

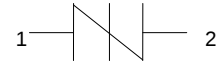
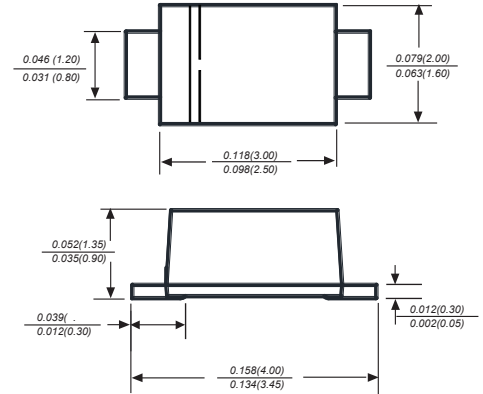
THYRISTOR SURGE SUPPRESSORS

Description

Thyristors are a type of semi—conduct component. They are designed to protect baseband equipment from damaging overvoltage transients.

Features

- Excellent capability of absorbing transient surge.
- Quick response to surge voltage (ns Level).
- Eliminates overvoltage caused by fast rising transients.
- Moisture sensitivity level: Level 1.
- IEC61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact).
- Non degenerative.

SOD-123FL


Dimensions in inches and (millimeters)

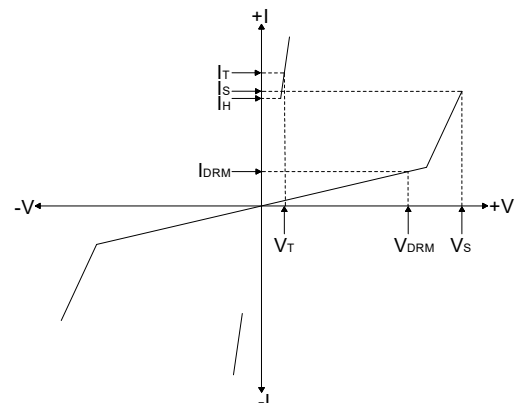
Absolute Maximum Ratings (Ta = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Value	Unit
Operating junction temperature range	T_J	-40 to +125	°C
Storage temperature range	T_{STG}	-40 to +125	°C
Repetitive peak pulse current@10/1000 μ s	I_{PP}	35	A
Typical Thermal Resistance	$R_{\theta JA}$	180	°C/W

Electrical Characteristics (Ta=25°C)

Symbol	Parameter
V_{DRM}	Peak off-state voltage
I_{DRM}	Off-state current
V_S	Switching voltage
I_S	Switching current
V_T	On-state voltage
I_T	On-state current
I_H	Holding current
C_O	Off-state capacitance

V-I Curve



Electrical Characteristics (Ta=25°C)

Parameter	I _{DRM} @V _{DRM}		V _S ⁽¹⁾ @I _S		V _T @ I _T		I _H	C _O ⁽²⁾	Marking
P0300DM	μA	V	V	mA	V	A	mA	pF	
	max	min	max	max	max	max	Typ	max	
	1	25	40	800	4	2.2	50	40	P03DA

- Note: (1)V_S is measured at 100KV/s
 (2)Off-state capacitance is measured in VDC=2V, VRMS=1V, f=1MHz

Surge Ratings

Type	Wave Sharp		VPP
IEC61000-4-5	Voltage	10/700μs	3000V

Soldering Parameters

Reflow Condition		Pb-Free assembly (see fig2)
Pre Heat	-Temperature Min (T _S (min))	+150°C
	-Temperature Max(T _S (max))	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp (T _L)to peak)		3°C/sec. Max
T _S (max) to T _L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T _L) (Liquidus)	+217°C
	-Temperature(t _L)	60-150 secs
Peak Temp (T _p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t _p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T _p)		8 min. Max
Do not exceed		+260°C

Typical Characteristics

fig1 tr × td pulse waveform

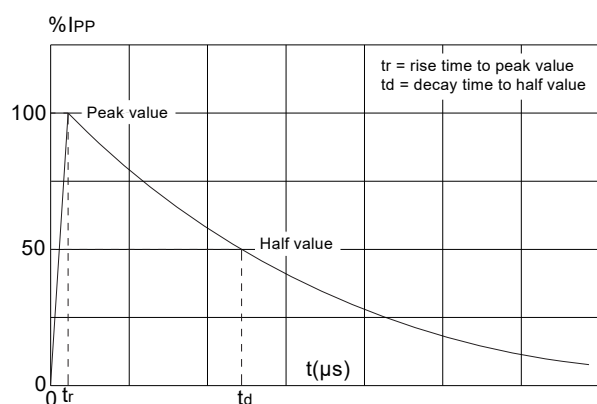


fig2 Reflow condition

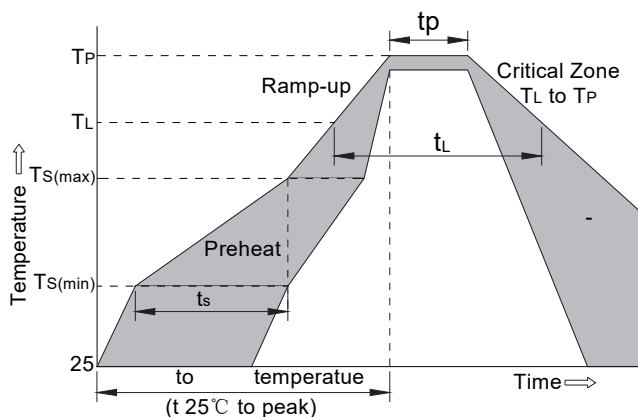


fig3 Normalized Vs change vs. junction temperature

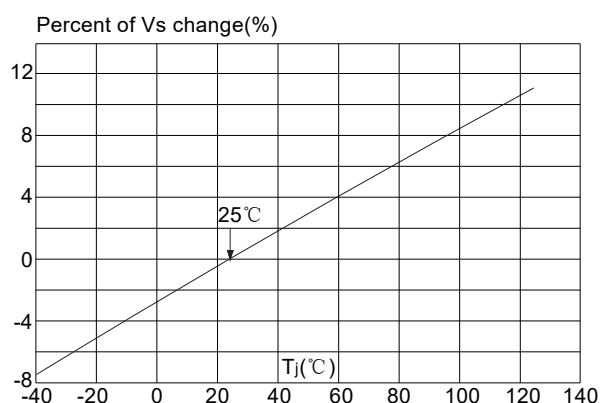
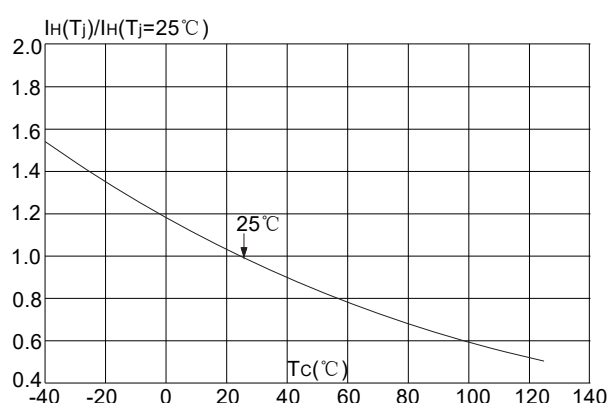
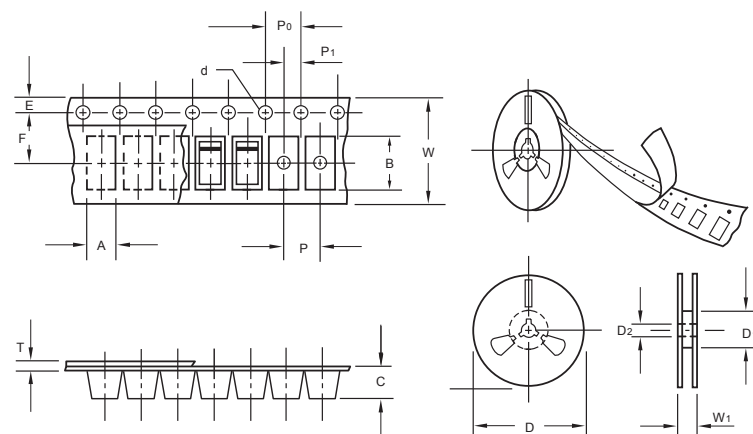


fig4 Normalized DC holding current vs. case temperature



The curve above is for reference only.

Packing information



unit:mm

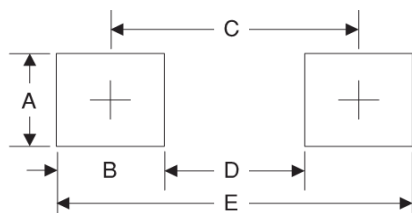
Item	Symbol	Tolerance	SOD-123FL
Carrier width	A	0.1	2.1
Carrier length	B	0.1	4.0
Carrier depth	C	0.1	1.60
Sprocket hole	d	0.05	1.55
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D1	min	50.0
Feed hole diameter	D2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Overall tape thickness	T	0.1	0.25
Tape width	W	0.3	8.15
Reel width	W1	1.0	10.5

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SOD-123FL	7"	3,000	4.0	45,000	190*190*190	178	400*400*220	180,000	9.0

Suggested Pad Layout



Symbol	Unit (mm)	Unit (inch)
A	1.2	0.047
B	1.2	0.047
C	3.2	0.126
D	2	0.079
E	4.4	0.173

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