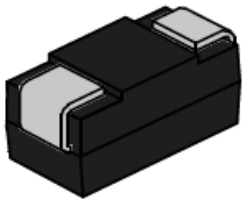
CPxxxxSB Series TSS

Rev.4.1

DESCRIPTION:

CPxxxxSB series thyristors are a type of semiconduct 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

Symbol

FEATURES:

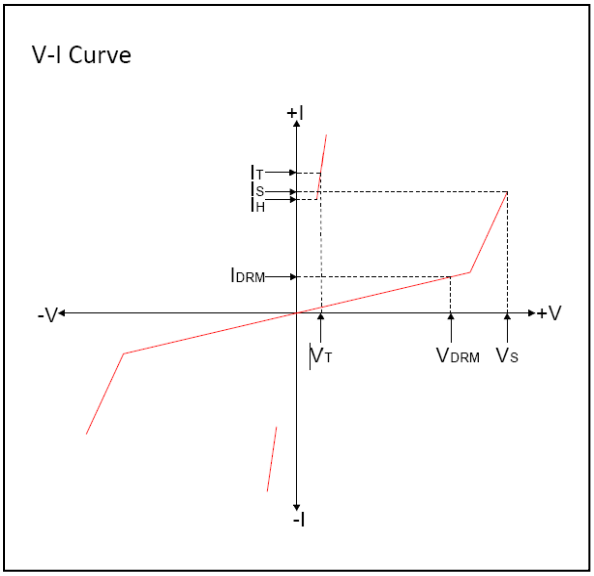
- ✧ Lower capacitance.
- ✧ Low profile package.
- ✧ Low on-state voltage.
- ✧ Excellent capability of absorbing transient surge.
- ✧ Quick response to surge voltage (ns Level).
- ✧ Eliminates overvoltage caused by fast rising transients.
- ✧ Moisture sensitivity level: Level 1.
- ✧ Non degenerative.

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

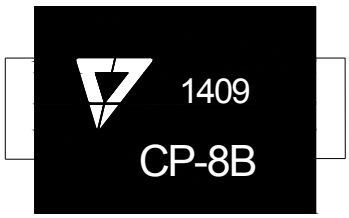
Parameter	Symbol	Value	Unit
Storage temperature range	T_{STG}	-60 to +150	℃
Operating junction temperature range	T_J	-40 to +125	℃
Repetitive peak pulse current	I_{PP}	80	A

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



MARKING



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

ELECTRICAL CHARACTERISTICS (T_A=25℃, continued)

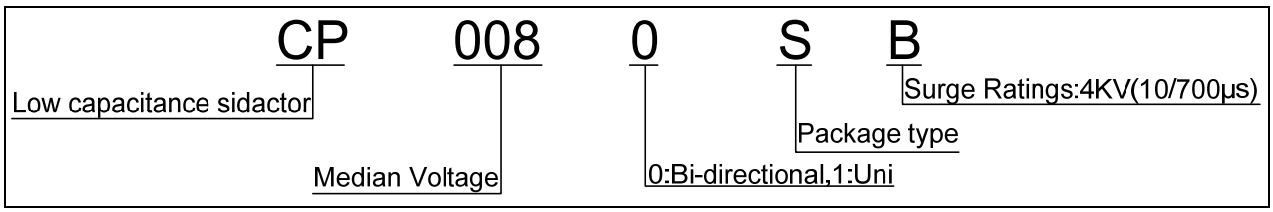
Part Number	I_{DRM}@V_{DRM}		V_S①@I_S		V_T@ I_T		I_H	C_O②	Marking
	μA	V	V	mA	V	A	mA	pF	
	max		max	max	max	max	min	max	
CP0080SB	1	6	15	800	4	2.2	30	50	CP-8B
CP0220SB	1	18	30	800	4	2.2	30	50	CP22B
CP0300SB	1	25	40	800	4	2.2	30	50	CP03B
CP0640SB	1	58	77	800	4	2.2	120	40	CP06B
CP0720SB	1	66	87	800	4	2.2	120	40	CP07B
CP0900SB	1	75	98	800	4	2.2	120	40	CP09B
CP1100SB	1	90	130	800	4	2.2	120	35	CP11B
CP1300SB	1	120	160	800	4	2.2	120	35	CP13B
CP1500SB	1	140	180	800	4	2.2	120	35	CP15B
CP1800SB	1	170	220	800	4	2.2	120	35	CP18B
CP2300SB	1	190	260	800	4	2.2	120	30	CP23B
CP2600SB	1	220	300	800	4	2.2	120	30	CP26B
CP3100SB	1	275	350	800	4	2.2	120	25	CP31B
CP3500SB	1	320	400	800	4	2.2	120	25	CP35B
CP3800SB	1	340	450	800	4	2.2	120	25	CP38B

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			
	2×10μs	8×20μs	10×360μs	10×1000μs
B	250	250	125	80

ORDERING INFORMATION



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 (Liquidus Temp(T_L)to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquidus)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃of actual Peak Temp (t_p)		30secs. 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

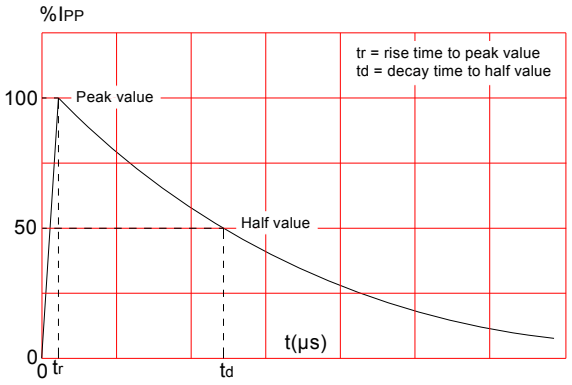


FIG.2: Reflow condition

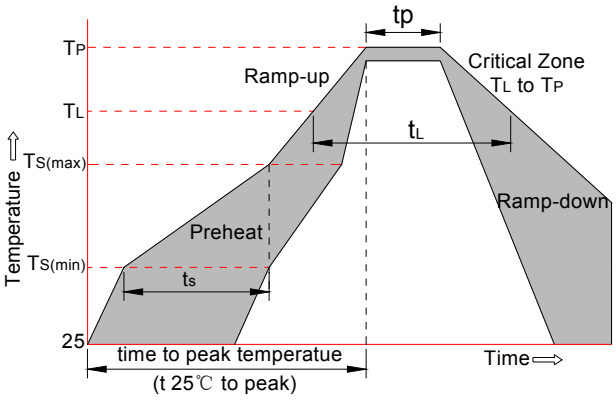


FIG.3: Normalized Vs change vs. junction temperature

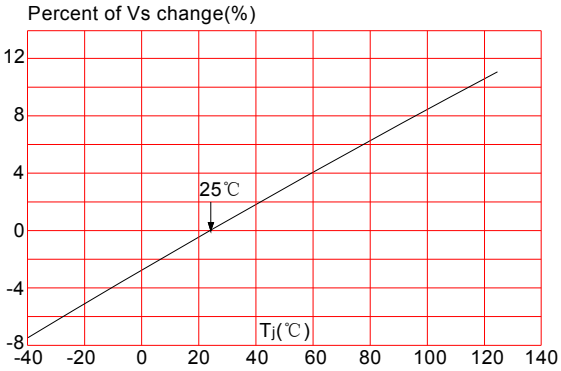
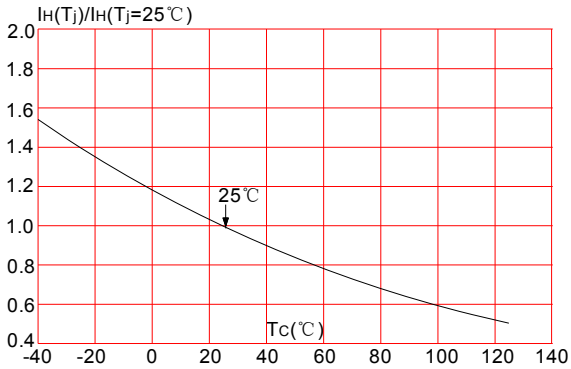
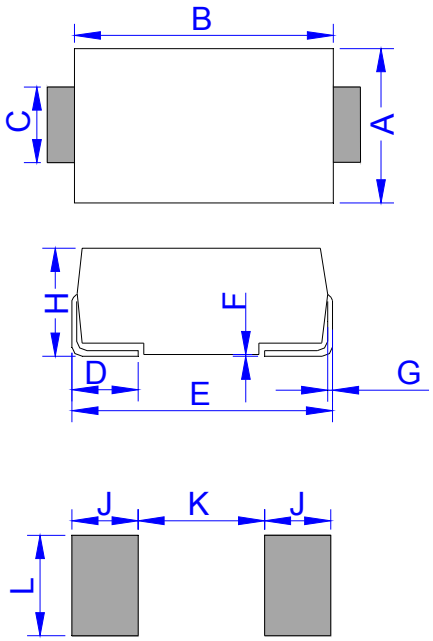


FIG.4: Normalized DC holding current vs. case temperature



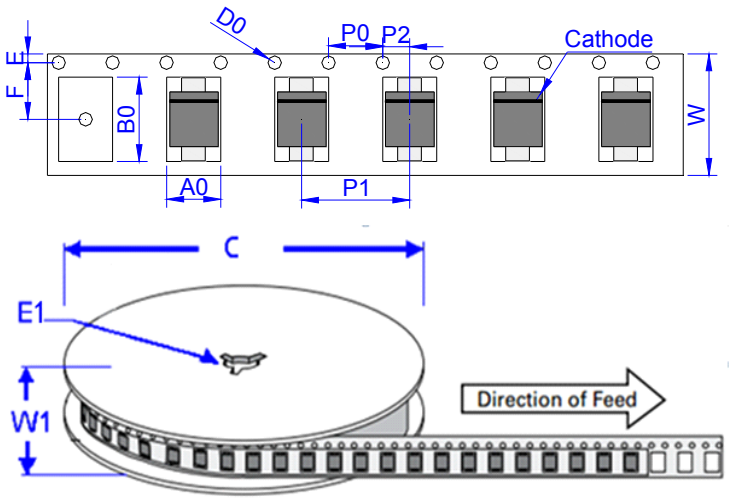
PACKAGE MECHANICAL DATA



DO-214AA (SMB)

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

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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