

Description

The CSHxxCU Series is designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment and other applications. These devices are ideal for situations where board space is at a premium.



Mechanical Characteristics

- ◆ SOD-323
- ◆ ROHS/ Compliant
- ◆ Halogen free
- ◆ Molding compound flammability rating: UL 94V-0
- ◆ Marking: Part number
- ◆ Packing: Tape and Reel per EIA 481

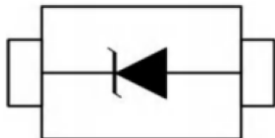
Features

- ◆ IEC 61000-4-2 (ESD)
 - $\pm 30\text{kV}$ Contact Discharge
 - $\pm 30\text{kV}$ Air Discharge
- ◆ IEC 61000-4-4 EFT Protection
 - 40A (5/50ns)
- ◆ 300W Peak Pulse Power per (tp=8/20μs)
- ◆ Protects one I/O line
- ◆ Low clamping voltage
- ◆ Low leakage current

Applications

- ◆ Cell Phone Handsets and Accessories
- ◆ Microprocessor based equipment
- ◆ Personal Digital Assistants
- ◆ Notebooks / Desktops / Servers
- ◆ Portable Instrumentation
- ◆ Networking and Telecom
- ◆ Serial and Parallel Ports.
- ◆ Peripherals

Pin Configuration



Ordering Information

Part Number	Package	Marking	Packing	Reel Size
CSHxxCU	SOD-323	Halogen free	3000/Tape & Reel	7 inch

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Air)	-/+30	KV
V_{ESD}	ESD per IEC 61000-4-2 (Contact)	-/+30	KV
P_{PP}	Peak Pulse Power (8/20 μs)	300	W
T_{OPT}	Operating Temperature	-55/+125	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	-55/+150	$^{\circ}\text{C}$
T_{L}	Lead Soldering Temperature	260	$^{\circ}\text{C}$

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

PART NUMBER	DEVICE MARKING	V_{RWM} (V) (max.)	V_{B} (V) (min.)	I_{T} (mA)	$V_{\text{C}@1A}$ (V) (max.)	V_{C} (V) (max.) (@A)		I_{R} (μA) (max.)	C_{T} (PF) (max.)
CSH03CU	03W	3.3	4	1	8.5	18	30	1	300
CSH05CU	D05	5	6	1	9.5	20	30	1	300
CSH12CU	12W	12	13.3	1	19	35	15	1	150
CSH15CU	15W	15	16.3	1	24	45	10	1	120
CSH24CU	24W	24	26.0	1	40	55	6	1	80
CSH36CU	36W	36	40	1	60	75	3	1	60
CSH380CU	380	380	400	1	480	480	10	1	40

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

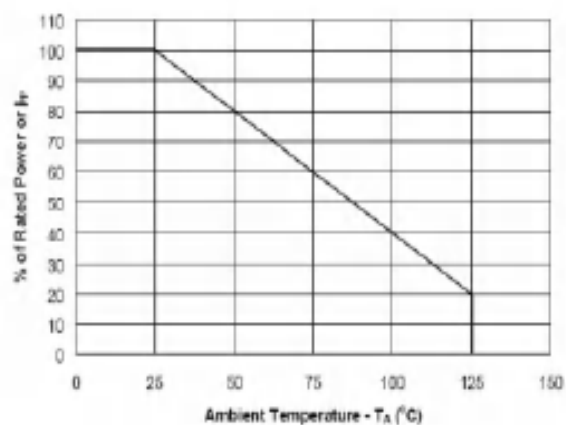


Figure1. Peak pulse power derating curve

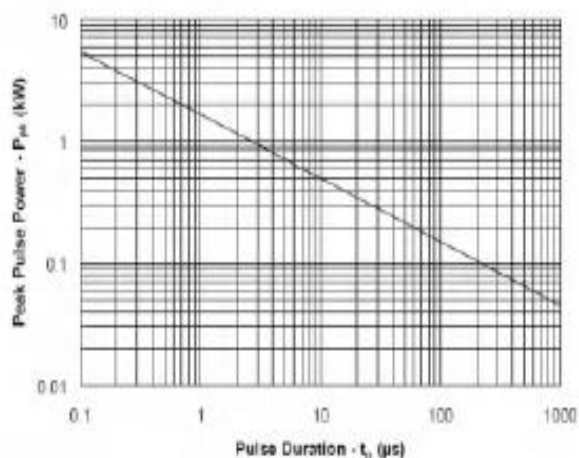


Figure2. Peak Pulse Power vs. Pulse Time

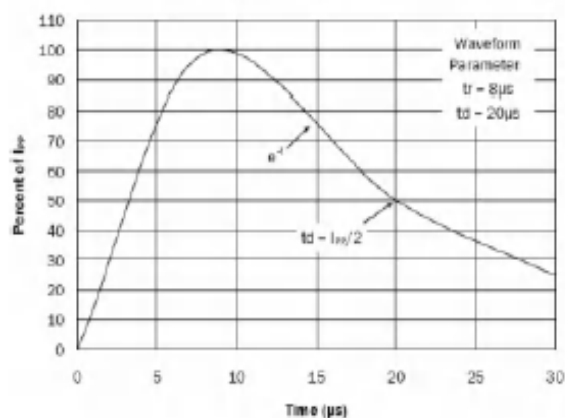


Figure3. Pulse Waveform

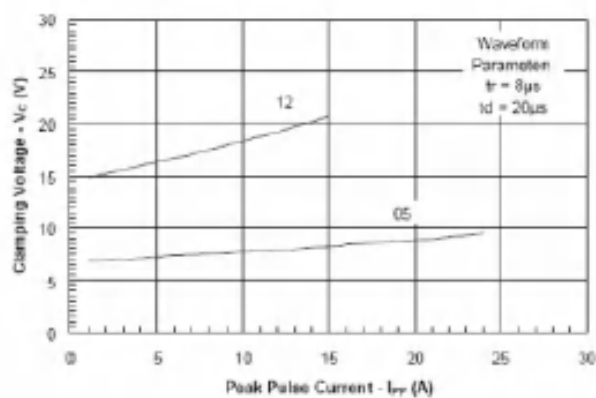


Figure 4. Peak Pulse Current

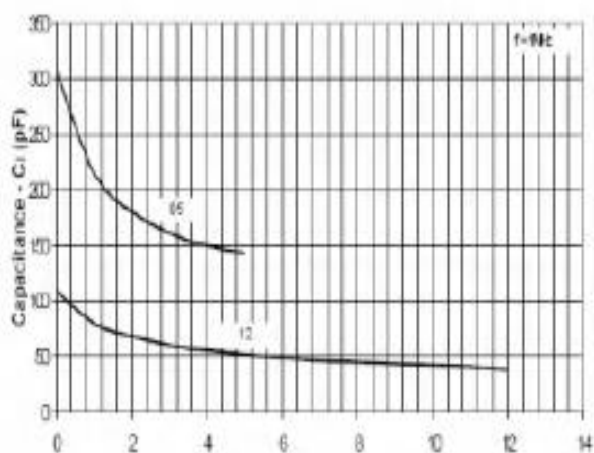


Figure 5. Reverse Voltage

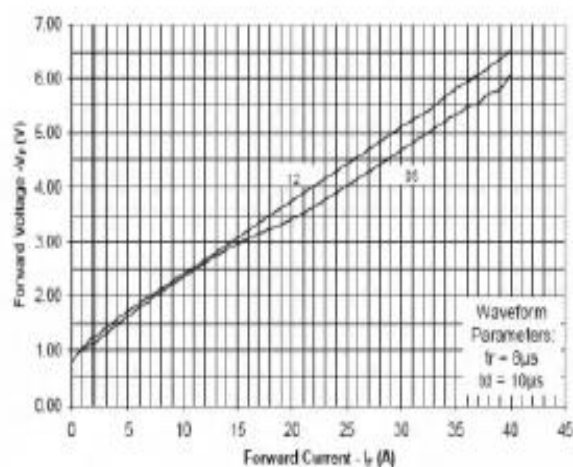
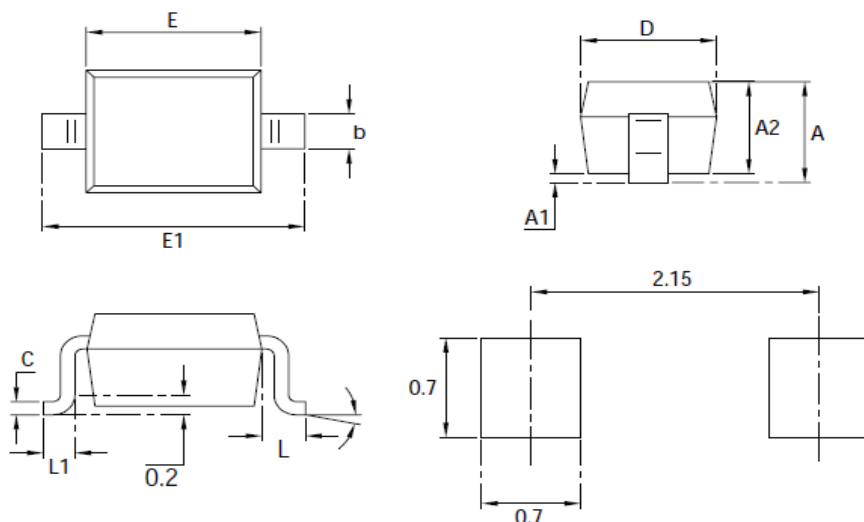


Figure 6. Forward Current

Applications Information

Typical Interface Application

Package Outline Drawing



Units in millimeters

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
0°		8°	0°	8°

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
1.1	Add CSH380CU Device	10-Jul-2023