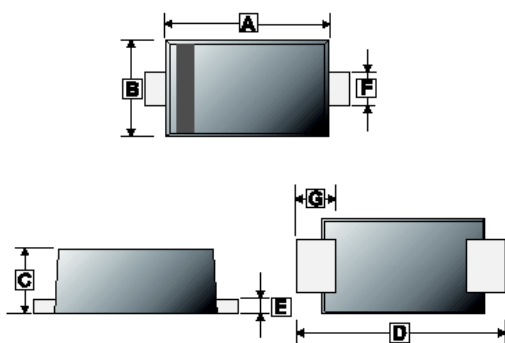


FIG4: Forward Voltage Curve



PACKAGE OUTLINE DIMENSIONS

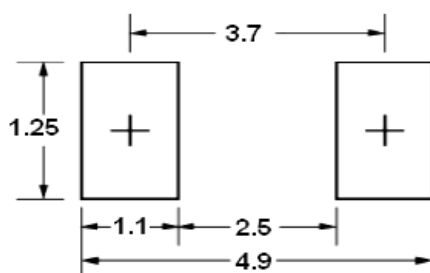
SOD-123FL



REF.	Millimeter	
	Min.	Max.
A	2.40	3.10
B	1.40	2.10
C	0.80	1.55
D	3.30	3.95
E	0.05	0.30
F	0.50	1.35
G	0.80 TYP.	

MOUNTING PAD LAYOUT

SOD-123FL



*Dimensions in millimeters