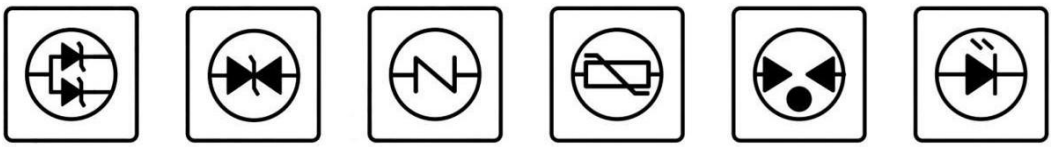
MSKSEMI 美森科
SEMICONDUCTOR



MSUSBLC6-2SC6

Product specification

Description

The MSUSBLC6-2SC6 are monolithic application specific devices dedicated to ESD protection of high speed interfaces, such as USB 2.0, Ethernet links and video lines.The very low line capacitance secures a high le vel of signal integrity without compromising in protecting sensitive chips against the most stringently characteri zed ESD strikes.

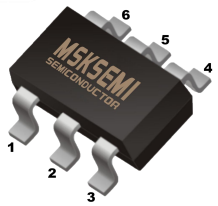
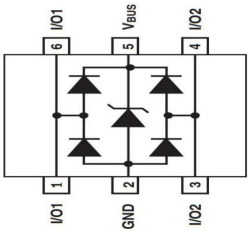
Features and benefits

- ESD Protect for 2 high-speed I/O channels
- Provide ESD protechtion for each channel to IEC 61000-4-2(ESD)±30kV(air),±30kV(contact)
- Low Working Voltage: 5.0V
- Low Capacitance: 0.8pF (I/O-GND)
- Low Clamping Voltage
- Response time is typically < 1 ns
- Array of surge rated diodes with internal equivalent TVS diodes
- Small package saves board space
- RoHS compliant

Application information

- Video Graphics Cards
- USB2.0 Power and Data lines protechtion
- 10/100/1000 Ethernet
- Notebooks and PC Computers
- IEEE 1394 Firewire Ports
- Portable electronics
- SIM ports

Reference News

SOT23-6	Graphic symbol	Marking
		UL26

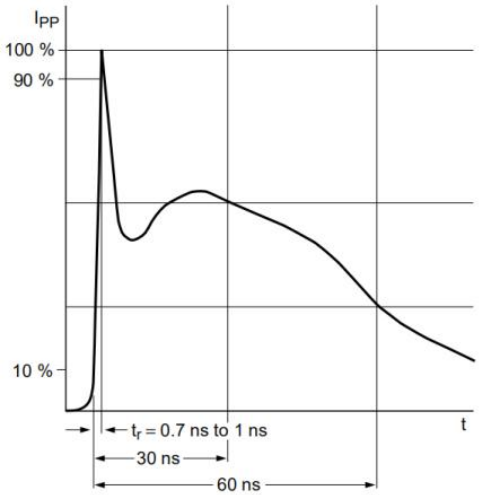
Maximum Ratings (T_{OP} = 25 °C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (Tp = 8/20μs)	P_{PPM}	78	W
Rated Peak Pulse Current (Tp = 8/20μs)	I_{PPM}	6	A
ESD voltage IEC 61000-4-2 (air discharge)	V_{ESD}	30	kV
ESD voltage IEC 61000-4-2 (contact discharge)	V_{ESD}	30	kV
Maximum lead temperature for soldering during 10s	T_L	260	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C
Operating Temperature Range	T_{OP}	-40 to +125	°C

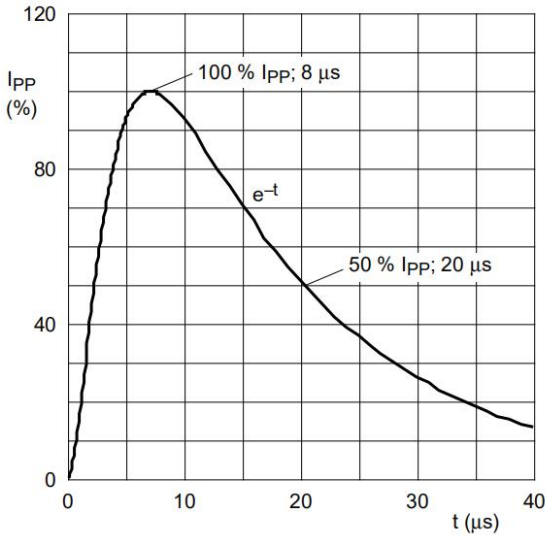
Electrical Characteristics (T_{OP} = 25 °C, unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V_{RWM}	--	--	5.0	V	
Breakdown Voltage	V_{BR}	6.5	--	9.0	V	I_T=1mA
Leakage Current ILeak	I_R	--	--	100	nA	V_{RWM}=5V
Clamping Voltage(I/O-GND)	V_C	--	11.0	13.0	V	I_{PP}=6A,Tp=8/20μs
Clamping Voltage(V_{DD}-GND)	V_C	--	11.0	13.0	V	I_{PP}=8A,Tp=8/20μs
Junction Capacitance	C_j	--	0.4	0.5	pF	V_R=0V, f=1MHz I/O to I/O
Junction Capacitance	C_j	--	0.8	1.0	pF	V_R=0V, f=1MHz I/O to GND

TypicalCharacteristics

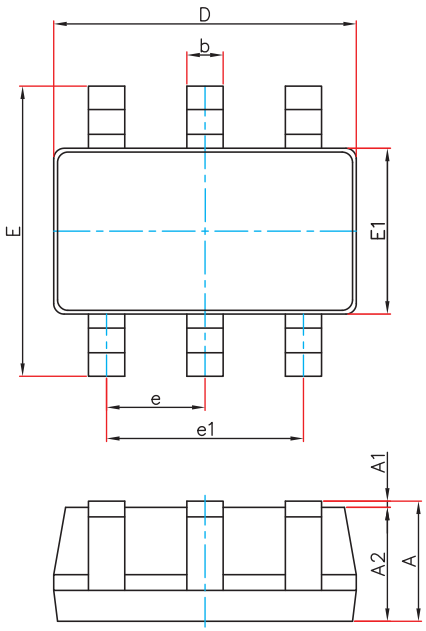


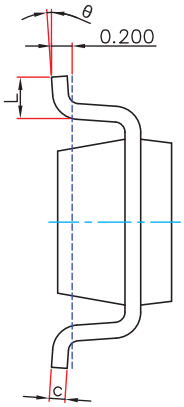
IEC61000−4−2 Waveform



IEC 61000-4-5 Waveform(8/20µs pulse)

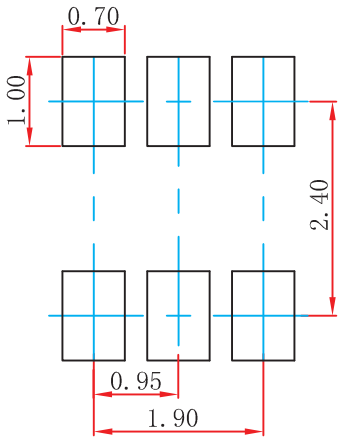
SOT-23-6 Package Outline Dimensions





Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

SOT-23-6 Suggested Pad Layout



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

REEL SPECIFICATION

P/N	PKG	QTY
MSUSBLC6-2SC6	SOT-23-6	3000

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