

P0120SD

THYRISTOR SURGE SUPPRESSORS

1. Description

P0120SD is a type of semiconductor component. It is designed to protect baseband equipment from damaging overvoltage transients, such as modems, telephones, line cards, answering machines, FAX machines, T1/E1, xDSL and more.

2. Features

- Low profile package.
- Low on-state voltage.
- Excellent capability of absorbing transient surge.
- Quick response to surge voltage (ns Level).
- Eliminates overvoltage caused by fast rising transients.
- UL 497B item recognized. (File No.:E480698).
- IEC61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact).
- Moisture sensitivity level: Level 1.
- Non degenerative.

3. Pinning information

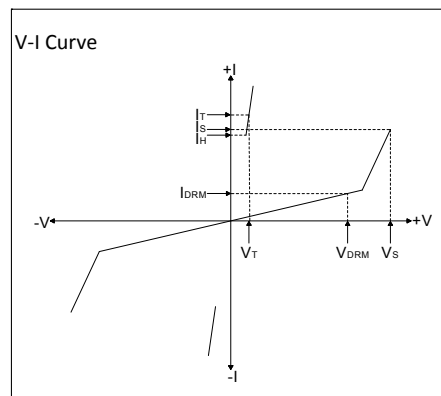
Pin	Symbol	Description	Simplified outline	Equivalent Circuit	Marking	Package
1	-	Cathode			MDD P12D XXY:Date Code	SMB
2	+	Anode				

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}	-60 ~+150	$^\circ\text{C}$
Repetitive peak pulse current@10/1000 μs	I_{pp}	150	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	typ	max	Min	Min
P0120SD	1	12	16	800	4	2.2	10	150	8000	150

. 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

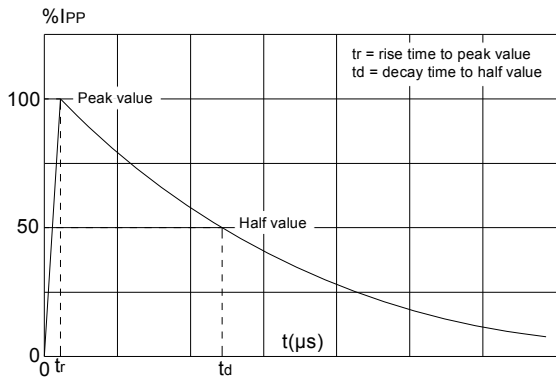


Figure 1 . $T_{tr} \times t_d$ pulse waveform

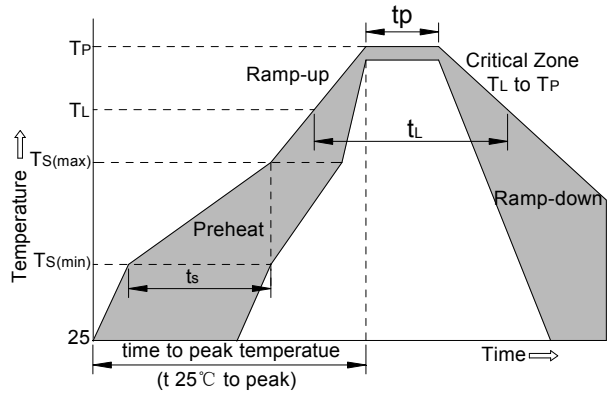


Figure 2 . Reflow condition

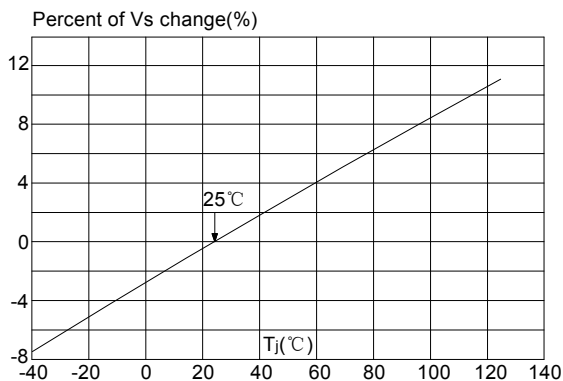


Figure 3 . Normalized V_S change vs. junction temperature

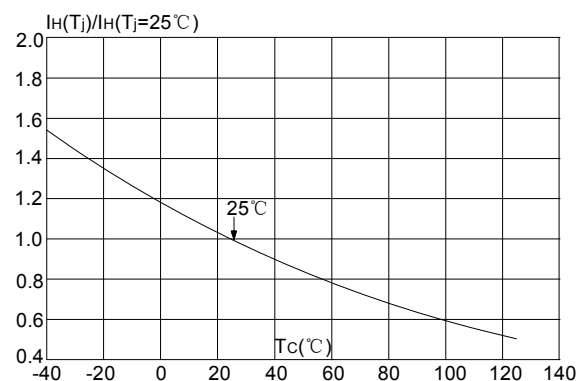


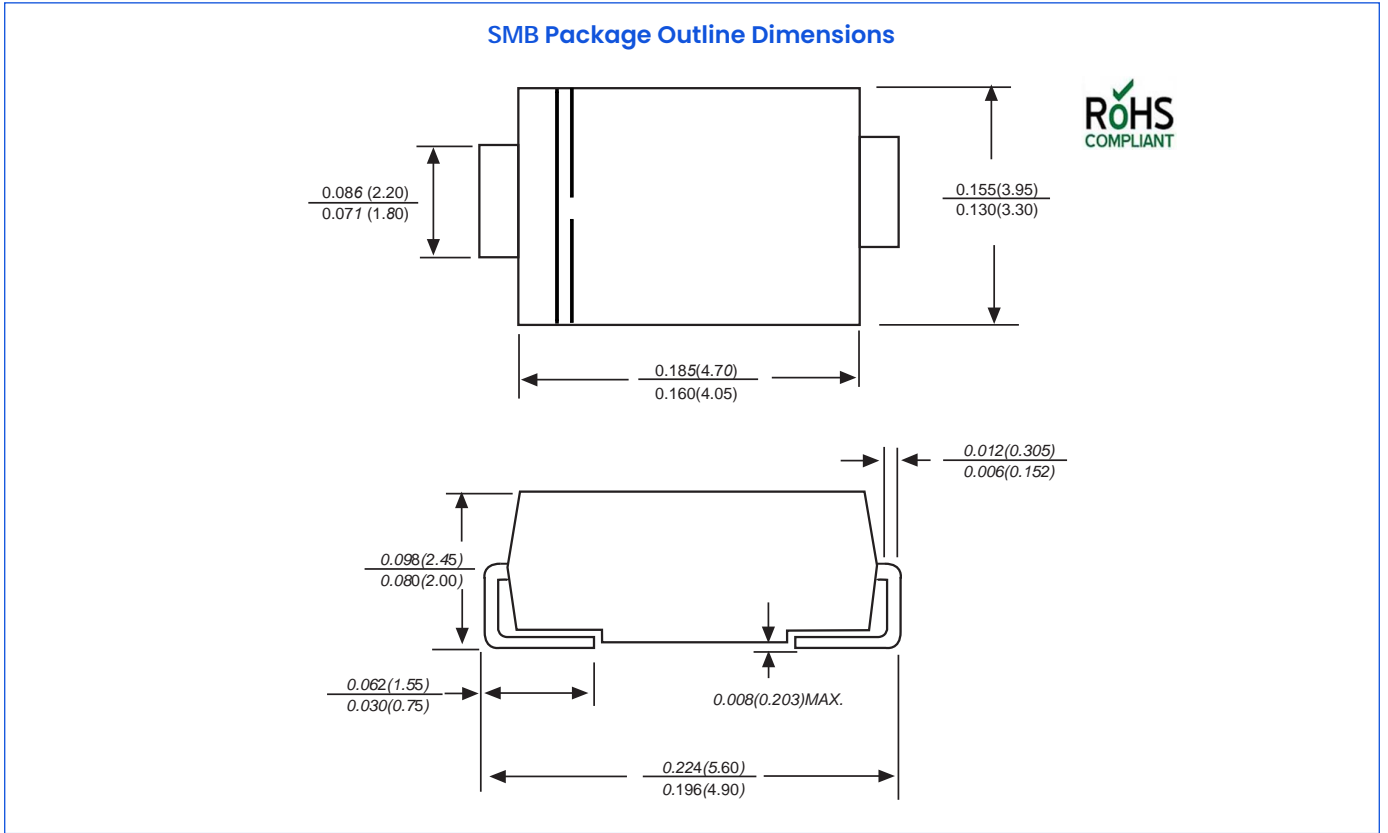
Figure 4 . Normalized DC holding current vs. case temperature

The curve above is for reference only.

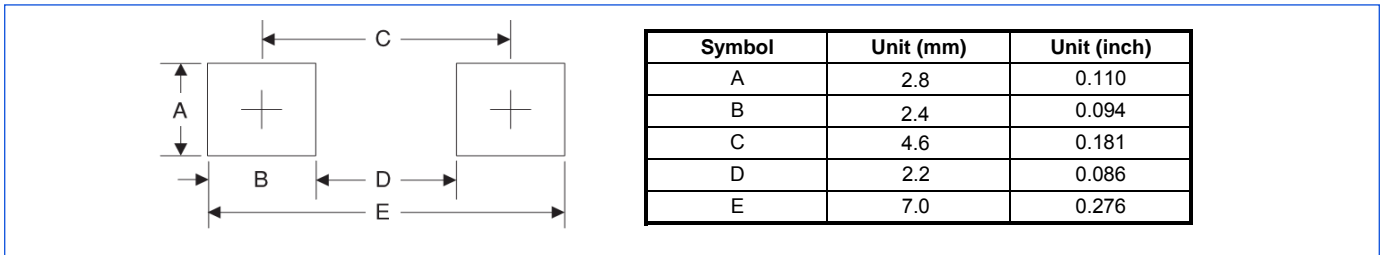
8.SOLDERING PARAMETERS

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. Outline Drawing



10. Suggested Pad Layout



11. 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)
SMB	13"	3,000	4.0	6,000	190*190*41	330	365*365*360	48,000	14.0

12.Important Notice and Disclaimer

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