

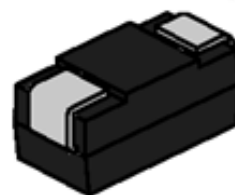


## CP3100SE TSS

Rev.1.1

### DESCRIPTION:

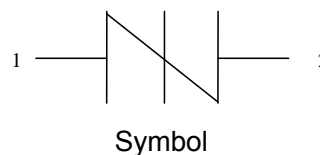
CP3100SE is a type of semiconductor components. It is designed to protect baseband equipment from damaging overvoltage transients.



SMB

### 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.
- IEC61000-4-2 (ESD)  $\pm 30\text{kV}$  (air),  $\pm 30\text{kV}$  (contact).
- Non degenerative.

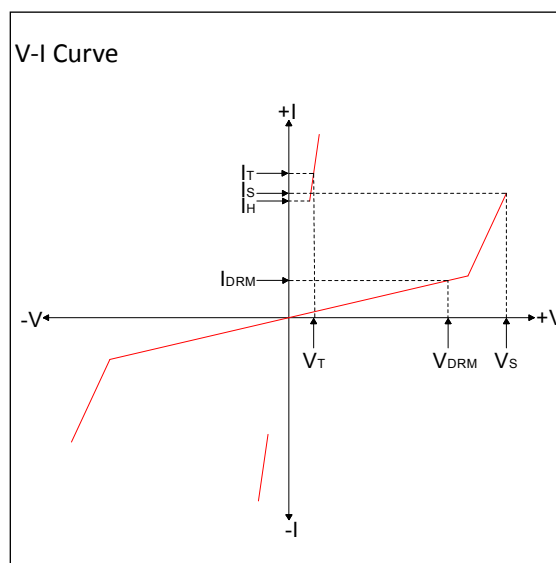


### ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ , RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	$T_{STG}$	-60 to +150	$^\circ\text{C}$
Operating junction temperature range	$T_J$	-40 to +125	$^\circ\text{C}$
Repetitive peak pulse voltage @10/700 $\mu\text{s}$ $R_i=18\Omega$	$V_{PP}$	6000	V

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

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



MARKING



CP31E : Device Marking Code  
1409: In ninth week, 2014

ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C, continued)

Part Number	I <sub>DRM</sub> @V <sub>DRM</sub>		V <sub>S</sub> <sup>①</sup> @I <sub>S</sub>		V <sub>T</sub> @I <sub>T</sub>		I <sub>H</sub>	Co <sup>②</sup>	Marking
	μA	V	V	mA	V	A	mA	pF	
	max		max	max	max	max	min	max	
CP3100SE	1	275	350	800	4	2.2	50	80	CP31E

① V<sub>S</sub> is measured at 100kV/s

② Off-state capacitance is measured in V<sub>DC</sub>=2V, V<sub>RMS</sub>=1V, f=1MHz

SURGE RATINGS

Surge Type	10/1000μs	10/700μs(R <sub>i</sub> =18Ω)
CP3100SE	200A	6kV

ORDERING INFORMATION

CP	310	0	S	E
Low capacitance sidactor	Median voltage	0:Bi-direction	Package type:SMB	Surge ratings

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

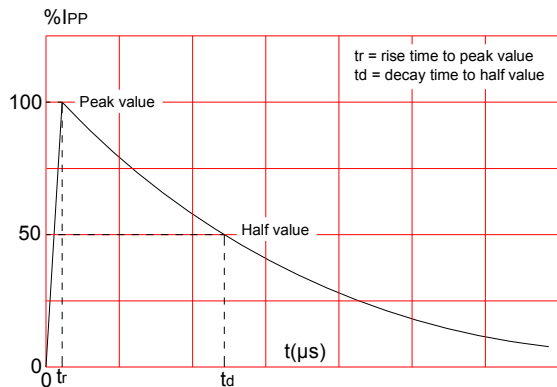


FIG.3: Normalized Vs change vs. junction temperature

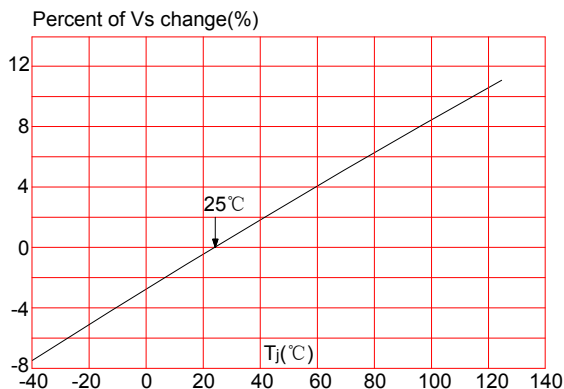


FIG.2: Reflow condition

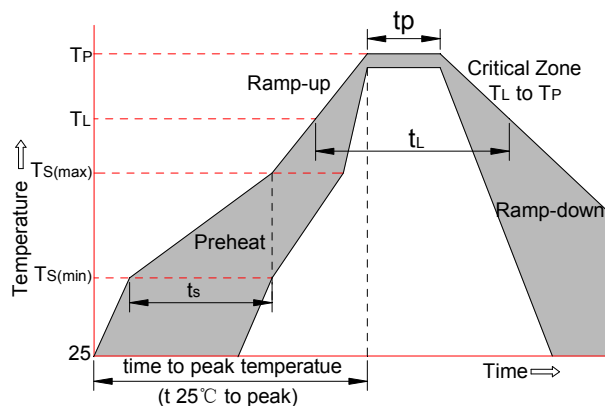
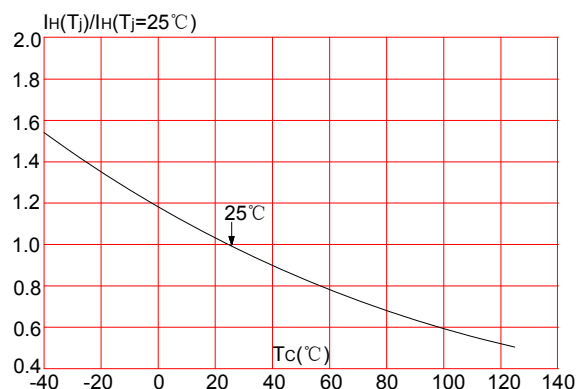
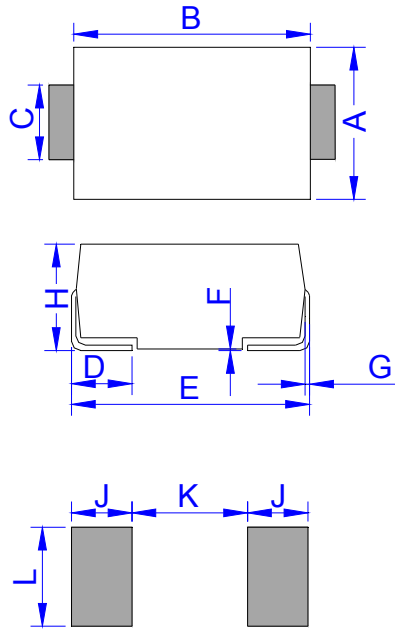


FIG.4: Normalized DC holding current vs. case temperature



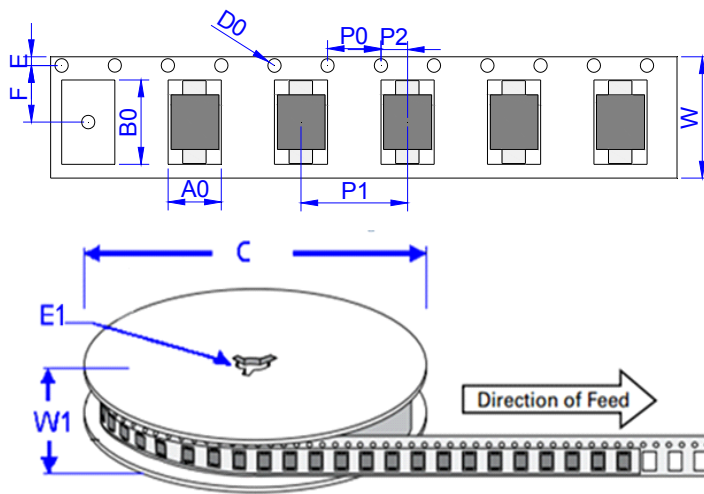
**PACKAGE MECHANICAL DATA**



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

PART No.	UNIT WEIGHT (g/PCS) typ.	REEL (PCS)	PER CARTON (PCS)	DESCRIPTION
CP3100SE	0.098	3,000	48,000	13 inch reel pack

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