

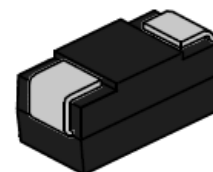


## CPxxxxSA Series TSS

Rev.4.5

### DESCRIPTION:

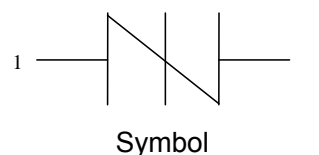
CPxxxxSA series thyristors are a type of semiconductor component. They are designed in applications, such as modems, telephones, line cards, answering machines, FAX machines, SLICs, T1/E1, xDSL, PBXs and more.



SMA

### FEATURES:

- ✧ 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.
- ✧ UL 497B item recognized. (File No.: E480698).
- ✧ IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact).
- ✧ Non degenerative.

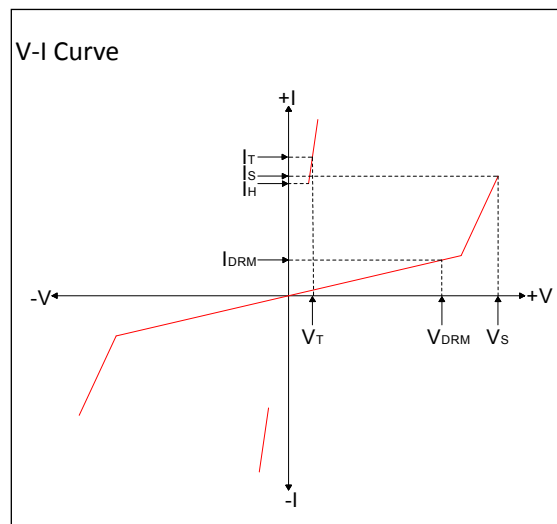


### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C, RH=45%-75%, unless otherwise noted)

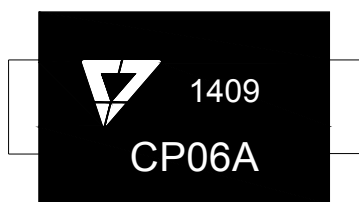
Parameter	Symbol	Value	Unit
Storage temperature range	T <sub>STG</sub>	-60 to +150	°C
Operating junction temperature range	T <sub>J</sub>	-40 to +125	°C
Repetitive peak pulse current@10/1000μs	I <sub>PP</sub>	80	A

### 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



## MARKING



CP06A : Device Marking Code  
1409: In ninth week, 2014

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

Part Number	$I_{DRM}@V_{DRM}$		$V_S^{①}@I_S$		$V_T@I_T$		$I_H$	$C_o^{②}$	Marking
	$\mu\text{A}$	V	V	mA	V	A	mA	pF	
	max		max	max	max	max	min	max	
CP0640SA	1	58	77	800	4	2.2	120	35	CP06A
CP0720SA	1	65	87	800	4	2.2	120	35	CP07A
CP0900SA	1	75	98	800	4	2.2	120	35	CP09A
CP1100SA	1	90	130	800	4	2.2	120	35	CP11A
CP1300SA	1	120	160	800	4	2.2	120	35	CP13A
CP1500SA	1	140	180	800	4	2.2	120	35	CP15A
CP1800SA	1	170	220	800	4	2.2	120	35	CP18A
CP2300SA	1	190	260	800	4	2.2	120	25	CP23A
CP2600SA	1	220	300	800	4	2.2	120	25	CP26A
CP3100SA	1	275	350	800	4	2.2	120	25	CP31A
CP3500SA	1	320	400	800	4	2.2	120	20	CP35A
CP3800SA	1	340	450	800	4	2.2	120	20	CP38A

①  $V_S$  is measured at 100kV/s

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

## SURGE RATINGS

Series	$I_{PP}$ (A) min			
	2/10 $\mu\text{s}$	8/20 $\mu\text{s}$	10/360 $\mu\text{s}$	10/1000 $\mu\text{s}$
A	250	250	125	80

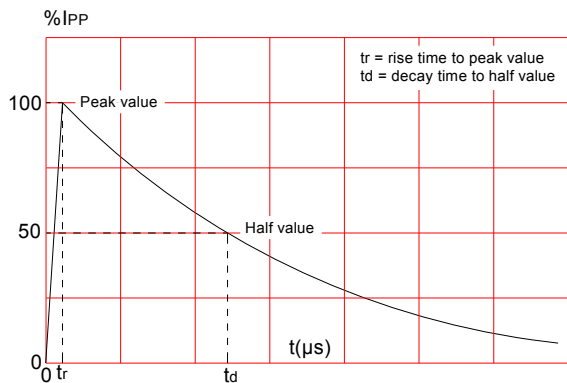
**ORDERING INFORMATION**

<b>CP</b>	<b>064</b>	<b>0</b>	<b>SA</b>
Low capacitance sidactor	Median Voltage	0:Bi-directional	Surge Ratings :4KV(10/700μs)

**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) ( $t_s$ )	60-180 secs.
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature( $T_L$ ) (Liquidus)	+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:** tr × td pulse waveform



**FIG.2:** Reflow condition

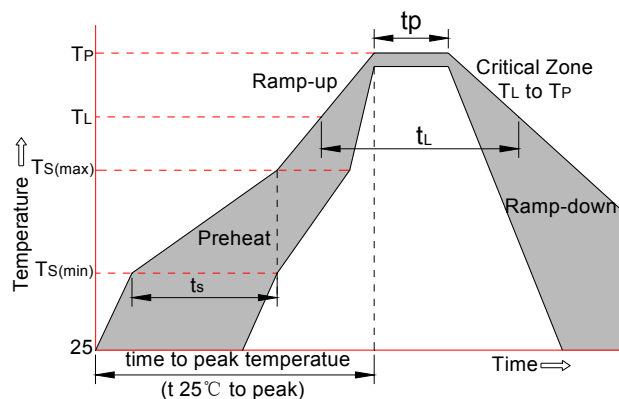


FIG.3: Normalized Vs change vs. junction temperature

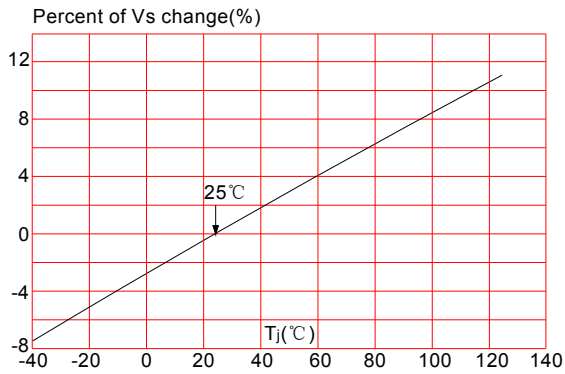
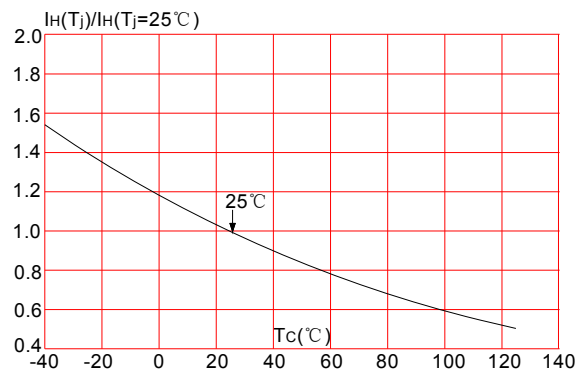
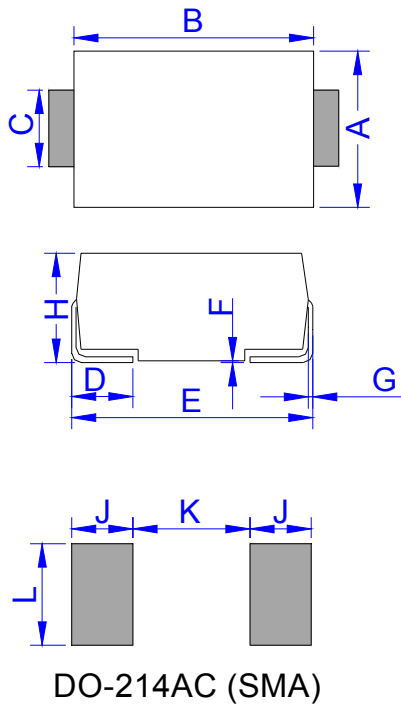


FIG.4: Normalized DC holding current vs. case temperature

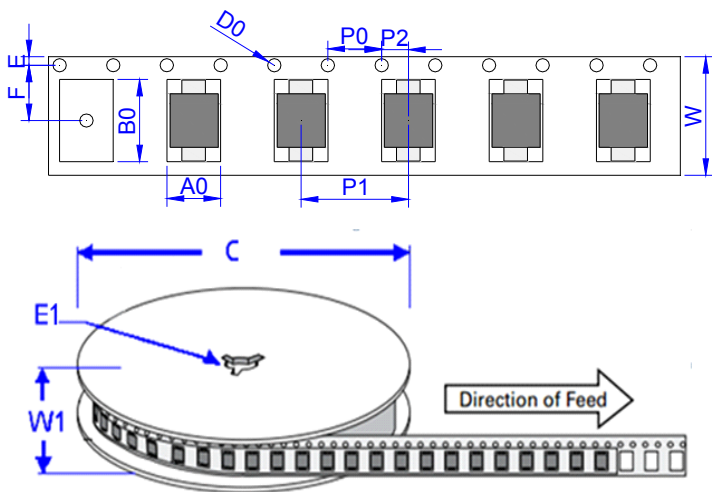


PACKAGE MECHANICAL DATA



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.60	3.00	0.102	0.118
B	4.15	4.65	0.163	0.183
C	1.25	1.65	0.049	0.065
D	0.95	1.52	0.037	0.060
E	4.90	5.30	0.193	0.209
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.00	2.44	0.079	0.096
J	2.00		0.079	
K		2.30		0.091
L	1.80		0.071	


TAPE AND REEL SPECIFICATION-SMA



Ref.	Dimensions	
	Millimeters	Inches
A0	2.79 ± 0.3	0.110 ± 0.012
B0	5.33 ± 0.3	0.210 ± 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	4.00 ± 0.2	0.157 ± 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

PART No.	UNIT WEIGHT (g/PCS) typ.	REEL (PCS)	PER CARTON (PCS)	DESCRIPTION
CPxxxxSA	0.07	7,500	120,000	13 inch reel pack

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