

PXXXXDM Series SOD-123FL(SMF) ROHS

@10/700μS, 2KV

Thyristor Surge Suppressors (TSS)

Description

PXXXXDM Series are designed to protect broadband equipment such as modems, line card, CPE and DSL from damaging over-voltage transients. The series provides a surface mount solution that enables equipment to comply with global regulatory standards

Features and Benefits

- ◆ Excellent capability of absorbing transient surge
- ◆ Quick response to surge voltage (ns Level)
- ◆ Eliminates over voltage caused by fast rising transients
- ◆ Moisture sensitivity level: Level 1
- ◆ Weight 69 mg (approximate)
- ◆ Non degenerative
- ◆ Response Time is < 1us
- ◆ ROHS compliant

Applicable Global Standards

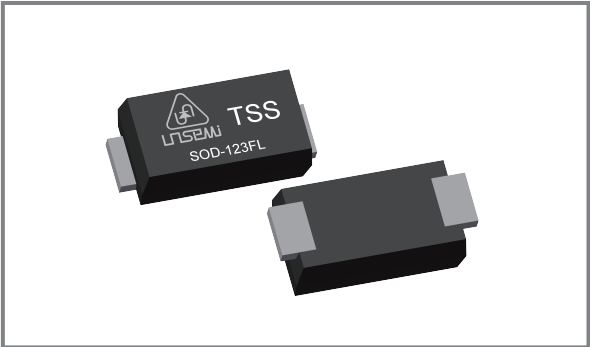
- ◆ TIA-968-A
- ◆ ITU K.20/21 Enhanced level
- ◆ ITU K.20/21 Basic Level
- ◆ GR 1089 Inter building
- ◆ IEC 61000-4-5
- ◆ YD/T 1082

Electrical Parameters

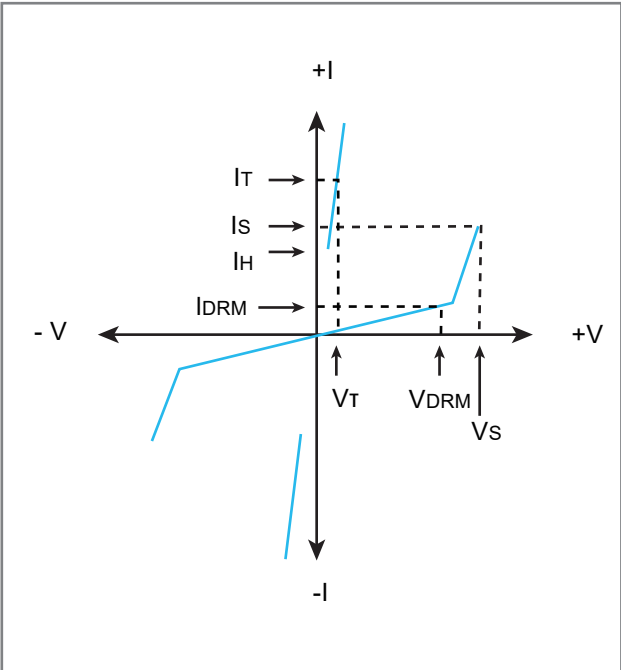
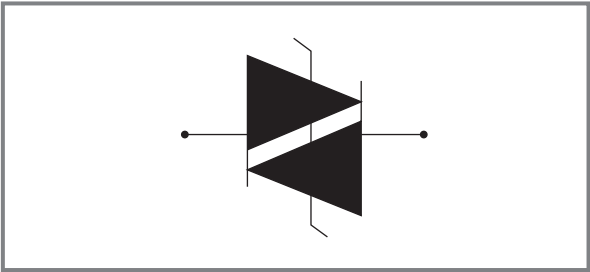
Parameter	Definition
IS	Switching Current - maximum current required to switch to on state
IDRM	Leakage Current - maximum peak off-state current measured at VDRM
IH	Holding Current - minimum current required to maintain on state
IT	On-state Current - maximum rated continuous on-state bcurrent
VS	Switching Voltage - maximum voltage prior to switching to on stat
VDRM	Peak Off-state Voltage - maximum voltage that can be applied while maintaining off state
VT	On-state Voltage - maximum voltage measured at rated on-state current
C0	Off-state Capacitance - typical capacitance measured in off state



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Schematic Symbol



Electrical Characteristics (@ 25°C Unless Otherwise Specified)

Part Number	Marking	V_{DRM} @ $I_{DRM}=5\mu A$	I_{DRM}	V_s @100V/ μ S	I_s	V_T @ $I_T=2.2A$	I_T	I_H	C_o @1MHz
		V Min.	μA Max.	V Max.	mA Max.	V Max.	A Max.	mA Min.	pF Typ.
P0080DM	P8M	6	5	25	800	4	2.2	50	50
P0300DM	P03DM	25	5	40	800	4	2.2	50	70
P0640DM	P06DM	58	5	77	800	4	2.2	150	50
P0720DM	P07DM	65	5	88	800	4	2.2	150	50
P0900DM	P09DM	75	5	98	800	4	2.2	150	45
P1100DM	P11DM	90	5	130	800	4	2.2	150	45
P1300DM	P13DM	120	5	160	800	4	2.2	150	45
P1500DM	P15DM	140	5	180	800	4	2.2	150	40
P1800DM	P18DM	170	5	220	800	4	2.2	150	40
P2000DM	P20DM	180	5	220	800	4	2.2	150	40
P2300DM	P23DM	190	5	260	800	4	2.2	150	35
P2600DM	P26DM	220	5	300	800	4	2.2	150	35
P3100DM	P31DM	275	5	350	800	4	2.2	150	30
P3500DM	P35DM	320	5	400	800	4	2.2	150	30
P3800DM	P38DM	360	5	460	800	4	2.2	150	30
P4200DM	P42DM	400	5	520	800	4	2.2	150	30

Notes:

- V_s is measured at 100KV/s
- Off-state capacitance is measured in VDC=2V, VRMS=1V, f=1MHz

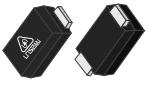
Surge Ratings

Series	2/10 μ S ¹	8/20 μ S ¹	10/160 μ S ¹	10/560 μ S ¹	10/1000 μ S ¹	5/320 μ S ¹	I_{TSM} 50/60Hz	di/dt
	2/10 μ S ²	1.2/50 μ S ²	10/160 μ S ²	10/560 μ S ²	10/1000 μ S ²	10/700 μ S ²		
	A min	A min	A min	A min	A min	A min	A min	Amps/ μ s max
A	100	100	60	15	15	50	10	500

Notes:

- Current waveform in μ s
 - Voltage waveform in μ s
- Peak pulse current rating (IPP) is repetitive and guaranteed for the life of the product.
 - IPP ratings applicable over temperature range of -40°C to +85°C
 - The device must initially be in thermal equilibrium with -40°C < T_J < +150°C

Thermal Considerations

Package	Symbol	Parameter	Value	Unit
	TJ	Operating Junction Temperature Range	- 40 to +125	°C
	Ts	Storage Temperature Range	- 60 to +150	°C
	R θ JA	Thermal Resistance: Junction to Ambient	90	°C/W

Characteristic Curves

Figure 1 - V - I Characteristics

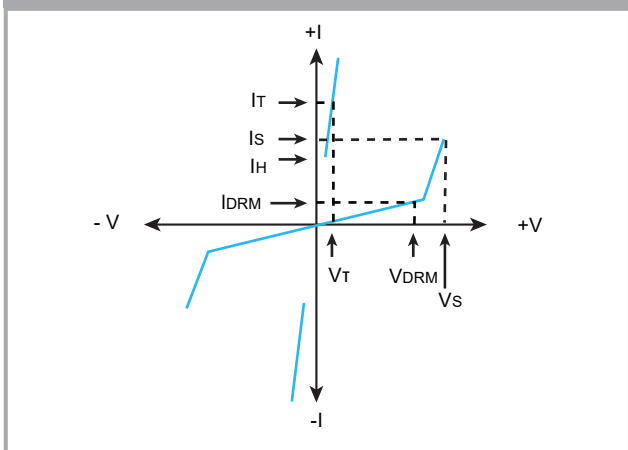


Figure 2 - $t_r \times t_d$ Pulse Waveform

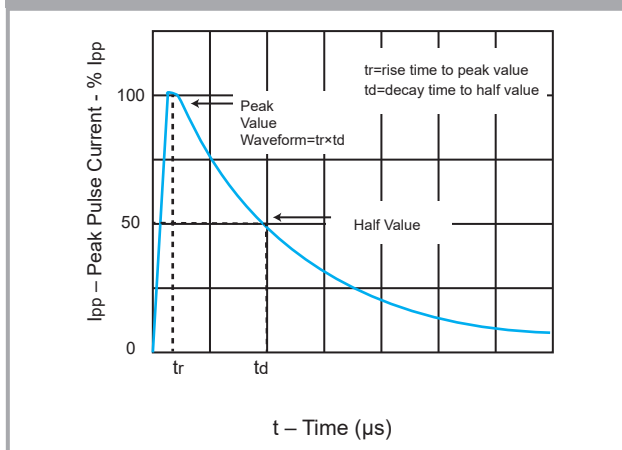


Figure 3 - Normalized VS Change Versus Junction Temperature

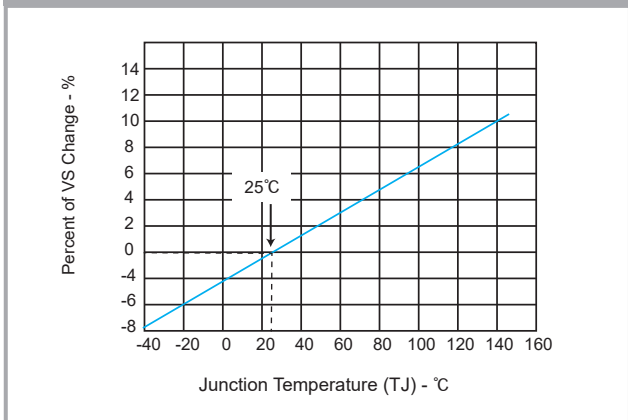
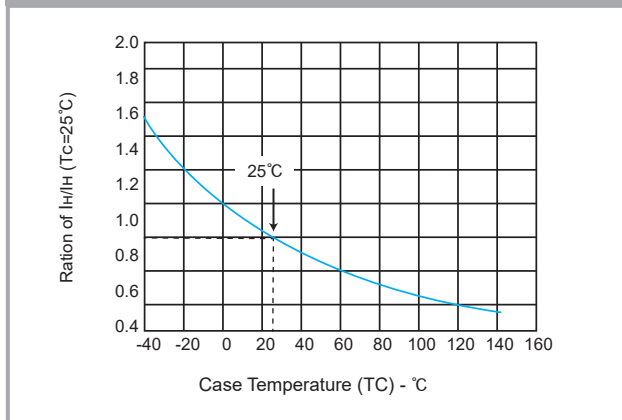
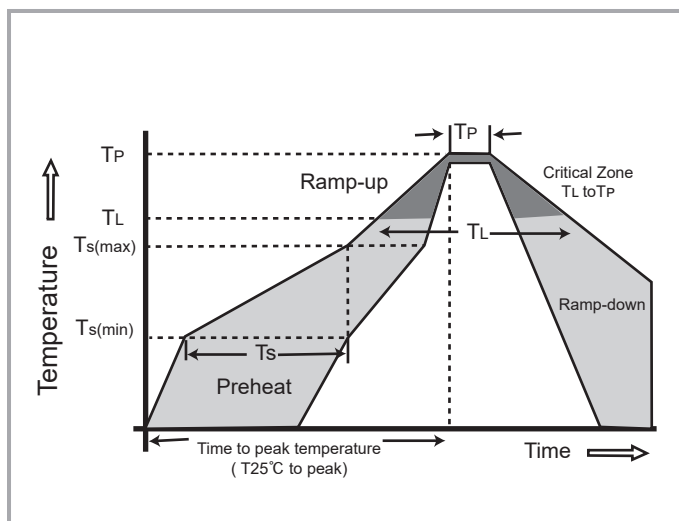


Figure 4 - Normalized DC Holding Current Versus Case Temperature

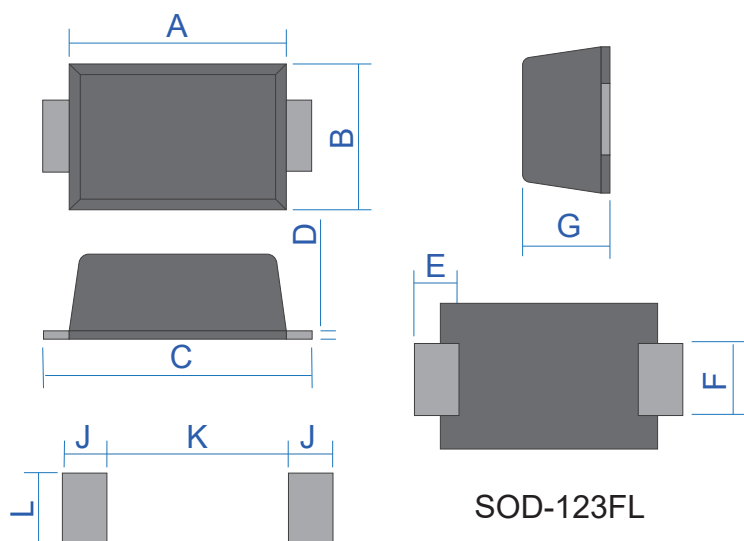


Soldering Parameters



Reflow Condition		Lead-free assembly
Pre Heat	-Temperature Min (Ts(min))	+150°C
	-Temperature Max (Ts(max))	+200°C
	- Time (min to max) (Ts)	60 -180 Seconds
Average ramp up rate (Liquidus Temp TL) to peak		3°C/Second max
Ts(max) to TL - Ramp-up Rate		5°C/Second max
Reflow	- Temperature (TL) (Liquidus)	217°C
	- Time (min to max) (Ts)	60 -150 Seconds
Peak Temperature (TP)		260 +0/-5°C
Time within 5°C of actual peak Temperature (TP)		30 Seconds Max
Ramp-down Rate		6°C/Second Max
Time 25°C to peak Temperature (TP)		8 minutes Max
Do not exceed		+260°C

Dimensions

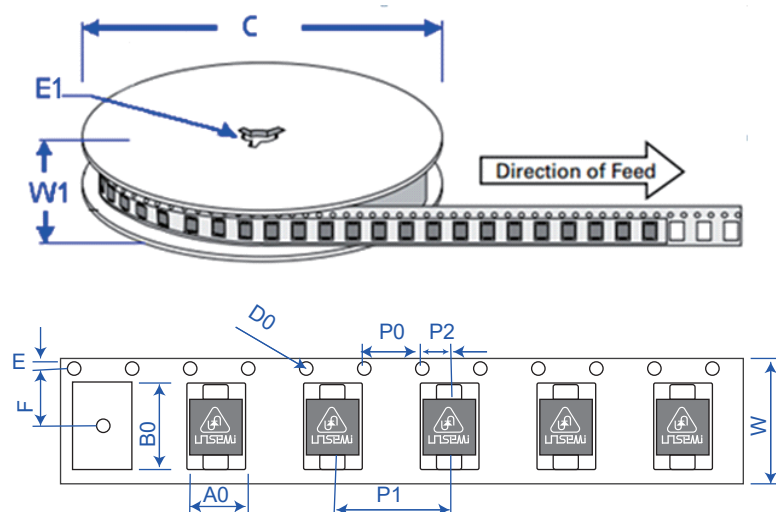


Ref.	Millimeters		Inches	
	Min	Max	Min	Max
A	2.60	3.00	0.102	0.118
B	1.60	2.00	0.063	0.079
C	3.45	3.95	0.136	0.156
D	0.10	0.25	0.004	0.010
E	0.30	0.90	0.012	0.035
F	0.80	1.20	0.031	0.047
G	0.95	1.35	0.037	0.053
J	1.30		0.051	
K		1.70		0.067
L	1.30		0.051	

Packaging

Part Number	Component Package	Quantity	Unit Weight (g/Pcs) typ.	Description
PXXXXDM	SOD-123FL	3000	0.0141	7 inch reel pack

Tape and Reel Specifications



Ref.	Dimensions	
	Millimeters	Inches
A0	1.95 ± 0.3	0.077 ± 0.012
B0	3.95 ± 0.3	0.156 ± 0.012
C	178	7.0
D0	1.55 ± 0.1	0.061 ± 0.004
E	1.75 ± 0.2	0.069 ± 0.008
E1	13.3 ± 0.3	0.524 ± 0.012
F	3.50 ± 0.2	0.138 ± 0.008
P0	4.00 ± 0.2	0.157 ± 0.008
P1	4.00 ± 0.2	0.157 ± 0.008
P2	2.00 ± 0.2	0.079 ± 0.008
W	8.0 ± 0.2	0.315 ± 0.008
W1	11.5 ± 1.0	0.453 ± 0.039

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