

## Description

The CSH12LB is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time. The CSH12LB is suited for using in cellular phones, portable devices, digital cameras, power supplies and many other portable applications.



## Mechanical Characteristics

- ◆ DFN0603-2L
- ◆ ROHS/ Compliant
- ◆ Halogen free
- ◆ Molding compound flammability rating: UL 94V-0
- ◆ Marking: Part number
- ◆ Packing: Tape and Reel per EIA 481

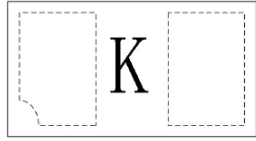

## Features

- ◆ IEC 61000-4-2 (ESD)
  - ±25kV Contact Discharge
  - ±25kV Air Discharge
- ◆ IEC 61000-4-5 (Lightning)
  - 6A (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
- ◆ Peripherals & Pagers

### Dimensions and Pin Configuration

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

### Ordering Information

Part Number	Package	Marking	Packing	Reel Size
CSH12LB	DFN0603-2L	K	15000/Tape & Reel	7 inch

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

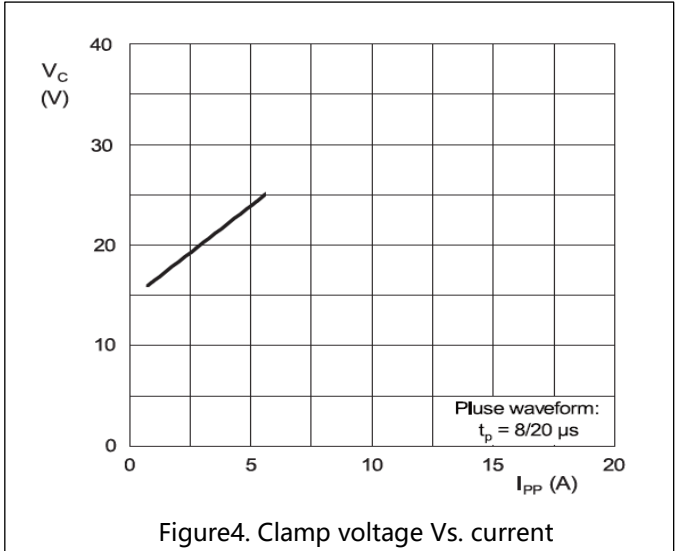
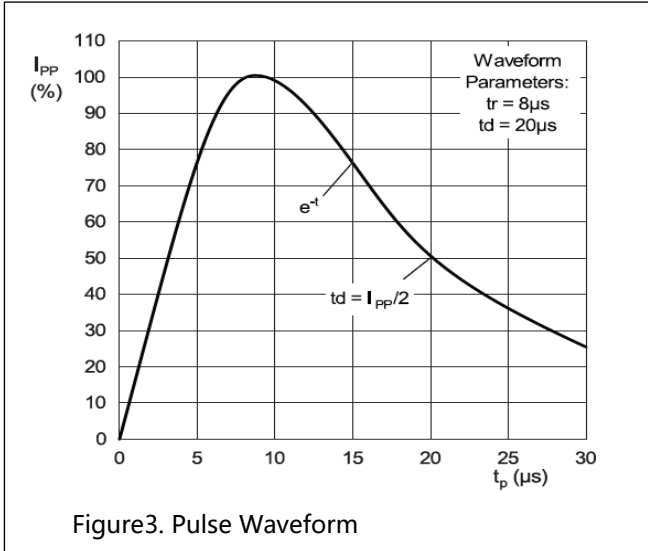
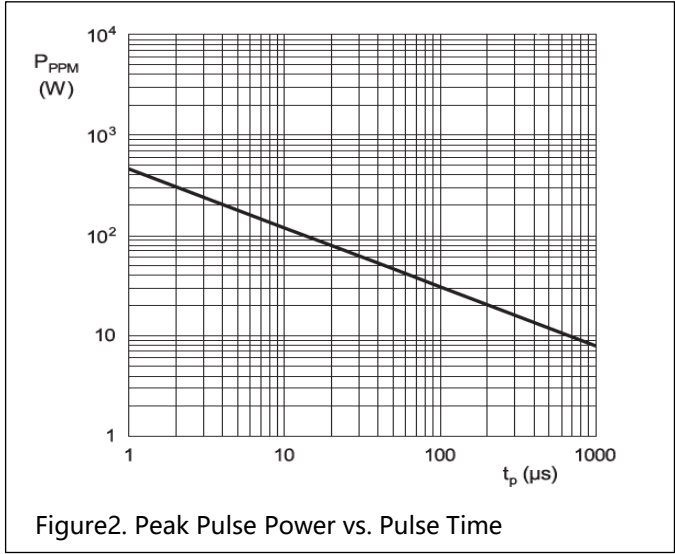
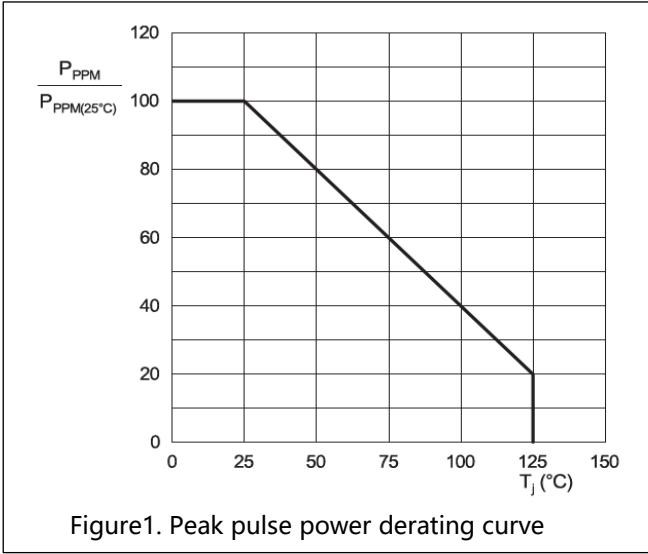
Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25°C	P <sub>pk</sub>	-	80	W
Peak pulse current (tp=8/20us)@25°C	I <sub>pp</sub>	-	6	A
ESD (IEC61000-4-2 air discharge) @25°C	V <sub>ESD</sub>	-	±25	kV
ESD (IEC61000-4-2 contact discharge) @25°C	V <sub>ESD</sub>	-	±25	kV
Junction temperature	T <sub>J</sub>	-	125	°C
Operating temperature	T <sub>OP</sub>	-40	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)

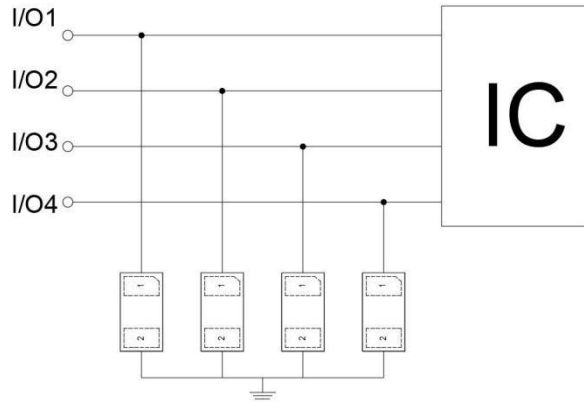
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	$V_{RWM}$				12.0	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1\text{mA}$	13.5			V
Reverse Leakage Current	$I_R$	$V_{RWM}=8\text{V}$			1	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{pp}=1\text{A}; t_p=8/20\mu\text{s}$		16.0		V
Clamping Voltage	$V_C$	$I_{pp}=6\text{A}; t_p=8/20\mu\text{s}$		25.0		V
Junction Capacitance	$C_J$	I/O to GND; $V_R=0\text{V}; f=1\text{MHz}$		7		pF

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

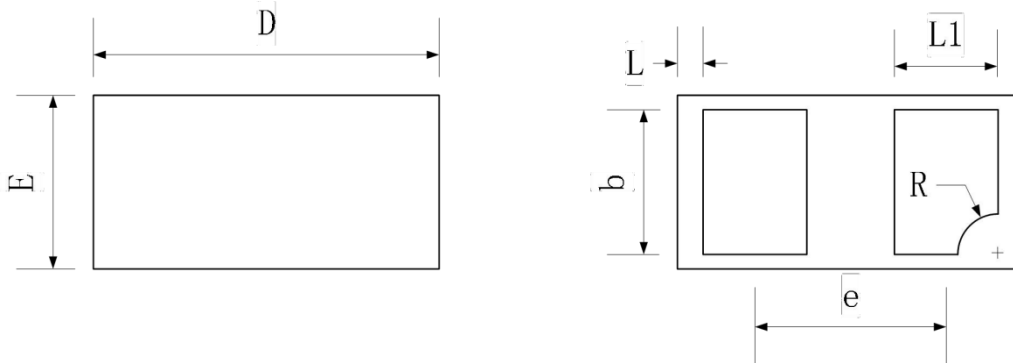


Applications Information

Typical Interface Application



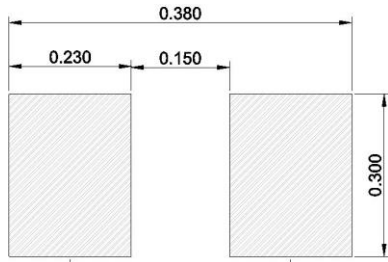
Package Outline Drawing



Units in millimeters

SYMBOL	MIN	NOM	MAX
D	0.570	0.600	0.635
E	0.270	0.300	0.330
b	0.210	0.250	0.280
e	0.350BSC		
L	0.030	0.045	0.060
L1	0.180REF		
R	0.050	0.076	0.150

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