

## Description

The CSHXXCB is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time. The CSHXXCB is suited for using in computers, printers, business machines, communication systems, medical equipment and other applications.



## Mechanical Characteristics

- ◆ SOD323
- ◆ ROHS/ Compliant
- ◆ Halogen free
- ◆ Molding compound flammability rating: UL 94V-0
- ◆ Marking: Part number
- ◆ Packing: Tape and Reel per EIA 481

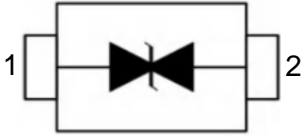
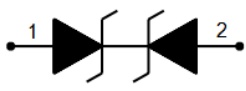
## Features

- ◆ IEC 61000-4-2 (ESD)
  - $\pm 30\text{kV}$  Contact Discharge
  - $\pm 30\text{kV}$  Air Discharge
- ◆ IEC 61000-4-5 (Lightning)
  - 3A~25A (8/20us)
- ◆ IEC 61000-4-4 EFT Protection
  - 40A (5/50ns)
- ◆ Halogen free and RoHS compliant
- ◆ Protects one directional I/O line
- ◆ Transient protection for high-speed data lines
- ◆ Low clamping voltage
- ◆ Low leakage current

## Applications

- ◆ Cell Phone Handsets and Accessories
- ◆ Microprocessor based equipment
- ◆ Personal Digital Assistants
- ◆ Notebooks / Desktops / Servers
- ◆ Portable Instrumentation
- ◆ Network, telecom
- ◆ Switch Systems
- ◆ Serial and parallel ports

Dimensions and Pin Configuration

Pin	Name	Description	Outline	Circuit Diagram
1	IO1	Connect to IO		
2	IO2	Connect to IO		

Ordering Information

Part No.	Package	Material	Packing	Quantity per reel	Flammability Rating	Reel Size		
CSHxxCB	SOD323	Halogen free	Tape & Reel	3,000 PCS	UL 94V-0	7 inches		
Marking for the CSHxxCB series								
V <sub>RWM</sub>	3.3V	5V	8V	12V	15V	18V	24V	36V
Marking	2A	2B	2C	2D	2J	2K	2H	2N

Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25°C	P <sub>pk</sub>	-	350	W
ESD (IEC61000-4-2 air discharge) @25°C	V <sub>ESD</sub>	-	±25	kV
ESD (IEC61000-4-2 contact discharge) @25°C	V <sub>ESD</sub>	-	±25	kV
Junction temperature	T <sub>J</sub>	-	125	°C
Operating temperature	T <sub>OP</sub>	-55	125	°C
Storage temperature	T <sub>STG</sub>	-55	150	°C
Lead temperature	T <sub>L</sub>	-	260	°C

Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise specified)

PART NUMBER	DEVICE MARKING	V <sub>RWM</sub> (V) (max.)	V <sub>B</sub> (V) (min.)	I <sub>T</sub> (mA)	V <sub>C@1A</sub> (V) (max.)	V <sub>C</sub> (V)		I <sub>R</sub> (μA) (max.)	C <sub>T</sub> (pF) (max.)
						(max.)	(@A)		
CSH03CB	2A	3.3	3.5	1	7.5	16.0	25	1	150
CSH05CB	2B	5.0	6.0	1	9.8	18.0	24	1	120
CSH08CB	2C	8.0	8.5	1	13.4	24.0	18	1	110
CSH12CB	2D	12.0	13.3	1	19.0	32.0	13	1	70
CSH15CB	2J	15.0	16.5	1	24.0	38.0	10	1	40
CSH18CB	2K	18.0	20.0	1	29.0	45.0	8	1	35
CSH24CB	2H	24.0	26.7	1	43.0	52.0	7	1	30
CSH36CB	2N	36.0	38.0	1	60.0	75.0	3	1	25

Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise Specified)

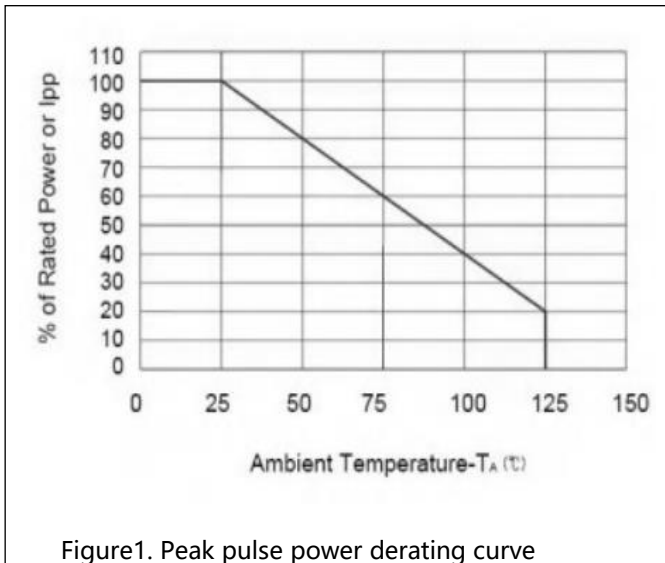


Figure1. Peak pulse power derating curve

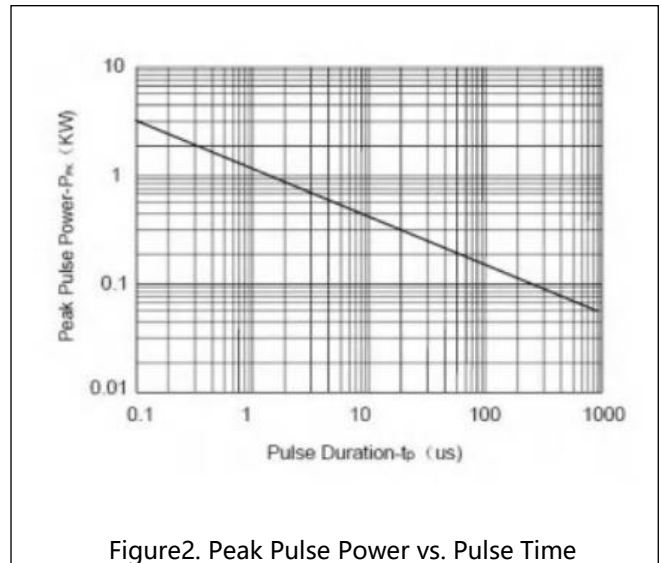


Figure2. Peak Pulse Power vs. Pulse Time

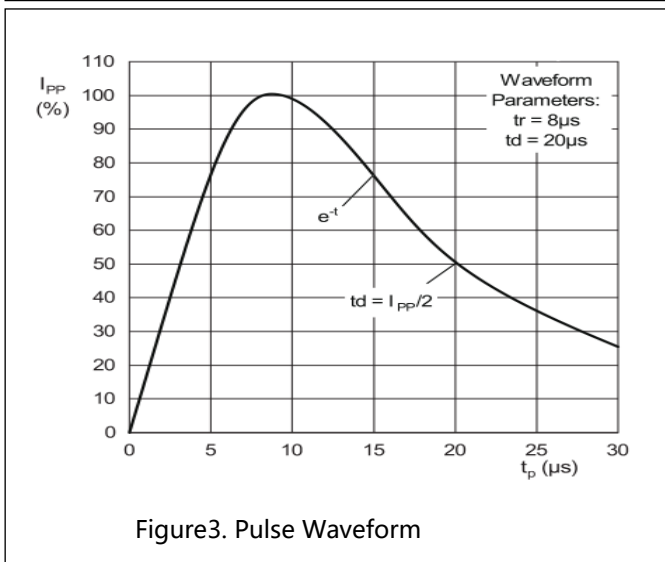
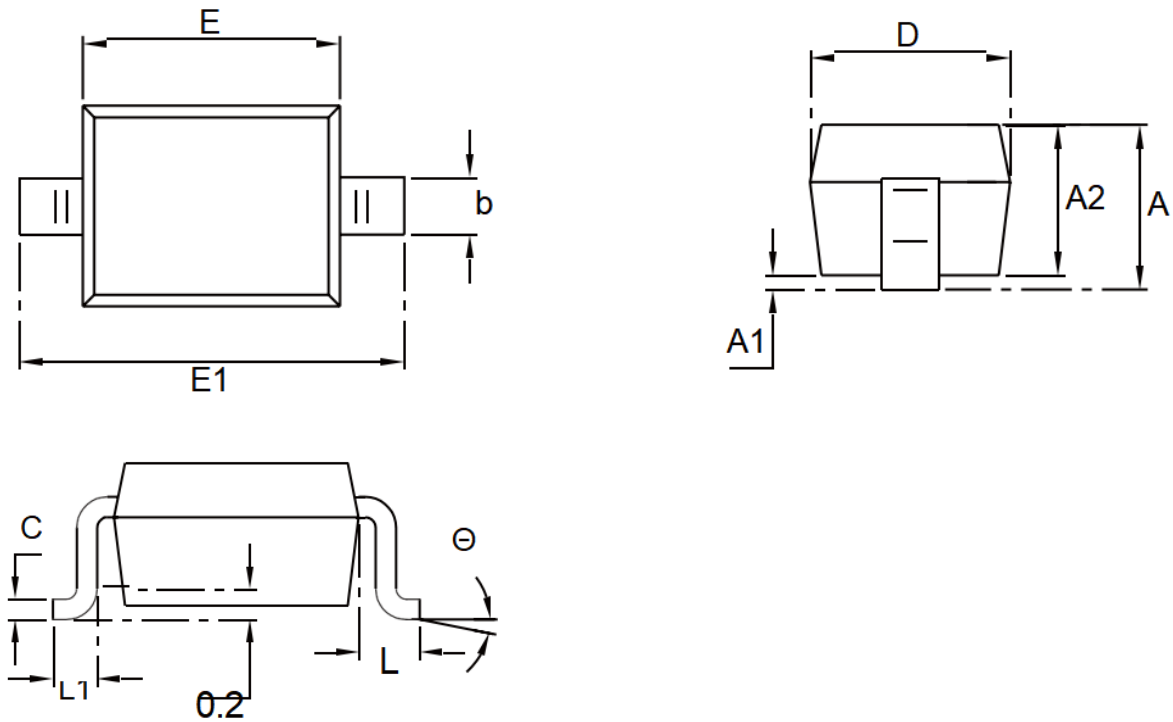


Figure3. Pulse Waveform

## Applications Information

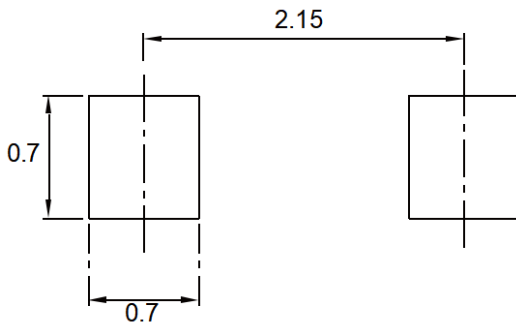
Typical Interface Application

## Package Outline Drawing



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A		1.000		0.039
A1	0.000	0.100	0.000	0.004
A2	0.800	0.900	0.031	0.036
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	1.200	1.400	0.047	0.055
E	1.600	1.800	0.063	0.071
E1	2.500	2.700	0.100	0.108
L	0.475REF		0.019REF	
L1	0.250	0.400	0.010	0.016
Θ	0°	8°	0°	8°

### Recommended Land Pattern



Note:

1. Controlling dimension: in millimeters
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference only

### Revision history of Specification

Version	Change Items	Effective Date
1.0	Initial Release	13-Aug-2021