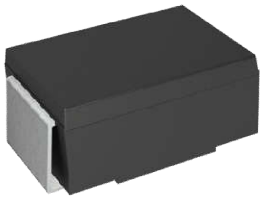
PxxxxSB Series

Rev.2.0

DESCRIPTION:

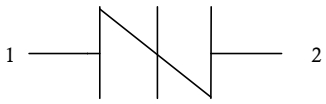
PxxxxSB series thyristors are a type of semi-conduct component. They are designed to protect baseband equipment from damaging overvoltage transients. such as modems, telephones, line cards, answering machines, FAX machines, T1/E1, xDSL and more.



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



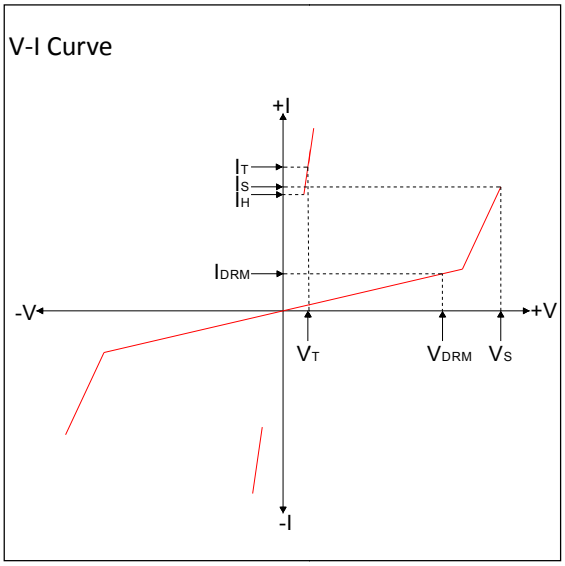
Symbol

ABSOLUTE MAXIMUM RATINGS (T_A=25ºC, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	T_{stg}	-60 to +150	℃
Operating junction temperature range	T_j	-40 to +125	℃
Repetitive peak pulse current	I_{PP}	80	A

ELECTRICAL CHARACTERISTICS (T_A=25℃)

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



ELECTRICAL CHARACTERISTICS (T_A=25℃, continued)

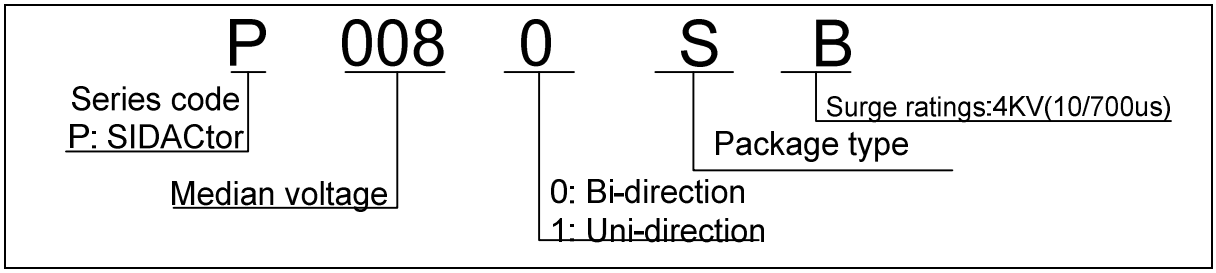
Part Number	I_{DRM}@V_{DRM}		V_S①@I_S		V_T@ I_T		I_H	C_O②	Marking
	μA	V	V	mA	V	A	mA	pF	
	max		max	max	max	max	min	max	
P0080SB	5	6	25	800	4	2.2	30	130	P-8B
P0220SB	5	18	30	800	4	2.2	30	120	P22B
P0300SB	5	25	40	800	4	2.2	30	120	P03B
P0640SB	5	58	77	800	4	2.2	120	80	P06B
P0720SB	5	66	87	800	4	2.2	120	75	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 Vs is measured at 100KV/s
② Off-state capacitance is measured in V_{DC}=2V, V_{RMS}=1V, f=1MHz

SURGE RATINGS

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

ORDERING INFORMATION



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℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

FIG.1: tr × td pulse waveform

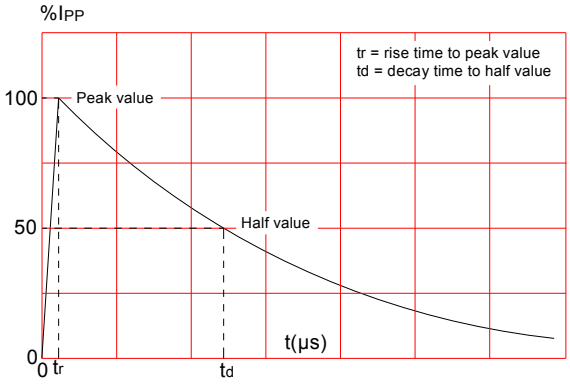


FIG.2: Reflow condition

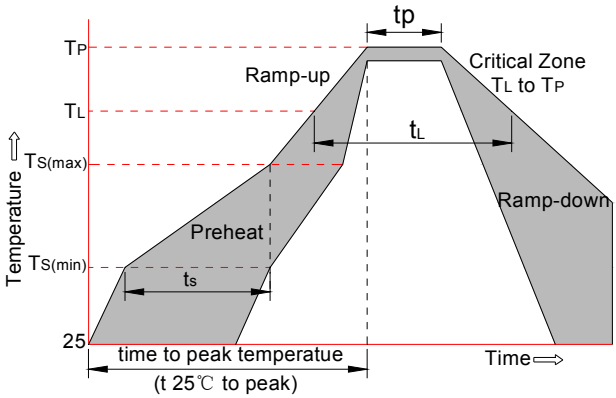


FIG.3: Normalized Vs change vs. junction temperature

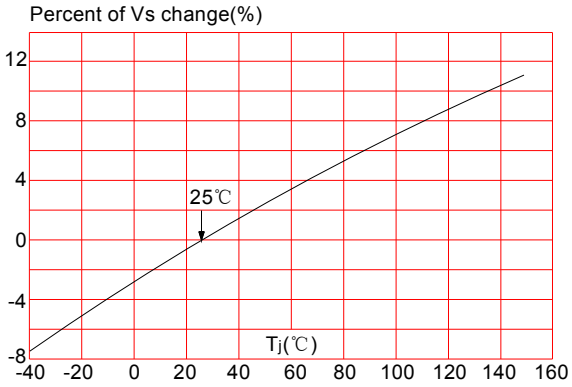
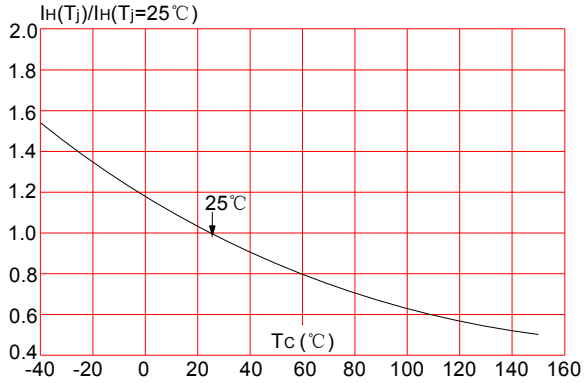
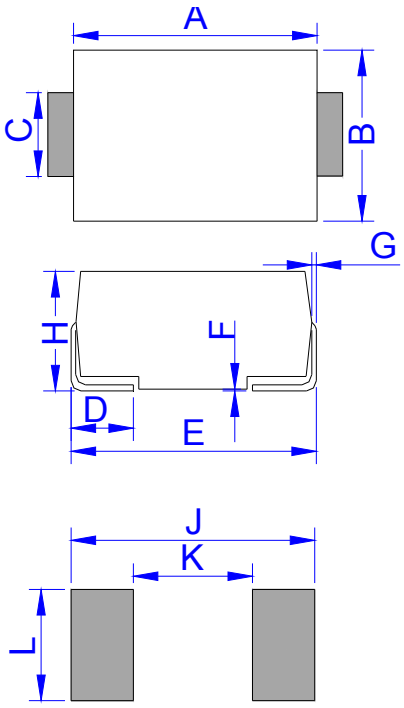


FIG.4: Normalized DC holding current vs. case temperature



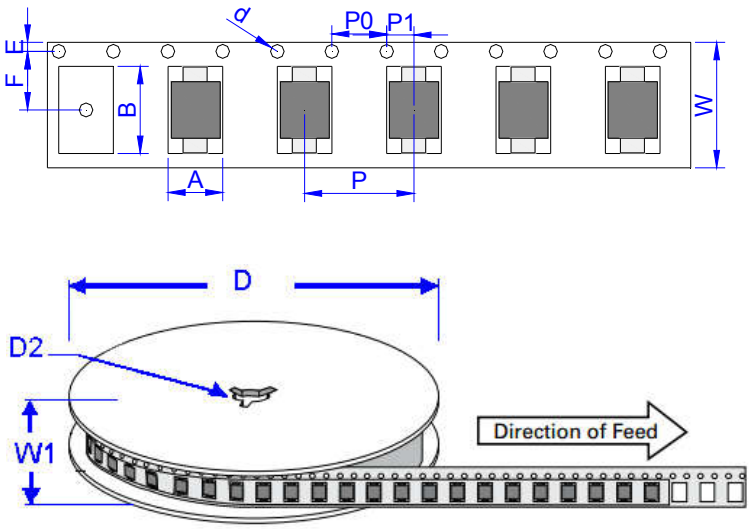
PACKAGE MECHANICAL DATA



DO-214AA (SMB)

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	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