SODJ Series

200W,5.0V - 180V Surface Mount Transient Voltage Suppressor

1. Features

- For surface mounted applications in order to optimize board space.
- Glass passivated junction
- Low inductance
- Plastic package has Underwriters Laboratory Fammability Classification 94V-0
- High temperature soldering : 260°C /10 seconds at terminals

Case: SOD-123FL

Bipolar

2. Mechanical Data

- Case: SOD-123FL, molded plastic
- Terminals: plated leads solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting position: Any

3. Maximum Ratings and Electrical Characteristics

Rating at 25℃ Cambient temperature unless otherwise specified.Resistive or inductive load,
For Capacitive load deratecurrent by 20%.

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000 μs waveform (1) Fig.2	P_{PPM}	200	W
Peak pulse current with a waveform (1)	I_{PPM}	See next table	A
Power dissipation on infinite heatsink at T_L=75°C	P_D	0.4	W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

Note:

(1) Non-repetitive current pulse per Fig.3 and derated above T_A=25°C per Fig.1.

4. Electrical Characteristics (TA=25℃ unless otherwise noted)

Part Number (Bi)	Marking Code	Breakdown Voltage V_{BR}@I_T			Maximum Reverse Leakage I_R@V_{RWM}(uA)	Working Peak Reverse VoltageV_{RWM}(v)	Maximum Reverse Surge Current Ipp(A)	Maximum Clamping Voltage Vc@ Ipp(V)
	Bi	Min(V)	Max(V)	I_T(mA)				
SODJ5.0CA	AE	6.4	7.0	10	800	5.0	21.7	9.2
SODJ6.0CA	AG	6.7	7.4	10	800	6.0	19.4	10.3
SODJ6.5CA	AK	7.2	8.0	10	500	6.5	17.9	11.2
SODJ7.0CA	AM	7.8	8.6	10	200	7.0	16.7	12.0
SODJ7.5CA	AP	8.3	9.2	1	100	7.5	15.5	12.9
SODJ8.0CA	AR	8.9	9.8	1	50	8.0	14.7	13.6
SODJ8.5CA	AT	9.4	10.4	1	20	8.5	13.9	14.4
SODJ9.0CA	AV	10.0	11.1	1	10	9.0	13.0	15.4
SODJ10CA	AX	11.1	12.3	1	5	10.0	11.8	17.0
SODJ11CA	AZ	12.2	13.5	1	1	11.0	11.0	18.2
SODJ12CA	BE	13.3	14.7	1	1	12.0	10.1	19.9
SODJ13CA	BG	14.4	15.9	1	1	13.0	9.3	21.5
SODJ14CA	BK	15.6	17.2	1	1	14.0	8.6	23.2
SODJ15CA	BM	16.7	18.5	1	1	15.0	8.2	24.4
SODJ16CA	BP	17.8	19.7	1	1	16.0	7.7	26.0
SODJ17CA	BR	18.9	20.9	1	1	17.0	7.3	27.6
SODJ18CA	BT	20.0	22.1	1	1	18.0	6.9	29.2
SODJ20CA	BV	22.2	24.5	1	1	20.0	6.2	32.4
SODJ22CA	BX	24.4	26.9	1	1	22.0	5.6	35.5
SODJ24CA	BZ	26.7	29.5	1	1	24.0	5.1	38.9
SODJ26CA	CE	28.9	31.9	1	1	26.0	4.8	42.1
SODJ28CA	CG	31.1	34.4	1	1	28.0	4.4	45.4
SODJ30CA	CK	33.5	36.8	1	1	30.0	4.1	48.4
SODJ33CA	CM	36.7	40.6	1	1	33.0	3.8	53.3
SODJ36CA	CP	40.0	44.2	1	1	36.0	3.4	58.1
SODJ40CA	CR	44.4	49.1	1	1	40.0	3.1	64.5
SODJ43CA	CT	47.8	52.8	1	1	43.0	2.9	69.4
SODJ45CA	CV	50.0	55.3	1	1	45.0	2.8	72.7
SODJ48CA	CX	53.3	58.9	1	1	48.0	2.6	77.4
SODJ51CA	CZ	56.7	62.7	1	1	51.0	2.4	82.4
SODJ54CA	DE	60.0	66.3	1	1	54.0	2.3	87.1

4. Electrical Characteristics (TA=25℃ unless otherwise noted)

Part Number (Bi)	Marking Code	Breakdown Voltage V_{BR}@I_T			Maximum Reverse Leakage I_R@V_{RWM}(uA)	Working Peak Reverse VoltageV_{RWM}(v)	Maximum Reverse Surge Current Ipp(A)	Maximum Clamping Voltage Vc@ Ipp(V)
	Bi	Min(V)	Max(V)	I_T(mA)				
SODJ58CA	DG	64.4	71.2	1	1	58.0	2.1	93.6
SODJ60CA	DK	66.7	73.7	1	1	60.0	2.1	96.8
SODJ64CA	DM	71.1	78.6	1	1	64.0	1.9	103.0
SODJ70CA	DP	77.8	86.0	1	1	70.0	1.8	113.0
SODJ75CA	DR	83.3	92.1	1	1	75.0	1.7	121.0
SODJ78CA	DT	86.7	95.8	1	1	78.0	1.6	126.0
SODJ85CA	DV	94.4	104.0	1	1	85.0	1.5	137.0
SODJ90CA	DX	100.0	111.0	1	1	90.0	1.4	146.0
SODJ100CA	DZ	111.0	123.0	1	1	100.0	1.2	162.0
SODJ110CA	EE	122.0	135.0	1	1	110.0	1.1	177.0
SODJ120CA	EG	133.0	147.0	1	1	120.0	1.0	193.0
SODJ130CA	EK	144.0	159.0	1	1	130.0	1.0	209.0
SODJ150CA	EM	167.0	185.0	1	1	150.0	0.8	243.0
SODJ160CA	EP	178.0	197.0	1	1	160.0	0.8	259.0
SODJ170CA	ER	189.0	209.0	1	1	170.0	0.7	275.0
SODJ180CA	ET	201.0	222.0	1	1	180.0	0.7	292.0

Note:

① Surge waveform: 10/1000μs

V_{RWM} : Stand-off voltage -- Maximum voltage that can be applied

V_{BR}: Breakdown voltage

V_C: Clamping voltage -- Peak voltage measured across the suppressor at a specified I_{PP}

I_R: Reverse leakage current

5. Rating And Characteristic Curves

Fig.1 Derating Curve

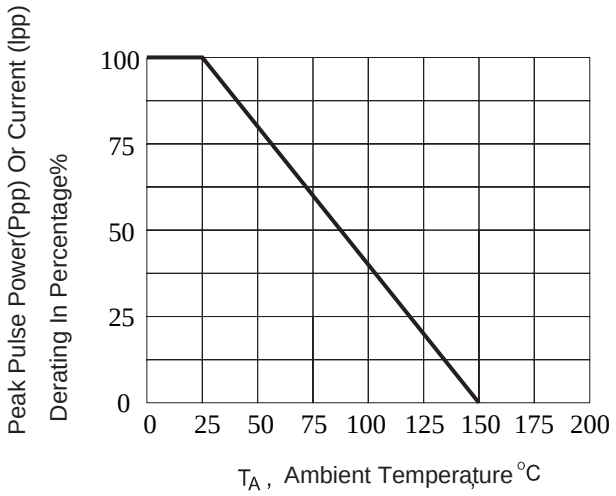


Fig. 2 Peak Pulse Power Rating Curve

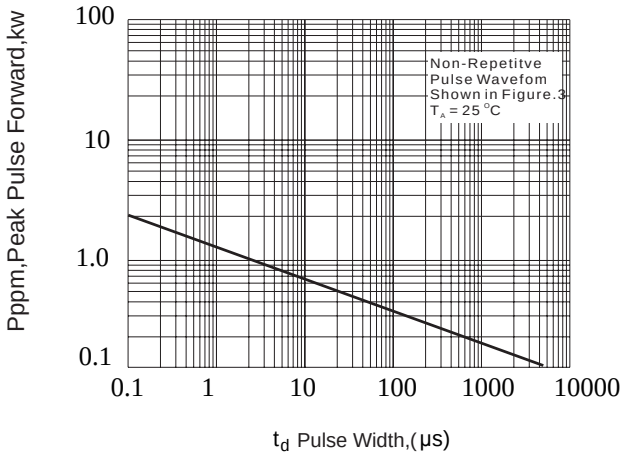
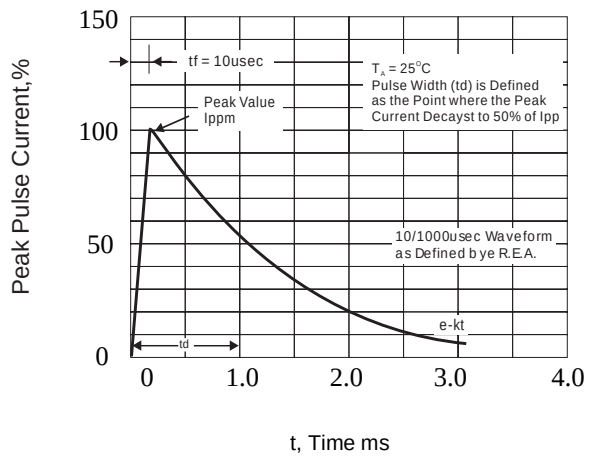
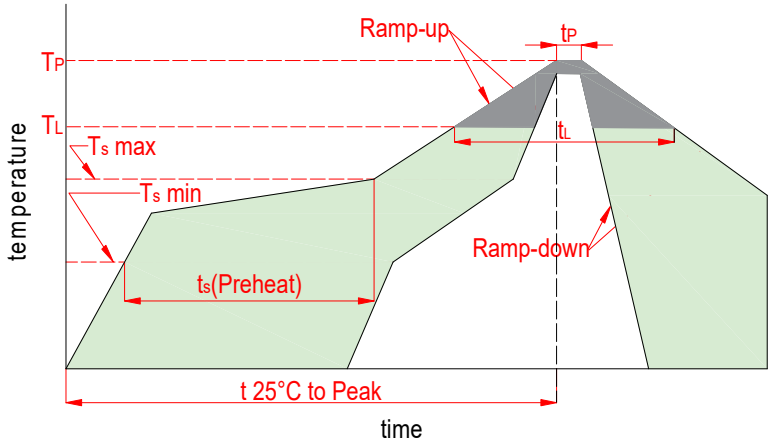


Fig.3 Clamping Power Pulse Waveform

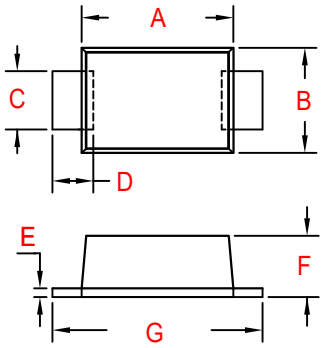


6. Soldering Parameters



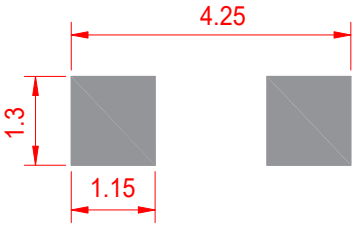
Reflow Condition		Lead-free
Pre Heat	Temp. min(T_s(min))	150℃
	Temp. max(T_s(min))	200℃
	Time(min to max)(t_s)	60~120s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3℃/s max
T_S(max) to T_L-Ramp-up Rate		3℃/s max
Reflow	Temp.(T_L)(Liquidus)	217℃
	Temp.(t_L)(Liquidus)	60~150s
Peak Temp.(T_P)		$260^{+0/-5}$℃
Time within actual peak Temp.(t_p)		30s max
Ramp-down Rate		6℃/s max
Time 25℃ to peak Tempe.(T_p)		8 minutes max
Do not exceed		260℃

7. Dimensions

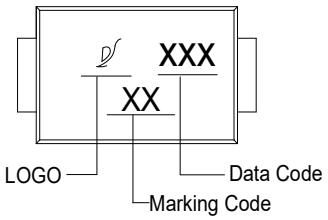


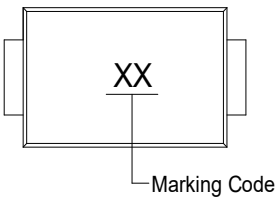
Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.095	0.118	2.4	3.0
B	0.063	0.079	1.6	2.0
C	0.032	0.047	0.8	1.2
D	0.014	0.037	0.35	0.95
E	0.004	0.008	0.1	0.2
F	0.035	0.043	0.9	1.1
G	0.134	0.157	3.4	4.0

Mounting PAD Layout



8.Part Marking System





9. Package Information

Package	Tape Width (mm)	Reel Size		Quantity(pcs)	AEC-Q101	LOGO
		mm	inch			
SOD-123FL	8	178	7	3000	No	

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