

Thyristor Surge Suppressors (TSS)

CPXXXXSB Series DO-214AA(SMB) @10/700μs, 4KV

Description

CPxxxxSB series thyristors are a type of semi-conduct component. They are designed in applications, modems, telephones, line cards, answering machines, FAX machines, SLICs, T1/E1, xDSL, PBXs and more.

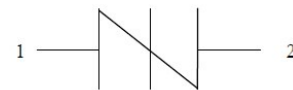


SMB

Features

- ⊍ Lower capacitance
- ⊍ 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

Schematic Symbol



Symbol

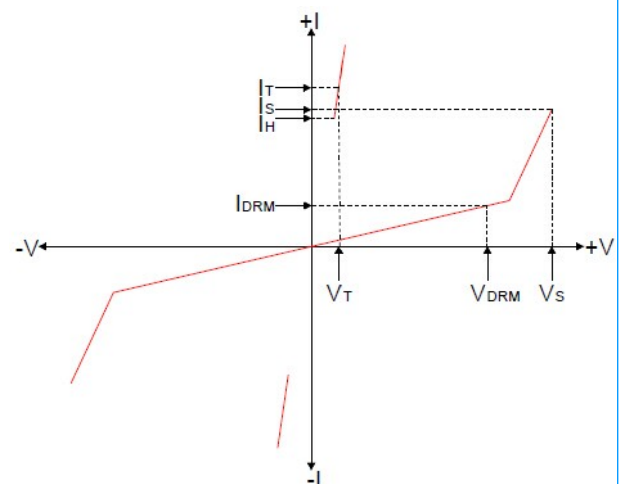
Absolute Maximum Ratings (T_A=25°C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage Temperature Range	T _{stg}	-60 to +150	°C
Operating Junction Temperature Range	T _j	-40 to +150	°C
Repetitive Peak Pulse Current	I _{PP}	80	A

Electrical Parameters (T_A=25°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



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Electrical Characteristics (T_A=25°C)

Part Number	Marking	I _{DRM} @ V _{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
CP0080SB	CP-8B	5	6	25	800	4	2.2	30	50
CP0220SB	CP22B	5	18	30	800	4	2.2	30	120
CP0300SB	CP03B	5	25	40	800	4	2.2	30	120
CP0640SB	CP06B	5	58	77	800	4	2.2	120	80
CP0720SB	CP07B	5	66	87	800	4	2.2	120	75
CP0900SB	CP09B	5	75	98	800	4	2.2	120	70
CP1100SB	CP11B	5	90	130	800	4	2.2	120	70
CP1300SB	CP13B	5	120	160	800	4	2.2	120	60
CP1500SB	CP15B	5	140	180	800	4	2.2	120	55
CP1800SB	CP18B	5	170	220	800	4	2.2	120	50
CP2300SB	CP23B	5	190	260	800	4	2.2	120	50
CP2600SB	CP26B	5	220	300	800	4	2.2	120	45
CP3100SB	CP31B	5	275	350	800	4	2.2	120	45
CP3500SB	CP35B	5	320	400	800	4	2.2	120	40
CP3800SB	CP38B	5	340	450	800	4	2.2	120	40

Notes:

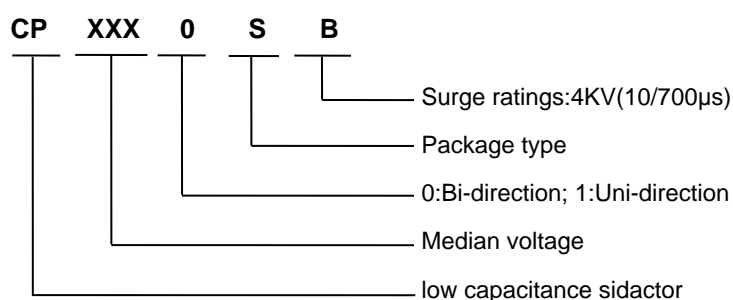
① V_S is measured at 100KV/s;

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



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CPXXXXSB Series

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Soldering Parameters

Reflow Condition		Pb-Free assembly (see Fig.2)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150 $^{\circ}$ C
	-Temperature Max($T_{s(max)}$)	+200 $^{\circ}$ C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3 $^{\circ}$ C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3 $^{\circ}$ C/sec. Max
Reflow	-Temperature(T_L) (Liquid μ s)	+217 $^{\circ}$ C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5) $^{\circ}$ C
Time within 5 $^{\circ}$ C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6 $^{\circ}$ C/sec. Max
Time 25 $^{\circ}$ C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260 $^{\circ}$ C

Fig.1: tr \times td pulse waveform

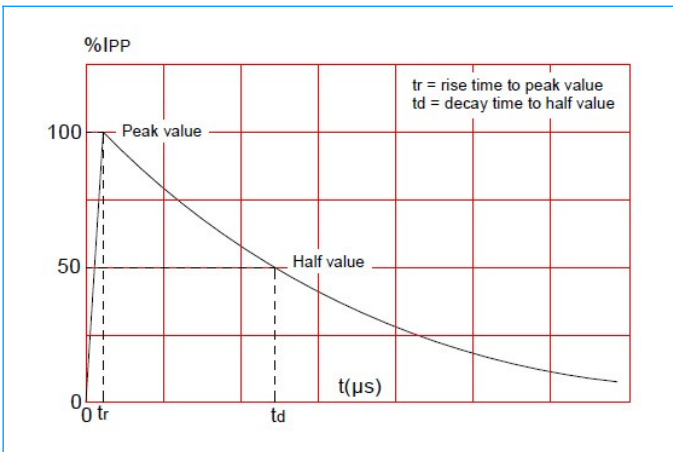


Fig.3: Normalized Vs change vs. junction temperature

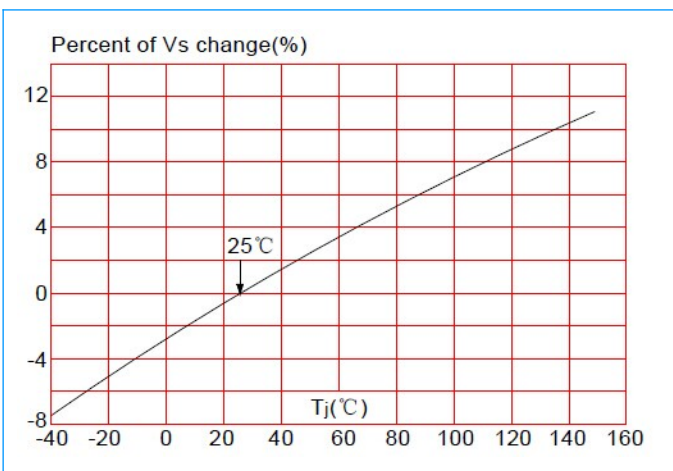


Fig.2: Reflow condition

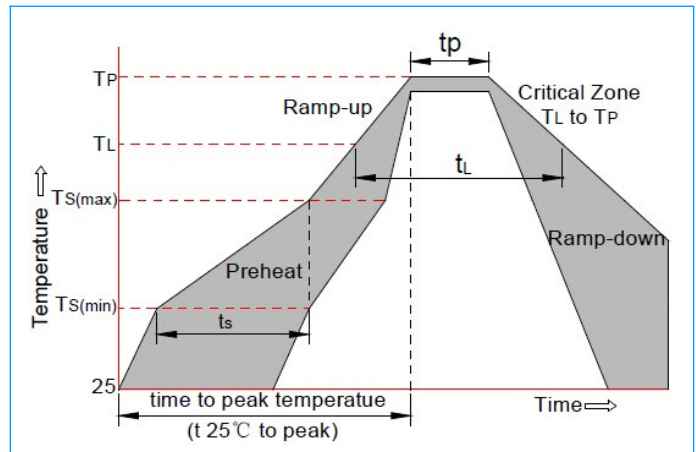
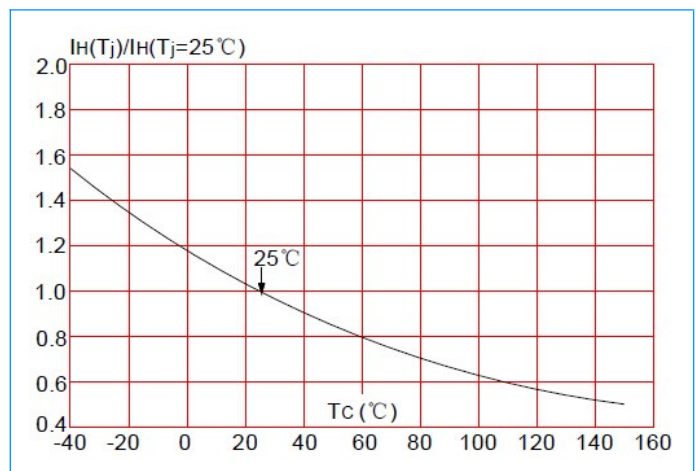


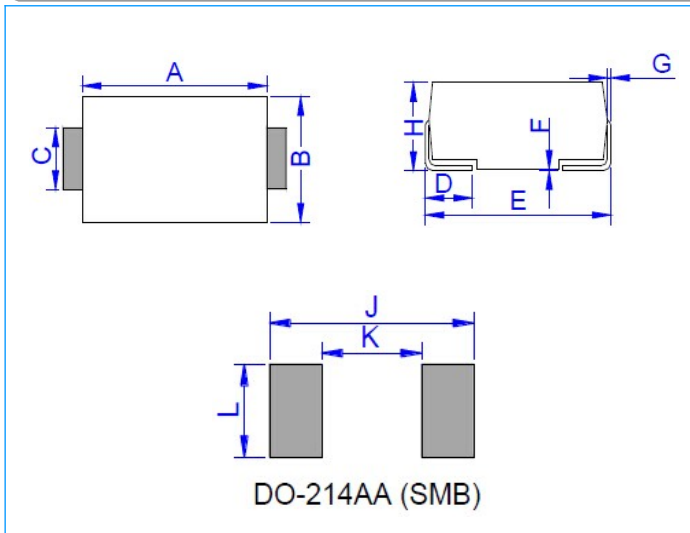
Fig.4: Normalized DC holding current vs. case temperature



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Package Mechanical Data



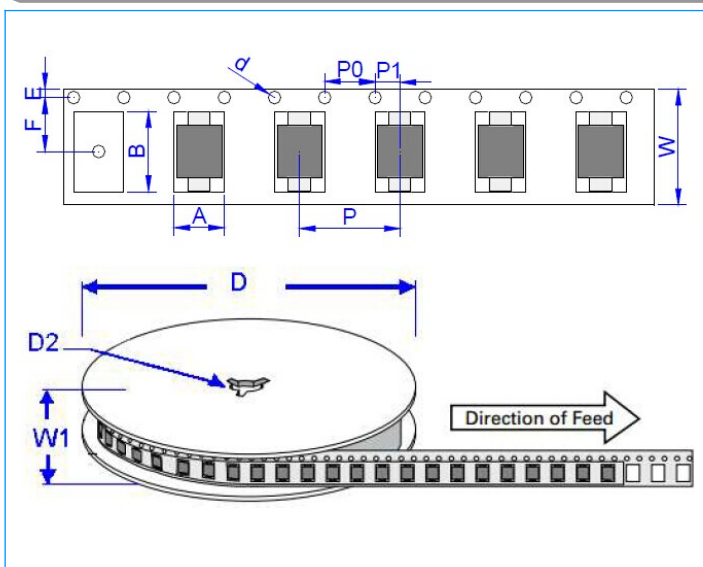
Ref.	Dimensions			
	Millimeters		Inches	
	Min	Max	Min	Max
A	4.25	4.75	0.167	0.187
B	3.30	3.94	0.130	0.155
C	1.85	2.21	0.073	0.087
D	0.76	1.52	0.030	0.060
E	5.08	5.59	0.200	0.220
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.11	2.44	0.083	0.096
J	6.80	—	0.270	—
K	—	2.60	—	0.100
L	2.40	—	0.090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

Marking



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

Tape and Reel Specification-SMB



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

Outline	Reel (pcs)	Per Carton (pcs)	Reel Diameters (mm)
Taping	3,000	48,000	330