

## CPxxxxSB Overvoltage Protector Series

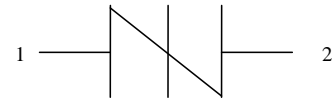
### Description and Feature

- ✧ 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

### Pin Information and Graphic symbol



SMB




symbol

### Application information

- ✧ Video/Audio Ports
- ✧ Low frequency signal transmission line (RS232, RS485, etc.)
- ✧ modems, telephones, line cards, answering machines, FAX machines, T1/E1, xDSL and more.

### Agency Approvals

Icon	Description
<b>RoHS</b>	Compliance with 2011/65/EU
<b>HF</b>	Compliance with IEC61249-2-21:2003
	Mean lead free

### 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 +150	°C
Repetitive peak pulse current	I <sub>PP</sub>	80	A

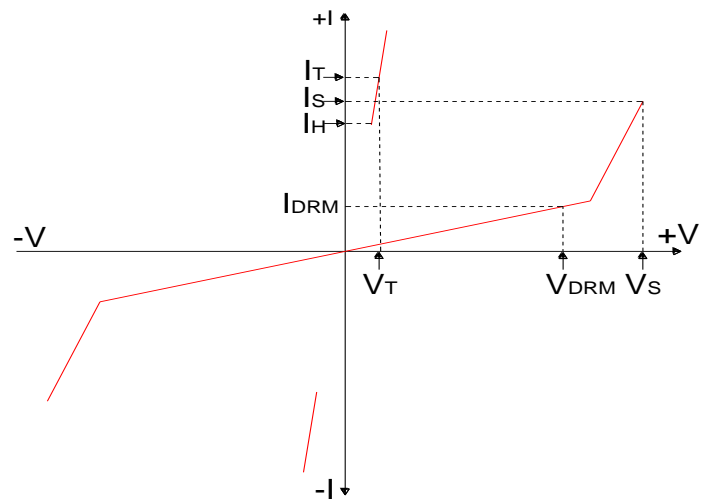
### SURGE RATINGS

Series	I <sub>PP</sub> (A) min			
	2×10us	8×20us	10×360us	10×1000us
B	250	250	125	80

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## ELECTRICAL CHARACTERISTICS (TA=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



Part Number	IDRM@VD RM		VS①@IS		VT@ IT		IH	CO②	Marking
	$\mu A$	V	V	mA	V	A			
	max		max	max	max	max	min	max	
CP0080SB	5	6	25	800	4	2.2	30	50	CP-8B
CP0220SB	5	18	30	800	4	2.2	30	50	CP22B
CP0300SB	5	25	40	800	4	2.2	30	50	CP03B
CP0640SB	5	58	77	800	4	2.2	120	40	CP06B
CP0720SB	5	66	87	800	4	2.2	120	40	CP07B
CP0900SB	5	75	98	800	4	2.2	120	40	CP09B
CP1100SB	5	90	130	800	4	2.2	120	35	CP11B
CP1300SB	5	120	160	800	4	2.2	120	35	CP13B
CP1500SB	5	140	180	800	4	2.2	120	35	CP15B
CP1800SB	5	170	220	800	4	2.2	120	35	CP18B
CP2300SB	5	190	260	800	4	2.2	120	30	CP23B
CP2600SB	5	220	300	800	4	2.2	120	30	CP26B
CP3100SB	5	275	350	800	4	2.2	120	25	CP31B
CP3500SB	5	320	400	800	4	2.2	120	25	CP35B
CP3800SB	5	340	450	800	4	2.2	120	25	CP38B

①  $V_S$  is measured at 100KV/s

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

Marking



CP-8B: Device Marking Code  
1509: In ninth week, 2015

ORDERING INFORMATION

<b>CP</b>	<b>008</b>	<b>0</b>	<b>S</b>	<b>B</b>
Low capacitance sidactor	Median Voltage	0:Bi-directional, 1:Uni	Package type	Surge Ratings:4KV(10/700us)

RATINGS AND V-I CHARACTERISTICS CURVES (T<sub>A</sub>=25 °C, unless otherwise noted)

FIG.1: tr x td pulse waveform

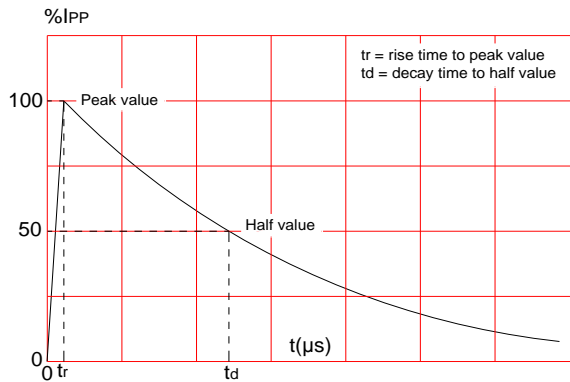


FIG.2: Reflow condition

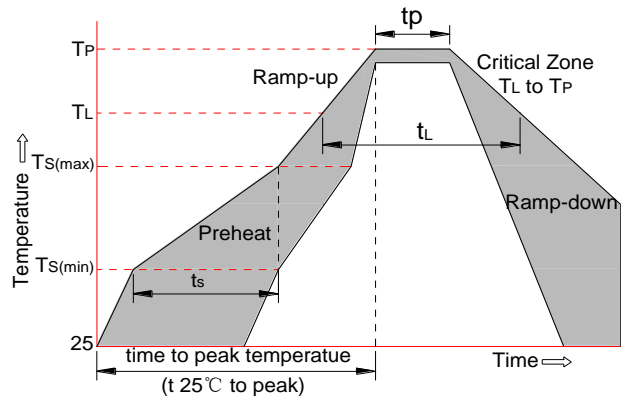


FIG.3: Normalized Vs change vs. junction temperature

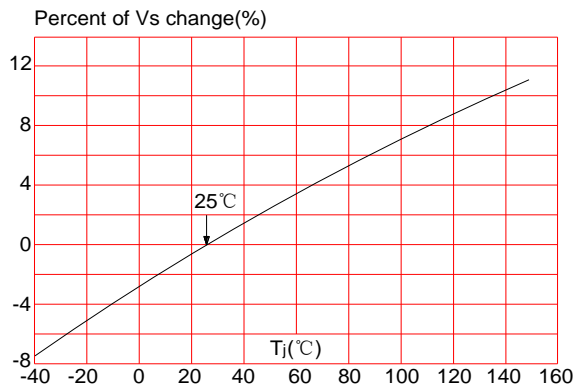
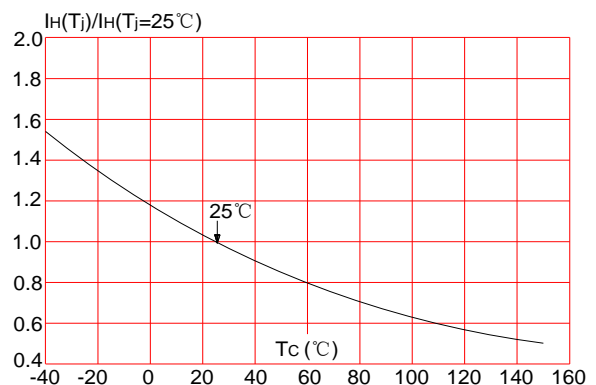


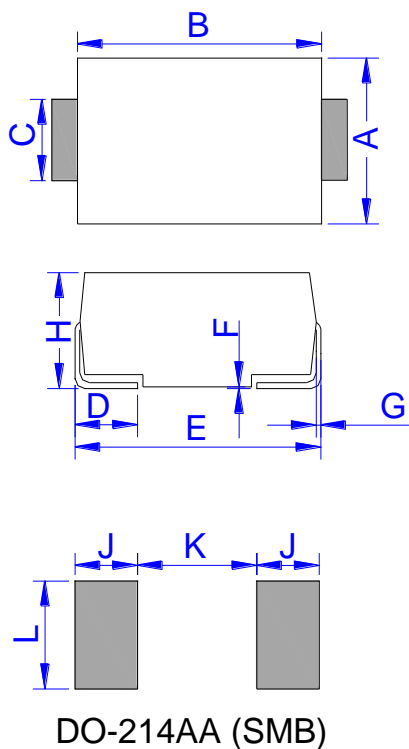
FIG.4: Normalized DC holding current vs. case temperature



**SOLDERING PARAMETERS**

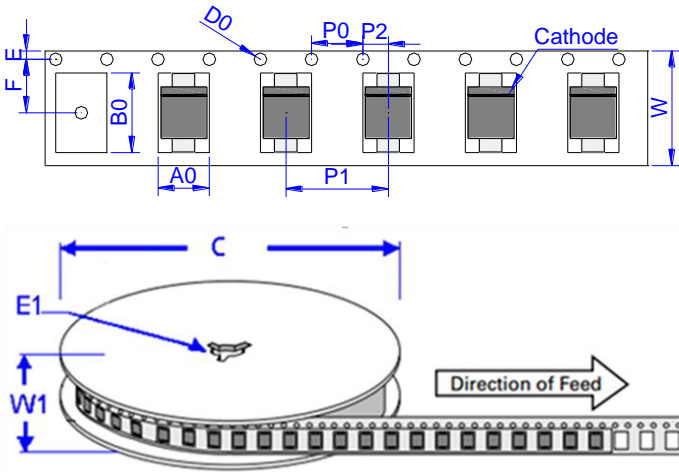
Reflow Condition		Pb-Free assembly (see FIG.5)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max( $T_{s(max)}$ )	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-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

**PACKAGE MECHANICAL DATA**



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)	PACKAGE	TAPE & REEL
TAPING	0.07	3,000	SMB(DO214AA)	13inch