



Jiangsu Weida Semiconductor Co., Ltd.

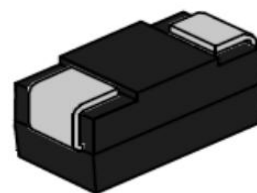
PXXXXSB Series TSS

DESCRIPTION:

PxxxxSB series thyristors are a type of semiconductor component. They are designed to protect baseband equipment from damaging overvoltage transients. Such as modems, telephones, line cards, answering machines, FAX machines, T1/E1, xDSL and more.

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.
- ◆ Moisture sensitivity level: Level 1
- ◆ Non degenerative.



SMB



Symbol

ABSOLUTE MAXIMUM RATINGS($T_A=25^{\circ}\text{C}$, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	T_{STG}	-60 to +150	$^{\circ}\text{C}$
Operating junction temperature range	T_J	-40 to +125	$^{\circ}\text{C}$
Repetitive peak pulse current	I_{PP}	80	A

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

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($T_A=25^{\circ}\text{C}$, continued)

Part Number	$I_{\text{DRM}}@V_{\text{DRM}}$		$V_S^{①}@I_S$		$V_T@I_T$		I_H	$C_o^{②}$
	μA	V	V	mA	V	A	mA	pF
	max		max	max	max	max	min	max
P0080SB	1	6	15	800	4	2.2	30	100
P0300SB	1	25	40	800	4	2.2	30	80
P0640SB	1	58	77	800	4	2.2	120	80
P0720SB	1	66	87	800	4	2.2	120	75
P0900SB	1	75	98	800	4	2.2	120	70
P1100SB	1	90	130	800	4	2.2	120	70
P1300SB	1	120	160	800	4	2.2	120	60
P1500SB	1	140	180	800	4	2.2	120	55
P1800SB	1	170	220	800	4	2.2	120	50
P2300SB	1	190	260	800	4	2.2	120	50
P2600SB	1	220	300	800	4	2.2	120	45
P3100SB	1	275	350	800	4	2.2	120	45
P3500SB	1	320	400	800	4	2.2	120	40
P4200SB	1	400	500	800	4	2.2	120	40

① V_S is measured at 100KV/s

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

SURGE RATINGS

Series	I_{PP} (A) min			
	$2\times 10\mu\text{s}$	$8\times 20\mu\text{s}$	$10\times 360\mu\text{s}$	$10\times 1000\mu\text{s}$
B	250	250	125	80



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ORDERING INFORMATION

P	008	0	S	B
Series code P: SIDACTor	Median voltage	0: Bi-direction 1: Uni-direction	Package type	Surge ratings:4KV(10/700μs)

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) (t_s)	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



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FIG.1: $t_r \times t_d$ pulse waveform

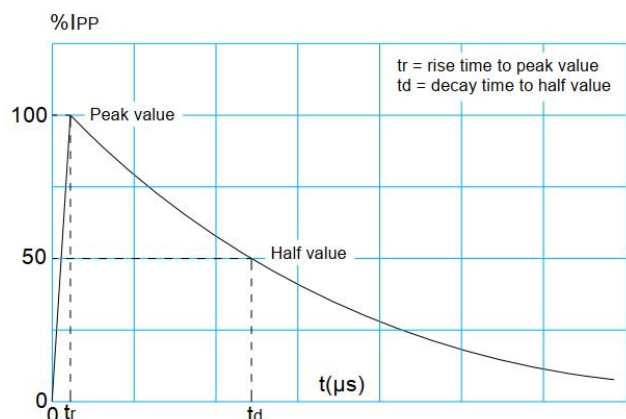


FIG.2: Reflow condition

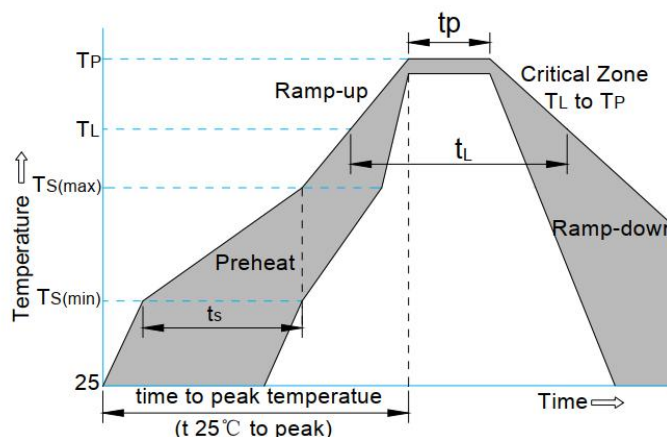


FIG.3: Normalized V_s change vs. junction temperature

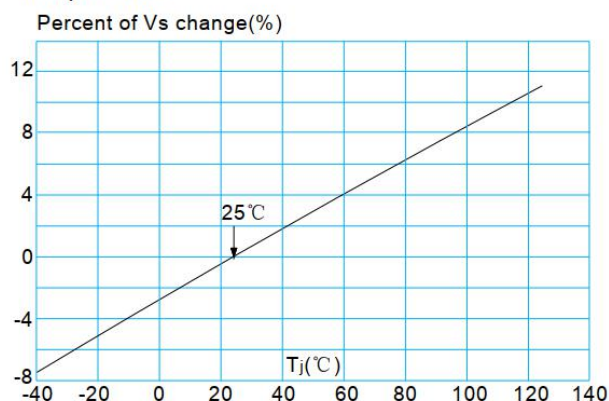
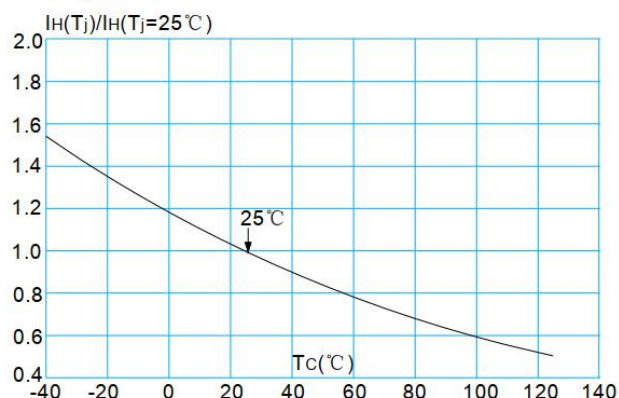
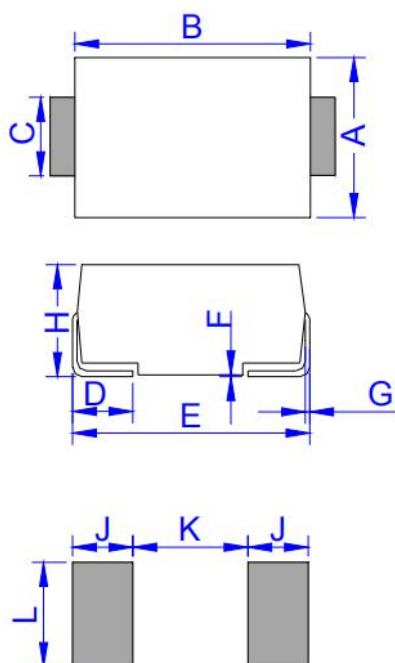


FIG.4: Normalized DC holding current vs. case temperature



PACKAGE MECHANICAL DATA



DO-214AA (SMB)

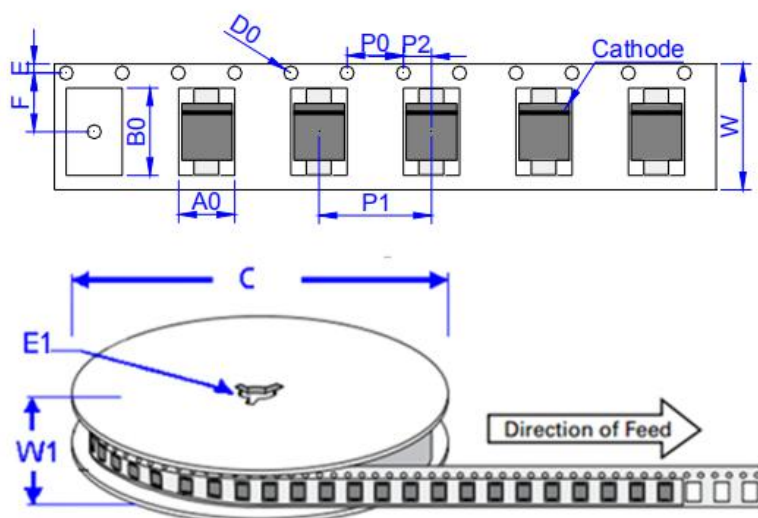
Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.30	3.94	0.130	0.155
B	4.30	4.80	0.169	0.189
C	1.90	2.20	0.075	0.087
D	0.95	1.52	0.037	0.060
E	5.20	5.60	0.205	0.220
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.10	2.40	0.083	0.094
J	2.20		0.087	
K		2.60		0.102
L	2.30		0.091	



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TAPE AND REEL SPECIFICATION - SMB



Ref.	Dimensions	
	Millimeters	Inches
A0	3.76 ± 0.3	0.148 ± 0.012
B0	5.69 ± 0.3	0.224 ± 0.012
C	330.0	13.0
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	5.5 ± 0.2	0.217 ± 0.008
P0	4.00 ± 0.2	0.157 ± 0.008
P1	8.00 ± 0.2	0.3145 ± 0.008
P2	2.00 ± 0.2	0.079 ± 0.008
W	12.0 ± 0.2	0.472 ± 0.008
W1	15.7 ± 2.0	0.618 ± 0.079

OUTLINE	UNIT WEIGHT (g/PCS) typ.	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)
TAPING	0.098	3,000	48,000	330

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