



### DESCRIPTION:

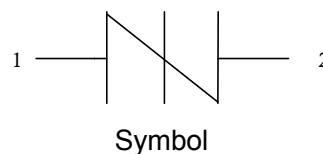
PxxxxSB series thyristors are a type of semi-conduct component. They are designed to protect baseband equipment from damaging overvoltage transients. such as modems, telephones, line cards, answering machines, FAX machines, T1/E1, xDSL and more.



SMB

### 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
- ✧ Non degenerative

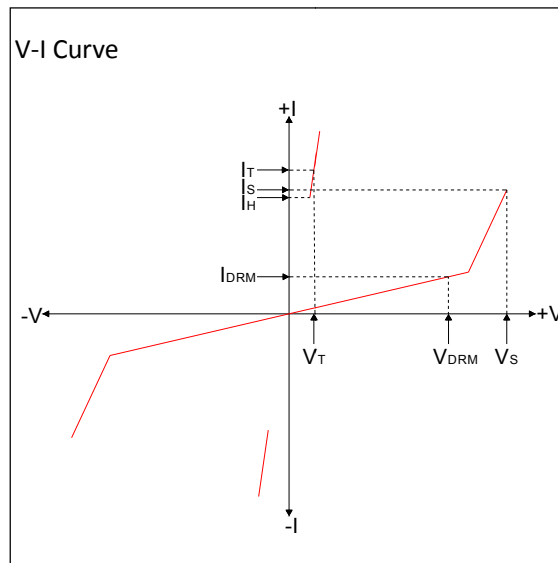


### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	T <sub>stg</sub>	-60 to +150	°C
Operating junction temperature range	T <sub>j</sub>	-40 to +125	°C
Repetitive peak pulse current	I <sub>PP</sub>	80	A

### ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C)

Symbol	Parameter
V <sub>DRM</sub>	Peak off-state voltage
I <sub>DRM</sub>	Off-state current
V <sub>S</sub>	Switching voltage
I <sub>S</sub>	Switching current
V <sub>T</sub>	On-state voltage
I <sub>T</sub>	On-state current
I <sub>H</sub>	Holding current
C <sub>O</sub>	Off-state capacitance



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

Part Number	$I_{\text{DRM}}@V_{\text{DRM}}$		$V_S^{\text{①}}@I_S$		$V_T@I_T$		$I_H$	$C_O^{\text{②}}$	Marking
	$\mu\text{A}$	V	V	mA	V	A	mA	pF	
	max		max	max	max	max	min	max	
P0080SB	5	6	25	800	4	2.2	30	130	P-8B
P0220SB	5	18	30	800	4	2.2	30	120	P22B
P0300SB	5	25	40	800	4	2.2	30	120	P03B
P0640SB	5	58	77	800	4	2.2	120	80	P06B
P0720SB	5	66	87	800	4	2.2	120	75	P07B
P0900SB	5	75	98	800	4	2.2	120	70	P09B
P1100SB	5	90	130	800	4	2.2	120	70	P11B
P1300SB	5	120	160	800	4	2.2	120	60	P13B
P1500SB	5	140	180	800	4	2.2	120	55	P15B
P1800SB	5	170	220	800	4	2.2	120	50	P18B
P2300SB	5	190	260	800	4	2.2	120	50	P23B
P2600SB	5	220	300	800	4	2.2	120	45	P26B
P3100SB	5	275	350	800	4	2.2	120	45	P31B
P3500SB	5	320	400	800	4	2.2	120	40	P35B
P3800SB	5	340	450	800	4	2.2	120	40	P38B

①  $V_S$  is measured at 100KV/s② Off-state capacitance is measured in  $V_{\text{DC}}=2\text{V}$ ,  $V_{\text{RMS}}=1\text{V}$ ,  $f=1\text{MHz}$ 

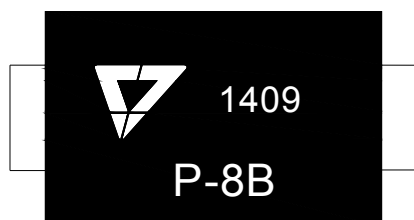
## SURGE RATINGS

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

**ORDERING INFORMATION**

<b>P</b> Series code P: SIDACTor Median voltage	<b>008</b> Surge ratings:4KV(10/700us)	<b>0</b> Package type 0: Bi-direction 1: Uni-direction	<b>S</b>	<b>B</b>
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**MARKING**



P-8B : Device Marking Code  
 1409: In ninth week, 2014

**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 (Liquid us Temp ( $T_L$ ) to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature( $T_L$ ) (Liquid us)	+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

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

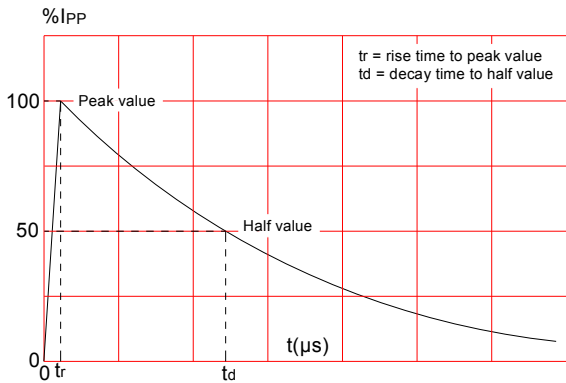


FIG.3: Normalized  $V_s$  change vs. junction temperature

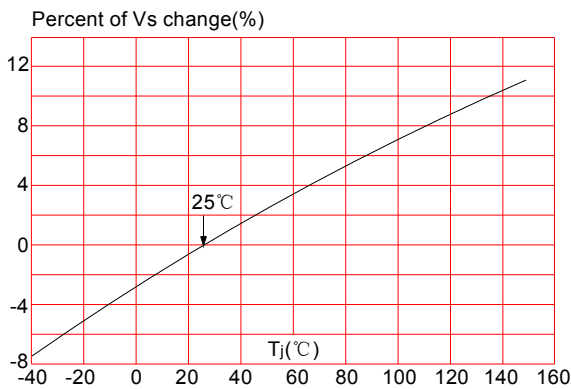


FIG.2: Reflow condition

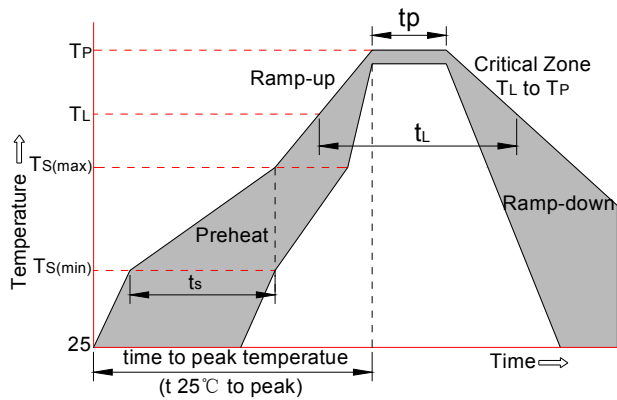
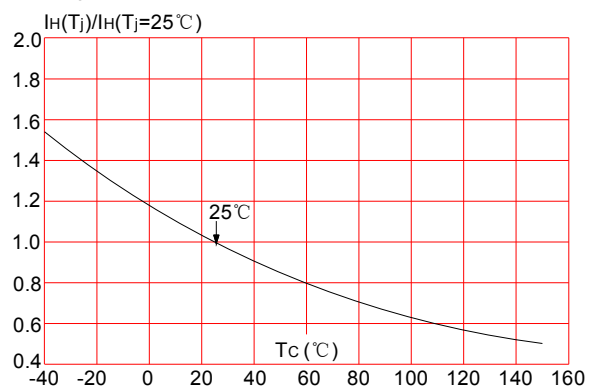
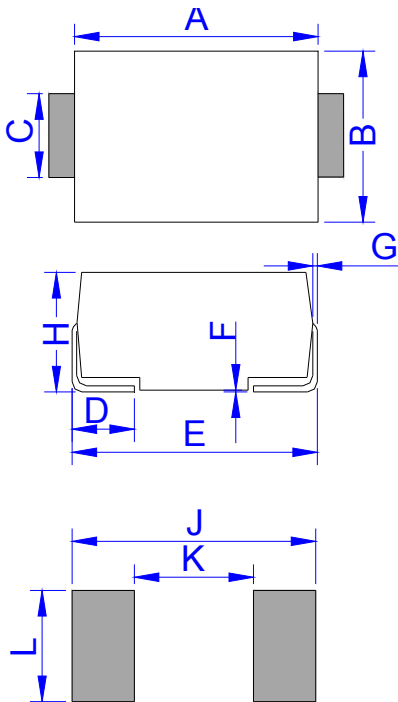


FIG.4: Normalized DC holding current vs. case temperature



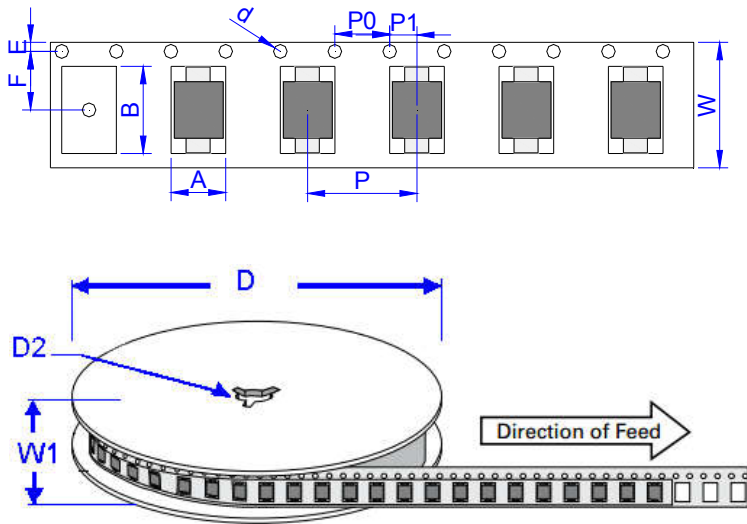
PACKAGE MECHANICAL DATA



DO-214AA (SMB)

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.25	4.75	0.167	0.187
B	3.30	3.94	0.130	0.155
C	1.85	2.21	0.073	0.087
D	0.76	1.52	0.030	0.060
E	5.08	5.59	0.200	0.220
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.11	2.44	0.083	0.096
J	6.80		0.270	
K		2.60		0.100
L	2.40		0.090	

TAPE AND REEL SPECIFICATION-SMB



Ref.	Dimensions	
	Millimeters	Inches
A	3.76 ± 0.2	0.144 ± 0.012
B	5.69 ± 0.2	0.244 ± 0.012
d	1.5 ± 0.25	0.059 ± 0.004
D	330.0	13.0
D2	13 ± 1	0.512 ± 0.039
E	1.75 ± 0.2	0.059 ± 0.008
F	5.5 ± 0.1	0.222 ± 0.008
P	8.0 ± 0.2	0.315 ± 0.008
P0	4.0 ± 0.2	0.157 ± 0.008
P1	2.0 ± 0.2	0.079 ± 0.008
W	12.0 ± 0.3	0.472 ± 0.008
W1	16.8 ± 2.0	0.661 ± 0.079

OUTLINE	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)
TAPING	3,000	48,000	330

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