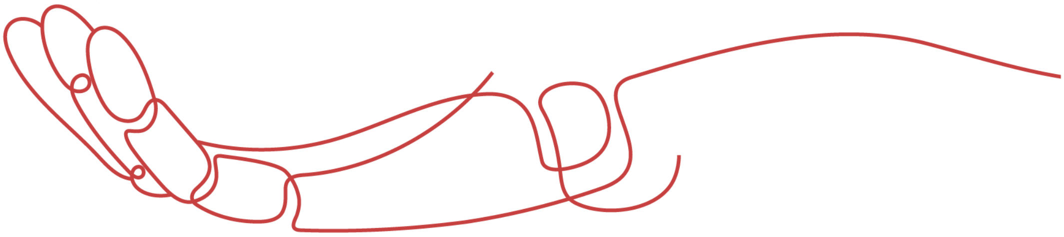
PRODUCT DATA SHEET



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Datasheet **Resources** **Samples**

Description

The USBLC6-2P6 is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability. Low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

Features

- IEC 61000-4-2 Level 4 ESD Protection
  - ±12kV Contact Discharge
  - ±17kV Air Discharge
- IEC 61000-4-4 EFT Protection
  - 40A (5/50ns)
- IEC 61000-4-5 Surge
  - 4.5A (8/20us)
- RoHS compliance
- Protecting two I/O line
- Ultra-low Capacitance:0.6pF (Typical)
- Low clamping voltage
- Low leakage current
- Solid-state silicon technology

Applications

- HDMI/USB2.0
- Monitors and flat panel display
- 10/100/1000 ethernet
- Notebook computers
- SIM ports
- ATM interface

Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
USBLC6-2P6	SOT-563	F	Halogen free	Tape & Reel	3K PCS	UL 94V-0	7 inches

Table-1 Ordering information

Pin Configuration and Functions

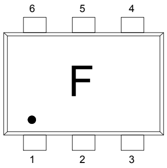
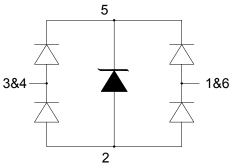
Pin	Name	Description	Outline	Circuit Diagram
1	IO	Connect to IO		
2	GND	Connect to GND		
3	IO	Connect to IO		
4	IO	Connect to IO		
5	Vcc	Connect to Vcc		
6	IO	Connect to IO		

Table-2 Pin configuration

Absolute Maximum rating

Over operating free-air temperature range (unless otherwise noted)

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25℃	P_{pk}	-	60	W
Peak pulse current (tp=8/20us)@25℃	I_{PP}	-	4.5	A
ESD (IEC61000-4-2 air discharge) @25℃	V_{ESD}	-	±17	kV
ESD (IEC61000-4-2 contact discharge) @25℃	V_{ESD}	-	±12	kV
Junction temperature	T_J	-	150	℃
Operating temperature	T_{OP}	-40	125	℃
Storage temperature	T_{STG}	-55	150	℃
Lead temperature	T_L	-	260	℃

Table-3 Absolute Maximum rating

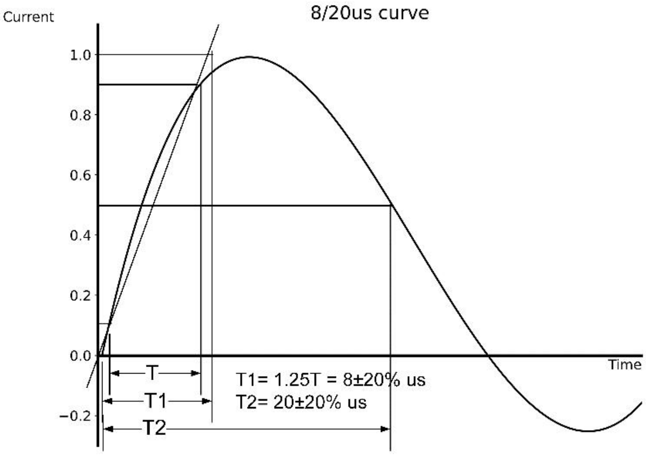
Electrical Characteristics

At TA = 25℃ unless otherwise noted

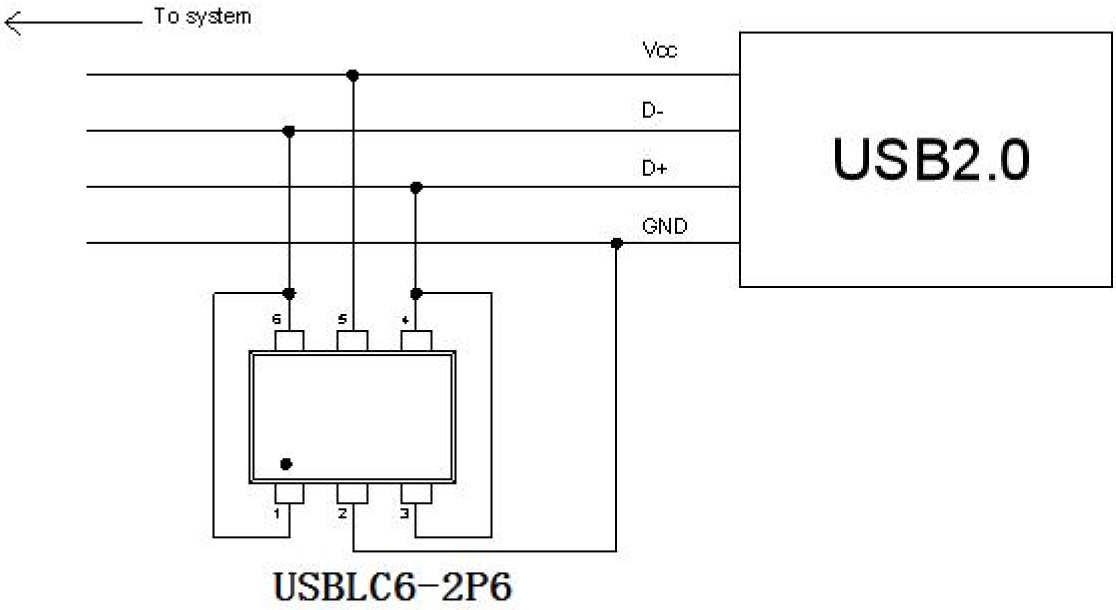
Parameters	Symbol	conditions	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	I_T= 1mA	6			V
Reverse Leakage Current	I_R	V_{RWM}=5V			1	uA
Peak Pulse Current	I_{PP}	TP=8/20us@25℃		4.5		A
Clamping Voltage	V_{CL}	I_{PP}=1A; TP=8/20us		8.5		
Clamping Voltage	V_{CL}	I_{PP}=4.5A; TP=8/20us		12		V
Junction capacitance	C_J	I/O pins to ground; V_R=0V; f = 1MHz		0.6		pF
		Between I/O pins; V_R=0V; f = 1MHz		0.3		

Table-4 Electrical Characteristics

Typical Characteristic

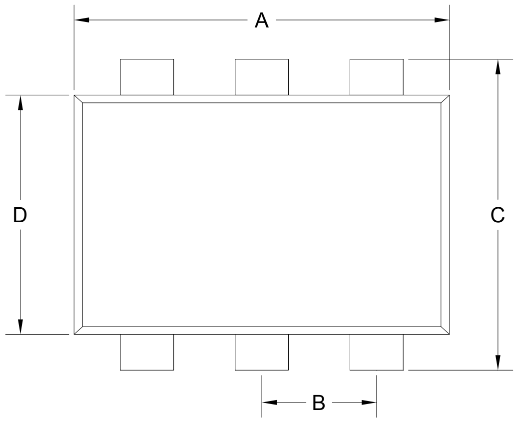


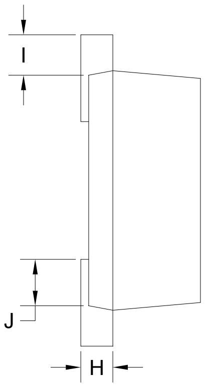
Typical Application

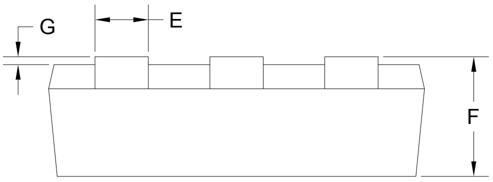


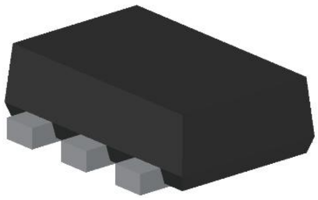
Typical Interface Application

Dimensions and Land Pattern (SOT-563)





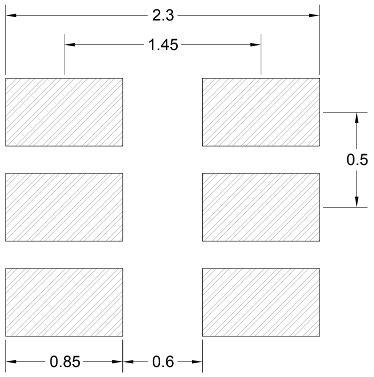




Units in millimeters

symbol	A	B	C	D	E	F	G	H	I	J
Min.	1.50	0.50	1.55	1.10	0.15	0.50	0.00	0.10	0.10	0.15
Max.	1.70	0.60	1.70	1.25	0.30	0.60	0.05	0.18	0.30	0.20

Table-5 Product dimensions



Note:

1. Controlling dimension: in millimeters
2. General tolerance: ±0.05mm
3. The pad layout is for reference only

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