



P0450DM

THYRISTOR SURGE SUPPRESSORS

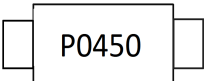

1. Description

P0450DM is a type of semiconductor component. It is designed to protect baseband equipment from damaging overvoltage transients, such as Industrial equipment , Electronic detonator and more.

2. Features

- Low profile package.
- Low on-state voltage.
- Excellent capability of absorbing transient surge.
- Quick response to surge voltage (ns Level).
- IEC61000-4-5 2KV (10/700μs)
- Moisture sensitivity level: Level 1.

3 . Pinning information

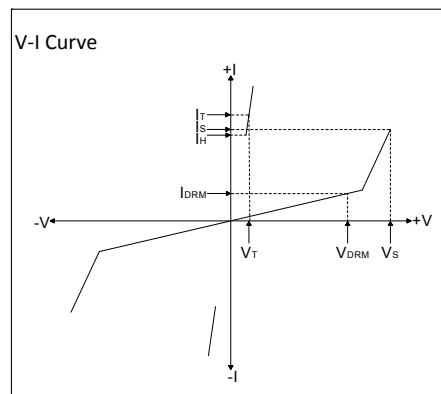
Simplified outline	Equivalent Circuit	Marking	Package
		P0450	SOD123-FL

4. Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	T_J	-40~+125	$^{\circ}\text{C}$
Operating junction temperature range	T_{stg}	-55~+150	$^{\circ}\text{C}$
Repetitive peak pulse current@10/1000 uS	I_{pp}	35	A

5. ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol
Peak off-state voltage	V_{DRM}
Off-state current	I_{DRM}
Switching voltage	V_s
Switching current	I_s
On-state voltage	V_T
On-state current	I_T
Holding current	V_H
Off-state capacitance	C_o



6. ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, Continued)

Part Number	$I_{DRM}@V_{DRM}$		$V_S @ I_S$		$V_T @ I_T$		I_H	C_o	$V_{PP}@ 10/700\mu\text{s}$	$I_{PP}@ 10/1000\mu\text{s}$
	μA	V	V	mA	V	A	mA	pF	V	A
	max		max	max	max	max	Min	max	Min	Min
P0450DM	1	36	60	800	4	2.2	20	30	2000	35

. V_S is measured at 100kV/s

②. Off-state capacitance is measured in $V_{DC}=2\text{V}$, $V_{RMS}=1\text{V}$, $f=1\text{MHz}$

7. Typical Characteristics

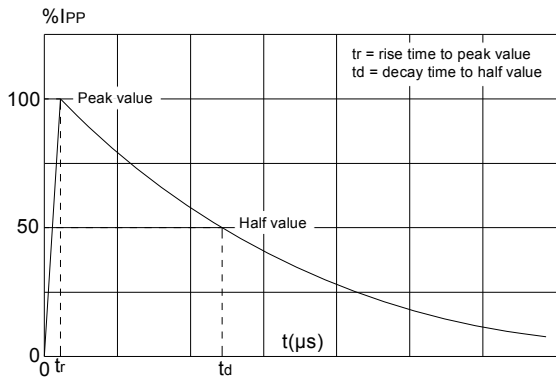


Figure 1 . $T_{tr} \times t_d$ pulse waveform

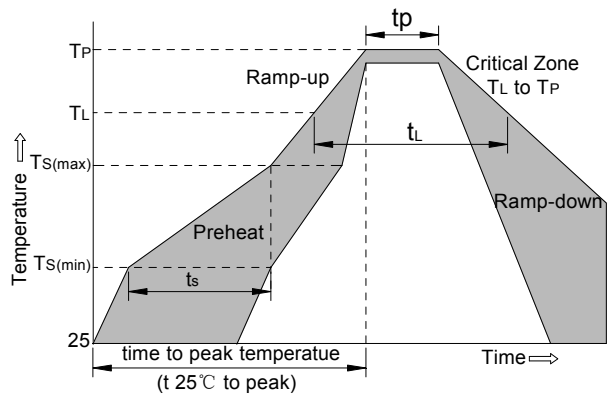


Figure 2 . Reflow condition

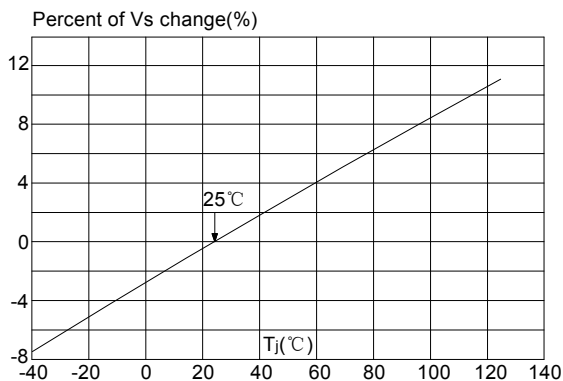


Figure 3 . Normalized V_S change vs. junction temperature

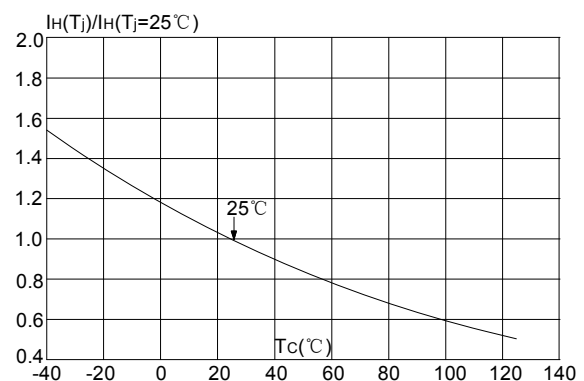


Figure 4 . Normalized DC holding current vs. case temperature

The curve above is for reference only.

8.SOLDERING PARAMETERS

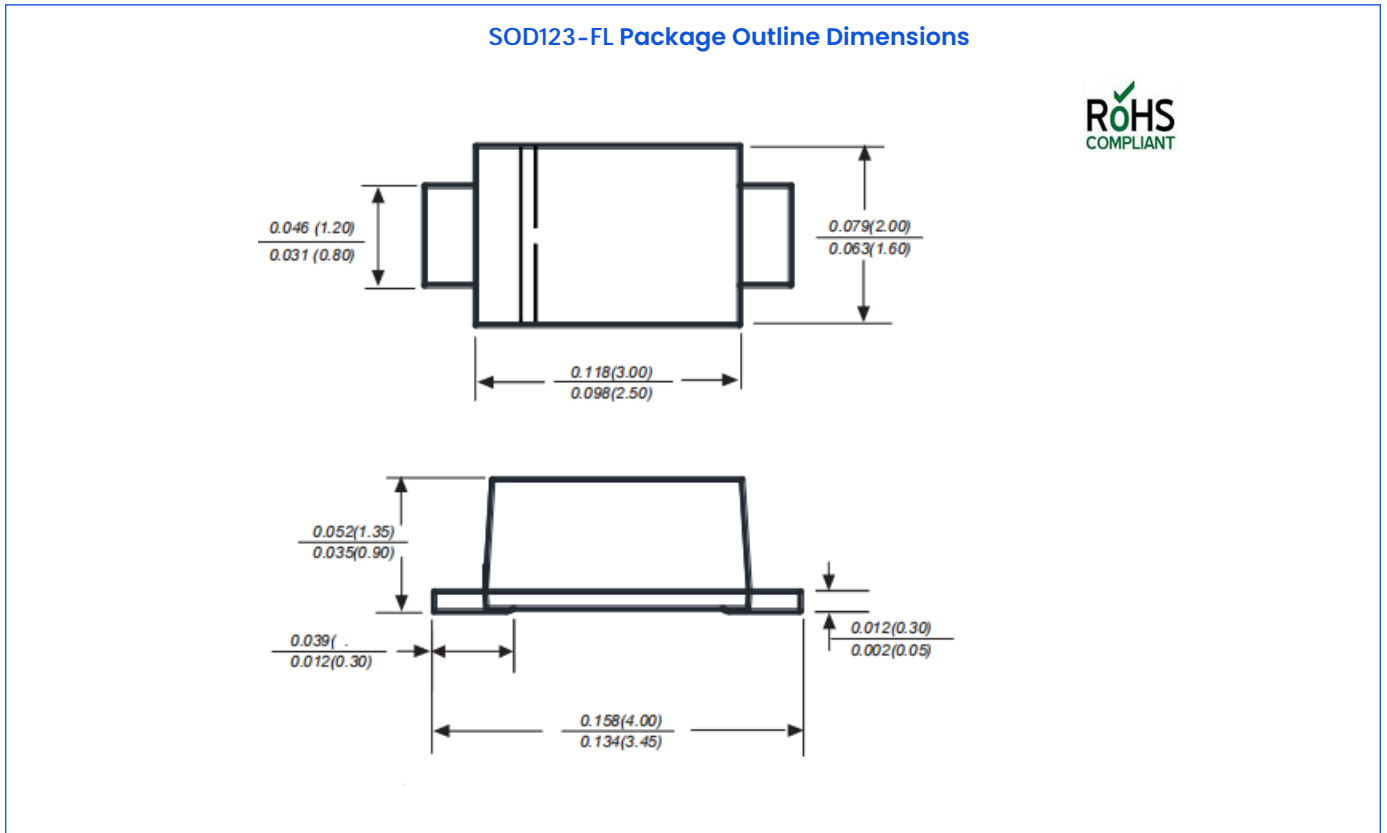
Reflow Condition		Pb-Free assembly (see FIG.2)
Pre Heat	-Temperature Min ($T_{S(min)}$)	+150°C
	-Temperature Max($T_{S(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp (T) to peak)		3°C/sec. Max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature (T_L)(Liquidus)	+217°C
	-Temperature (t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5% of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25% to Peak Temp(T_p)		8 min. Max
Do not exceed		+260°C

9.Surge Ratings

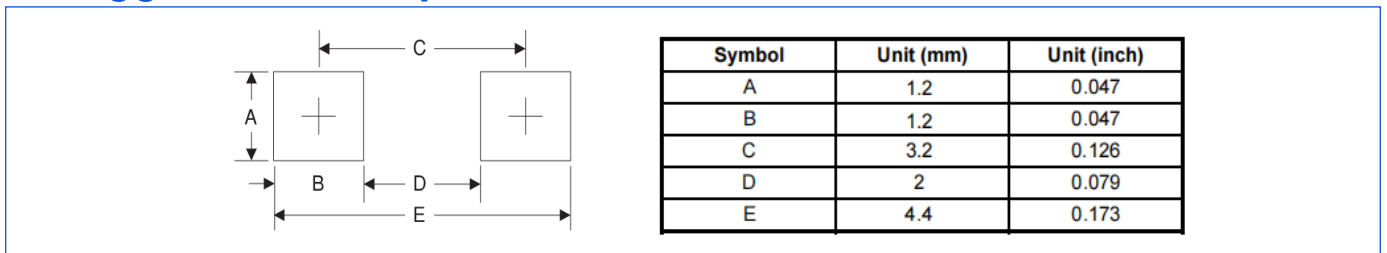
Current Waveform	5/320µs*	10/1000µs	8/20µs	2/10µs
Voltage Waveform	10/700µs*	10/1000µs	1.2/50µs	2/10µs
I_{pp}	50A	35A	90A	100A

* MDD makes the test for 5/320µs @50A*(10/700µs 2KV,40%)

10. Outline Drawing



11. Suggested Pad Layout



12. PACKAGE SPECIFICATIONS

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (mm)	BOX (pcs)	INNER BOX (mm)	REEL DIA, (mm)	CARTON SIZE (mm)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SOD123-FL	7	3,000	4.0	45000	190*190*190	178	400*400*220	180,000	9.0

12.Important Notice and Disclaimer

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