



DESCRIPTION

The USBLC6-2SC6 is a low capacitance TVS array, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines.

The USBLC 6-2SC6 has an ultra-low capacitance with a typical value at 0.4pF, and complies with the IEC 61000-4-2 (ESD) standard with $\pm 25\text{kV}$ air and $\pm 20\text{kV}$ contact discharge. It is assembled into a 6-pin lead-free SOT 26 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.

The USBLC6-2SC6 is available in SOT-26 Package.

APPLICATIONS

- USB 2.0 Ports
- Digital video interface (DVI)
- Monitor and Flat Panel Displays
- Gigabit Ethernet

ORDERING INFORMATION

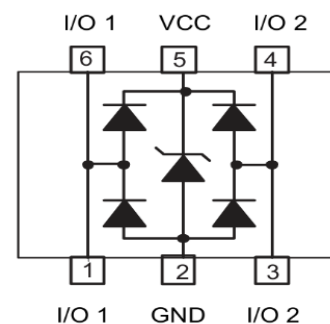
Package Type	Part Number
SOT-26	USBLC6-2SC6
Note	SPQ: 3,000pcs/Reel
AiT provides all RoHS Compliant Products	

FEATURE

- Ultra Low Capacitance 0.3 pF
- Low operating voltage: 5V
- Ultra low leakage: nA level
- Low Clamping Voltage:
- 2 data lines and one power line protects
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 25\text{kV}$
 - Contact discharge: $\pm 20\text{kV}$
 - IEC61000-4-5 (Lightning) : 5A (8/20 μs)

MACHANICAL DATA

- Lead Finish: Matte Tin
- UL Flammability Classification Rating 94V-0
- Case Material: "Green" Molding Compound
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below



PIN#	DESCRIPTION
1	IN/OUT 1
2	GND
3	IN/OUT 2
4	IN/OUT 1
5	VCC
6	IN/OUT 2



ABSOLUTE MAXIMUM RATINGS

T_A = 25°C, unless otherwise noted.

V _{ESD} , IEC 61000-4-2 (ESD)	Contact	±20 kV
	Air	±25 kV
P _{PP} , Peak Pulse Power (8/20 μs)		75W
I _{PP} , Peak Pulse Current		5A
T _J , Junction Temperature		-55 ~ 125°C
T _{STG} , Storage Temperature Range		-55 ~ 125°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability

ELECTRICAL CHARACTERISTICS

T_A = 25°C unless otherwise noted.

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Reverse Stand-Off Voltage	V _{RWM}	-	-	-	5.0	V
Reverse Breakdown voltage	V _{BR}	I _T = 1mA	6.0	-	-	V
Reverse leakage current	I _R	V _{RWM} = 5V	-	-	0.2	μA
Clamping Voltage	V _C	I _{PP} = 1A, t _P = 8/20μs	-	-	10	V
		I _{PP} = 5A, t _P = 8/20μs	-	-	15	
Junction Capacitance	C _J	V _R = 0V, f = 1MHz, Any I/O pin to GND	-	0.6	0.8	pF
Junction Capacitance	C _J	V _R = 0V, f = 1MHz, between I/O pins	-	0.3	0.4	pF



TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Junction Capacitance vs. Reverse Voltage

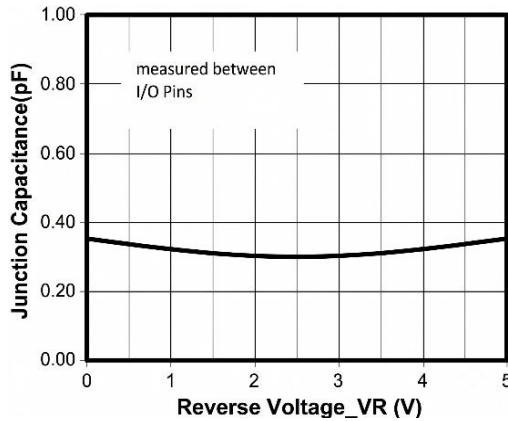


Fig2 . Peak Pulse Power vs. Pulse Time

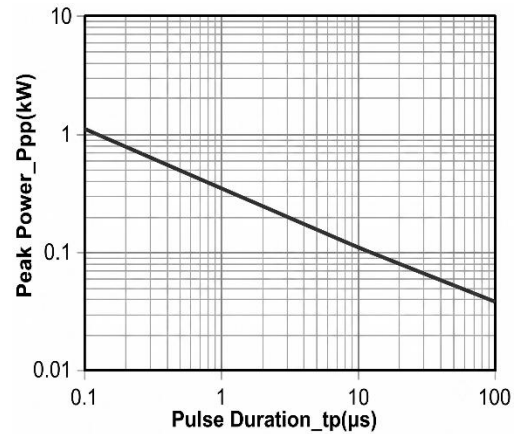


Fig 3. Clamping Voltage vs. Peak Pulse Current

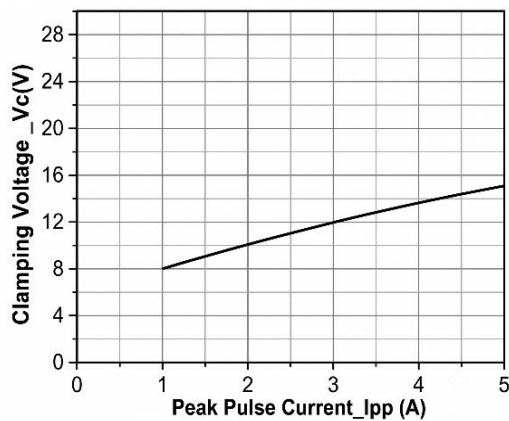


Fig 4. Power Derating Curve

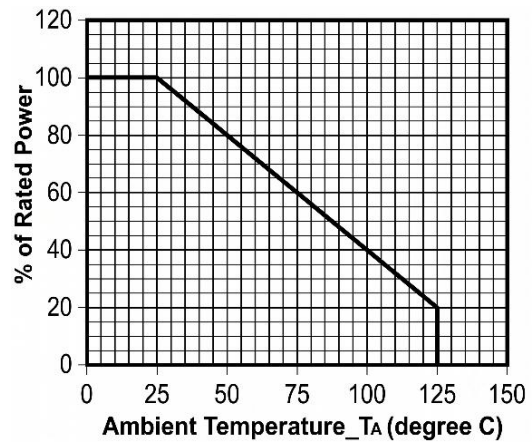


Fig 5. 8/20us Peak Pulse Current Waveform

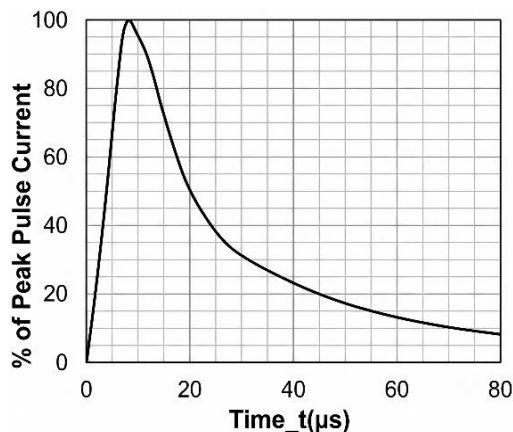
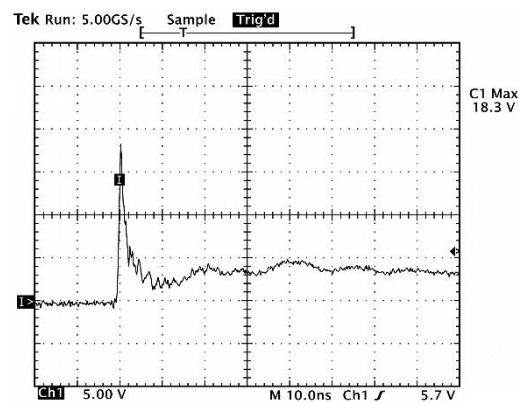


Fig 6. ESD Clamping Voltage

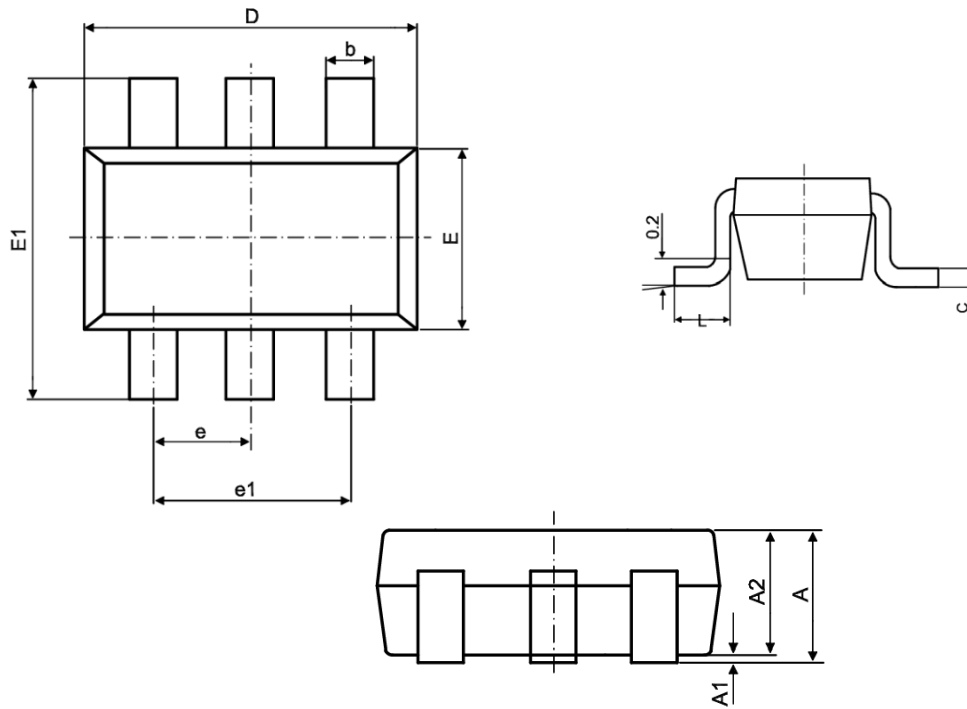
8 kV Contact per IEC61000-4-2





PACKAGE INFORMATION

Dimension in SOT-26 Package (Unit: mm)



SYMBOL	MIN	
	MIN	MAX
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E	1.500	1.700
E1	2.650	2.950
e	0.950 (BSC)	
e1	1.800	2.000
L	0.300	0.600
θ	0°C	8°C



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