SOD-123FL Plastic-Encapsulate Diodes

Transient Voltage Suppressor Diodes

Features

- P_{PP} 400W
- V_{RWM} 5.0V- 220V
- Glass passivated chip

Applications

- Clamping Voltage

Marking

- S4MF
  XXCA/XXA
  XX : From 5.0 To 220

SOD-123FL

Bi-directional

Uni-direction

Limiting Values (Absolute Maximum Rating)

Item	Symbol	Unit	Conditions	Max
Peak power dissipation	P_{PPM}	W	with a 10/1000us waveform	400
Peak pulse current	I_{PPM}	A	with a 10/1000us waveform	See Next Table
Power dissipation	P_D	W	On infinite heat sink at T_L=75℃	3.0
Peak forward surge current	I_{FSM}	A	8.3 ms single half sine-wave unidirectional only	40
Operating junction and storage temperature range	T_J,T_{STG}	℃		-55 to +150

Electrical Characteristics（T_a=25℃ Unless otherwise specified）

Item	Symbol	Unit	Conditions	Max
Maximum instantaneous forward Voltage	V_F	V	at 15A for unidirectional only	3.5/6.5
Thermal resistance	$R_{\theta JL}$	℃/W	junction to lead	26
	$R_{\theta JA}$	℃/W	junction to ambient	300

Notes:

1)Non-repetitive current pulse per Fig.5 and derated above TA= 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 ;

3)VF<3.5V for devices of VBR<200V and VF<6.5V for devices of VBR>201V。

Electrical Characteristics (T_A=25℃ 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)
S4MF5.0A	S4MF5.0CA	5.0	6.40	7.00	10	9.2	43.5	800
S4MF6.0A	S4MF6.0CA	6.0	6.67	7.37	10	10.3	38.8	800
S4MF6.5A	S4MF6.5CA	6.5	7.22	7.98	10	11.2	35.7	500
S4MF7.0A	S4MF7.0CA	7.0	7.78	8.60	10	12.0	33.3	200
S4MF7.5A	S4MF7.5CA	7.5	8.33	9.21	1	12.9	31.0	100
S4MF8.0A	S4MF8.0CA	8.0	8.89	9.83	1	13.6	29.4	50
S4MF8.5A	S4MF8.5CA	8.5	9.44	10.40	1	14.4	27.8	20
S4MF9.0A	S4MF9.0CA	9.0	10.00	11.10	1	15.4	26.0	10
S4MF10A	S4MF10CA	10.0	11.10	12.30	1	17.0	23.5	5
S4MF11A	S4MF11CA	11.0	12.20	13.50	1	18.2	22.0	1
S4MF12A	S4MF12CA	12.0	13.30	14.70	1	19.9	20.1	1
S4MF13A	S4MF13CA	13.0	14.40	15.90	1	21.5	18.6	1
S4MF14A	S4MF14CA	14.0	15.60	17.20	1	23.2	17.2	1
S4MF15A	S4MF15CA	15.0	16.70	18.50	1	24.4	16.4	1
S4MF16A	S4MF16CA	16.0	17.80	19.70	1	26.0	15.4	1
S4MF17A	S4MF17CA	17.0	18.90	20.90	1	27.6	14.5	1
S4MF18A	S4MF18CA	18.0	20.00	22.10	1	29.2	13.7	1
S4MF20A	S4MF20CA	20.0	22.20	24.50	1	32.4	12.3	1
S4MF22A	S4MF22CA	22.0	24.40	26.90	1	35.5	11.3	1
S4MF24A	S4MF24CA	24.0	26.70	29.50	1	38.9	10.3	1
S4MF26A	S4MF26CA	26.0	28.90	31.90	1	42.1	9.5	1
S4MF28A	S4MF28CA	28.0	31.10	34.40	1	45.4	8.8	1
S4MF30A	S4MF30CA	30.0	33.50	36.80	1	48.4	8.3	1
S4MF33A	S4MF33CA	33.0	36.70	40.60	1	53.3	7.5	1
S4MF36A	S4MF36CA	36.0	40.00	44.20	1	58.1	6.9	1
S4MF40A	S4MF40CA	40.0	44.40	49.10	1	64.5	6.2	1
S4MF43A	S4MF43CA	43.0	47.80	52.80	1	69.4	5.8	1
S4MF45A	S4MF45CA	45.0	50.00	55.30	1	72.7	5.5	1
S4MF48A	S4MF48CA	48.0	53.30	58.90	1	77.4	5.2	1
S4MF51A	S4MF51CA	51.0	56.70	62.70	1	82.4	4.9	1
S4MF54A	S4MF54CA	54.0	60.00	66.30	1	87.1	4.6	1
S4MF58A	S4MF58CA	58.0	64.40	71.20	1	93.6	4.3	1
S4MF60A	S4MF60CA	60.0	66.70	73.70	1	96.8	4.1	1
S4MF64A	S4MF64CA	64.0	71.10	78.60	1	103.0	3.9	1
S4MF70A	S4MF70CA	70.0	77.80	86.00	1	113.0	3.5	1
S4MF75A	S4MF75CA	75.0	83.30	92.10	1	121.0	3.3	1
S4MF78A	S4MF78CA	78.0	86.70	95.80	1	126.0	3.2	1
S4MF85A	S4MF85CA	85.0	94.4	104.0	1	137.0	2.9	1
S4MF90A	S4MF90CA	90.0	100.0	111.0	1	146.0	2.7	1
S4MF100A	S4MF100CA	100.0	111.0	123.0	1	162.0	2.5	1
S4MF110A	S4MF110CA	110.0	122.0	135.0	1	177.0	2.3	1
S4MF120A	S4MF120CA	120.0	133.0	147.0	1	193.0	2.1	1
S4MF130A	S4MF130CA	130.0	144.0	159.0	1	209.0	1.9	1
S4MF150A	S4MF150CA	150.0	167.0	185.0	1	243.0	1.6	1
S4MF160A	S4MF160CA	160.0	178.0	197.0	1	259.0	1.5	1
S4MF170A	S4MF170CA	170.0	189.0	209.0	1	275.0	1.5	1
S4MF180A		180.0	201.0	222.0	1	292.0	1.4	1
S4MF190A		190.0	209.0	243.0	1	308.0	1.3	1
S4MF200A		200.0	224.0	247.0	1	324.0	1.2	1
S4MF210A		210.0	231.0	268.0	1	340.0	1.2	1
S4MF220A		220.0	246.0	272.0	1	356.0	1.1	1

Typical Characteristics

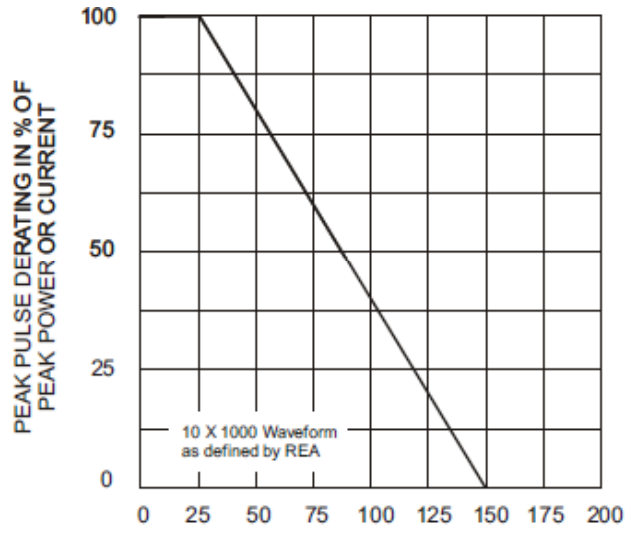


Fig. 1 - Pulse Derating Curve

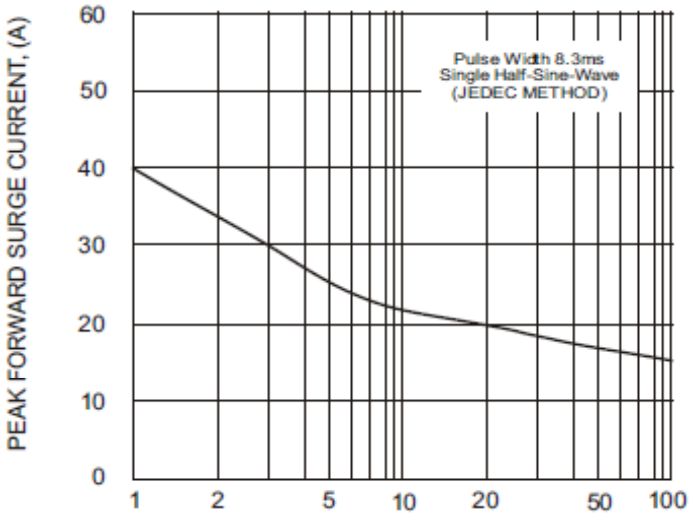


Fig. 2 - Maximum Non-Repetitive Surge Current

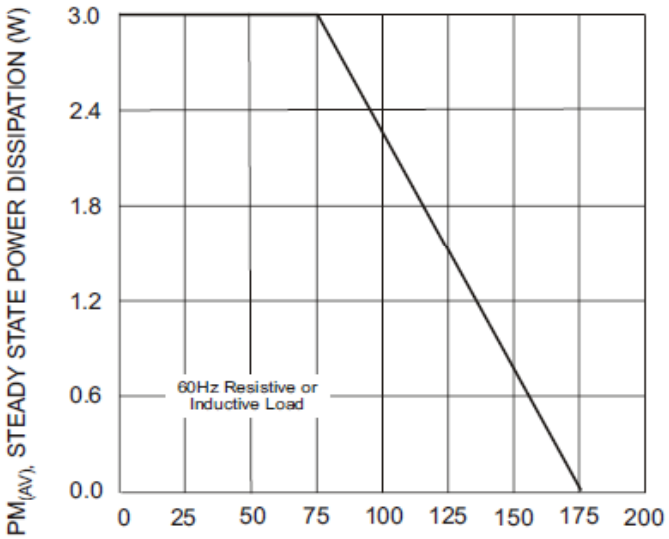


Fig. 3 - Steady State Power Derating Curve

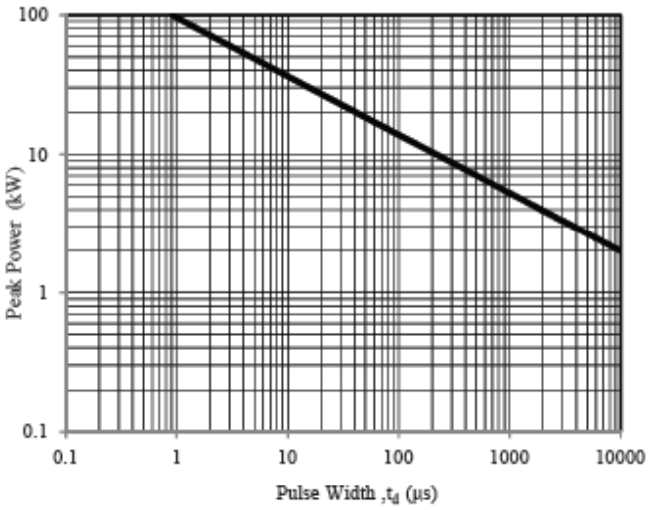


Fig. 4 - Peak Pulse Power Rating Curve

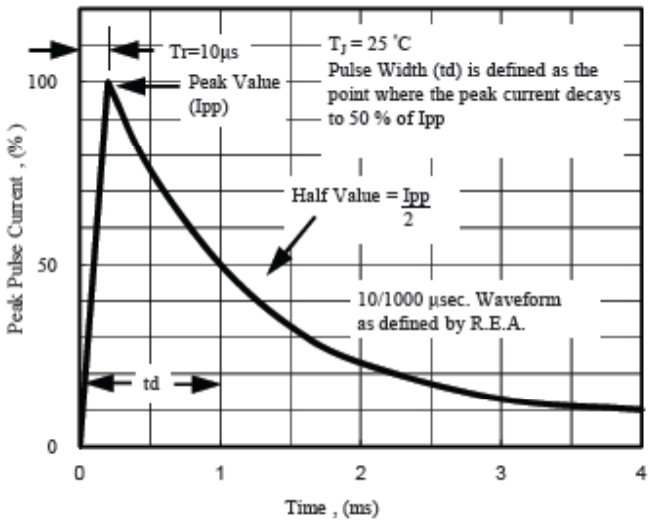


Fig. 5 - Pulse Waveform

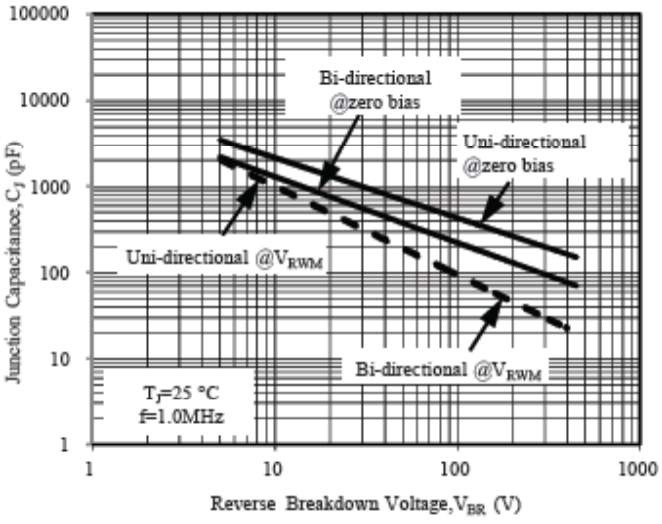
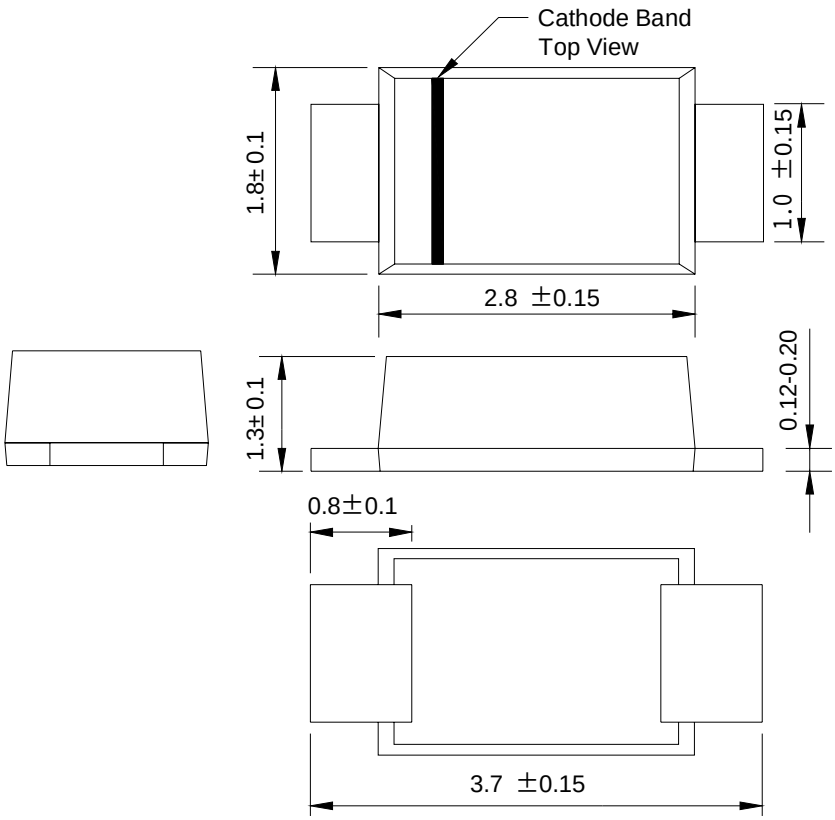


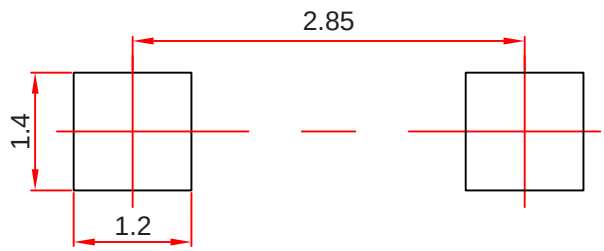
Fig. 6 - Typical Junction Capacitance

SOD-123FL Package Outline Dimensions



Dimensions in millimeters

SOD-123FL Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

Reel Taping Specifications For Surface Mount Devices-SOD-123FL

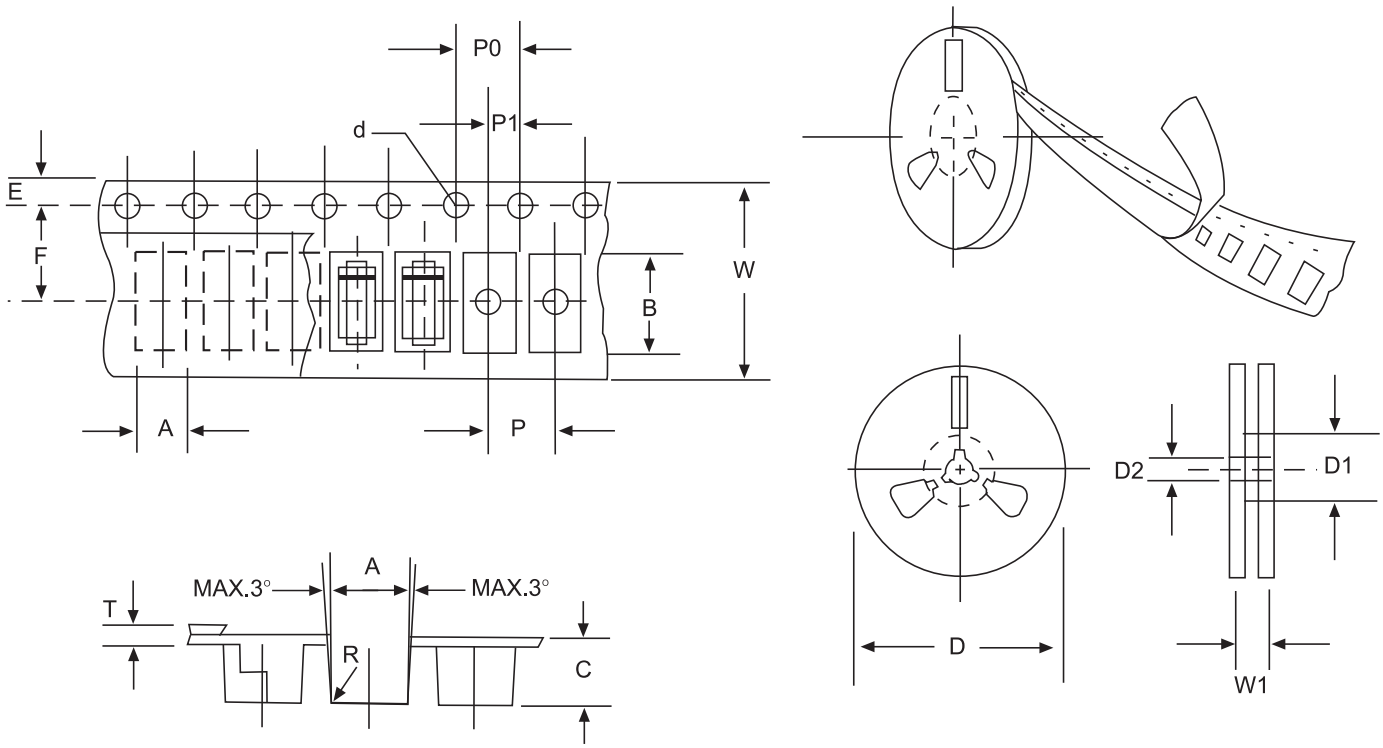


FIG:CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING

ITEM	SYMBOL	SOD-123FLmm(inch)
Carrier width	A	2.05±0.1(0.081±0.004)
Carrier length	B	3.95±0.1(0.156±0.004)
Carrier depth	C	1.45±0.1(0.057±0.004)
Sprocket hole	d	1.55±0.05(0.061±0.002)
Reel outside diameter	D	178±2.0(7.0±0.079)
Reel inner diameter	D1	54±1.0(2.13±0.039)
Feed hole diameter	D2	13±0.5(0.512±0.020)
Stroket hole position	E	1.75±0.1(0.069±0.004)
Punch hole position	F	3.50±0.1(0.138±0.002)
Punch hole pitch	P	4.0±0.1(0.157±0.004)
Sprocket hole pitch	P0	4.0±0.1(0.157±0.004)
Embossment center	P1	2.0±0.1(0.079±0.004)
Totall tape thickness	T	0.21±0.25(0.008±0.010)
Tape width	W	8.0±0.2(0.315±0.008)
Reel width	W1	10.0±2.0(0.394±0.079)

NOTE:Devices are packde in accordance with EIA standard RS-481-A and specification given above.