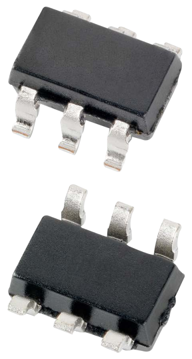
Description

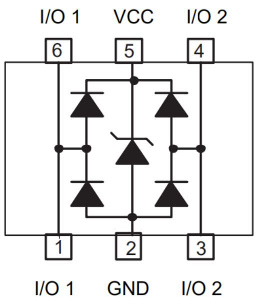
The USBLC6-2SC6 is a low capacitance TVS array utilizingleading monolithic silicon technology to provide fast re-sponse time and low ESD clamping voltage making this device an ideal solution for protecting voltage sensitive high-speed data lines. USBLC6-2SC6 has an ultra-low capacitance with a typical value at 0.4pF and complies with the IEC 61000-4-2 (ESD) with ±25kV air and ±20kV contact discharge
It is assembled into a 6-Pin lead-free SOT23-6 package
The low capacitance array make it ideal for four high speed data and transmission line. This
device is optimized for ESD protection of portable electronics.



SOT-23-6

Features

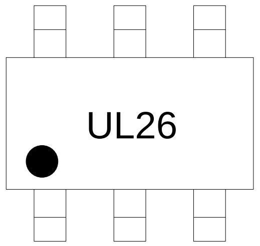
- Ultra low capacitance: 0.3pF typical (I/O to I/O)
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Up to four data lines and one power line protects
- JEDEC SOT23-6 package
- Complies with following standards:
  – IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±25kV
    Contact discharge: ±20kV
  – IEC61000-4-5 (Lightning) 5A (8/20μs)
- RoHS Compliant



Circuit diagram

Mechanical Characteristics

- Package: SOT23-6
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below



UL26 = Device Marking Code

Dot denotes Pin1

Marking (Top View)

Applications

- USB 2.0 Power and Data lines protection
- Digital Visual Interface (DVI)
- Monitors and Flat Panel Displays
- Video Graphic Cards
- Notebook and PC Computers

Ordering Information

Part Number	Packaging	Reel Size
USBLC6-2SC6	3000/Tape & Reel	7 inch

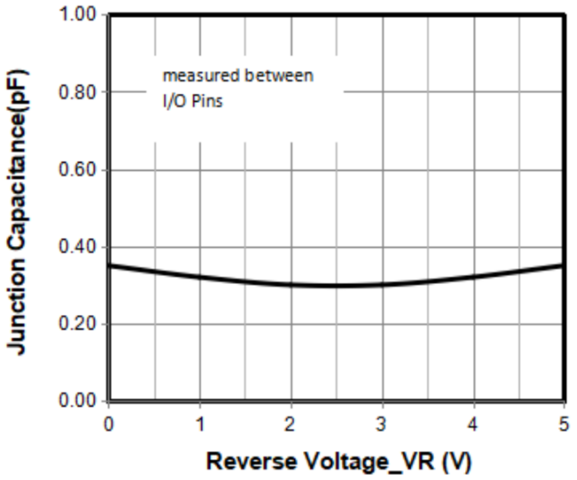
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	75	W
Peak Pulse Current (8/20μs)	I_{PP}	5	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±25 ±20	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

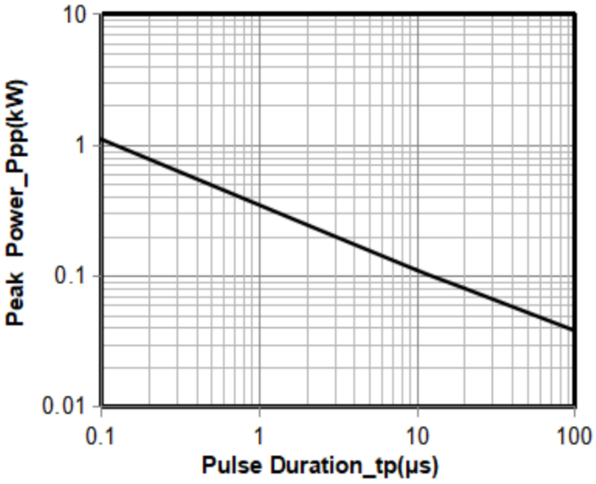
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	Any I/O pin to ground
Breakdown Voltage	V_{BR}	6			V	I_T = 1mA, any I/O pin to ground
Reverse Leakage Current	I_R			0.2	μA	V_{RWM} = 5V, any I/O pin to ground
Clamping Voltage	V_C			10	V	I_{PP} = 1A (8 x 20μs pulse), any I/O pin to ground
Clamping Voltage	V_C			15	V	I_{PP} = 5A (8 x 20μs pulse), any I/O pin to ground
Junction Capacitance	C_J		0.3	0.4	pF	VR = 0V, f = 1MHz, between I/O pins
Junction Capacitance	C_J		0.6	0.8	pF	VR = 0V, f = 1MHz, any I/O pin to ground

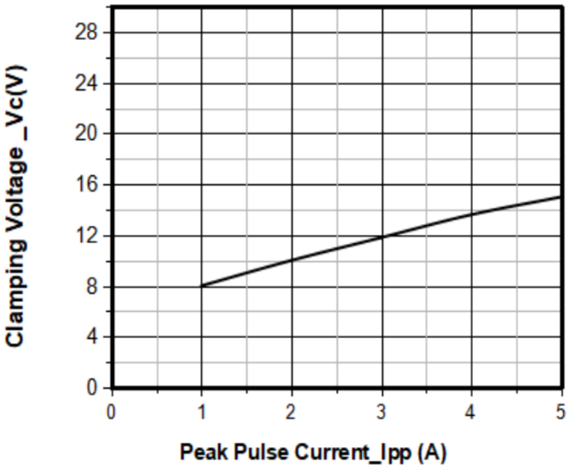
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



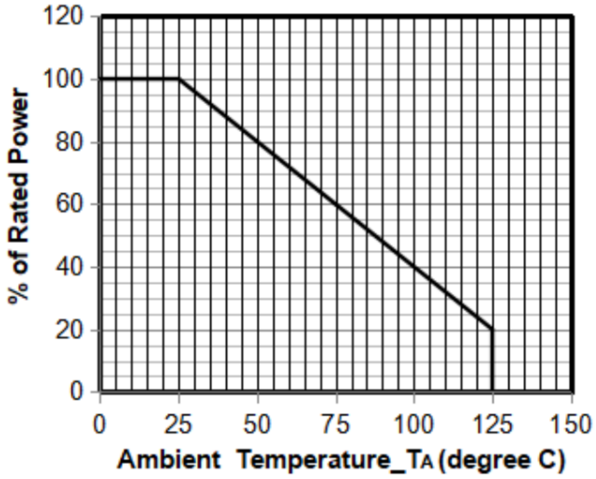
Junction Capacitance vs. Reverse Voltage



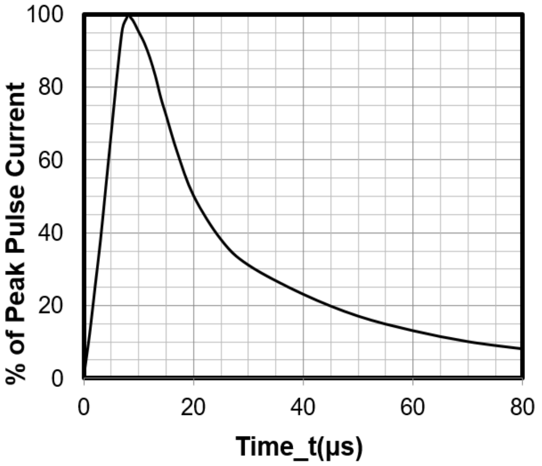
Peak Pulse Power vs. Pulse Time



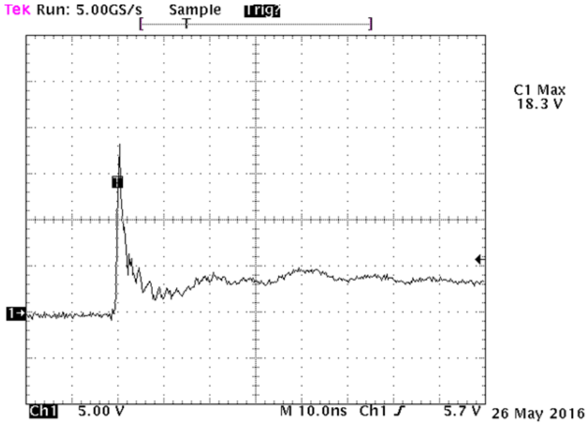
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform



Note：Data is taken with a 10x attenuator

ESD Clamping Voltage

8 kV Contact per IEC61000−4−2