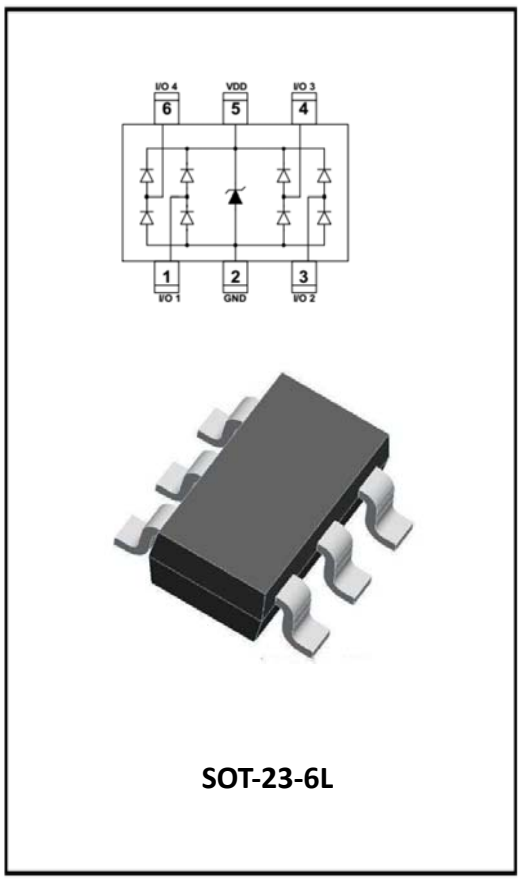
4-Line, Uni-directional, Ultra-low Capacitance, Transient Voltage Suppressor



Features

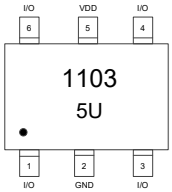
- Operating voltage: 5V
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±20kV (contact)
  IEC61000-4-5(surge): 4.5A (8/20μs)
- Ultra low capacitance: Cj=0.45pF typ
- Ultra low leakage
- Low clamping voltage
- Up to 4 lines protects
- RoHS Compliant

Applications

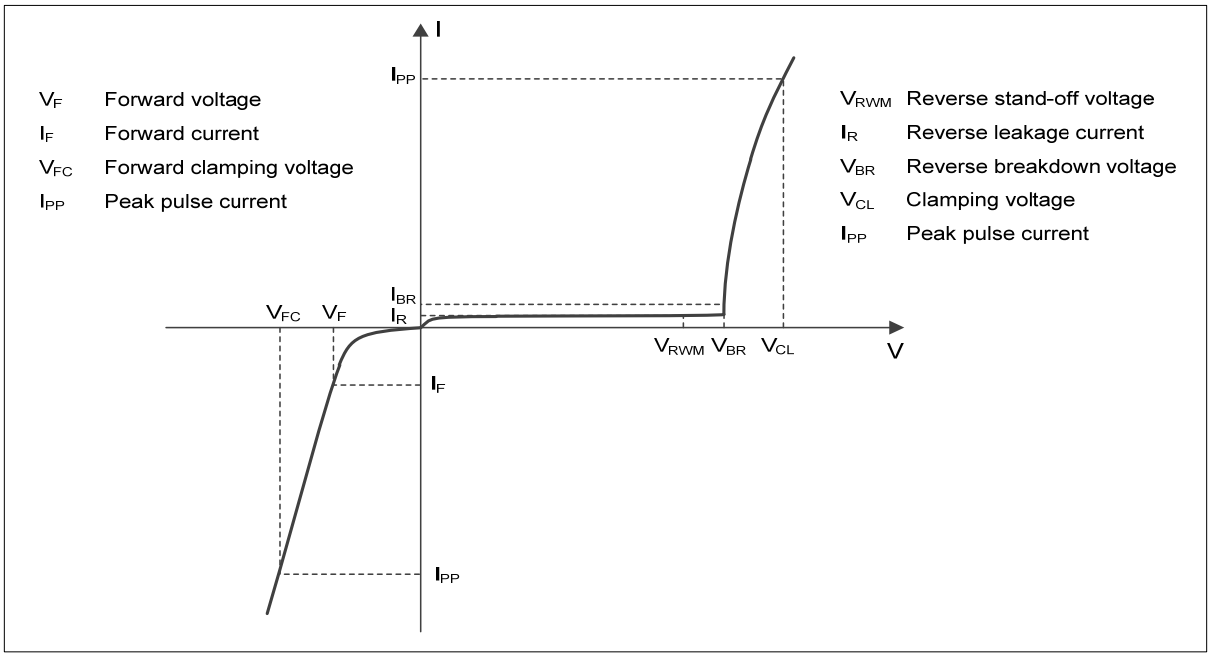
- USB 2.0
- Video Graphics Cards
- DVI
- IEEE 1394
- Monitors and Flat Panel Displays
- 10/100 Ethernet
- NotebookS

Mechanical Data

- Package: SOT-23-6L
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- Moisture Sensitivity: Level 1 per J-STD-020
- Marking Information: See Below



■Definitions of electrical characteristics



■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power (t_p = 8/20μs)	P_{pk}	54	W
Peak pulse current (t_p = 8/20μs)	I_{PP}	4.5	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±25	KV
ESD according to IEC61000-4-2 contact discharge		±25	
Junction temperature	T_J	125	℃
Storage temperature	T_{STG}	-55~150	℃

■Electrical Characteristics（T_a=25℃ Unless otherwise specified）

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V	Any I/O pin to ground			5.0
Reverse leakage current	I_R	nA	V_{RWM} = 5.0V, any I/O pin to ground			100
Reverse breakdown voltage	$V_{(BR)}$	V	I_T = 1mA, any I/O pin to ground	7.0		9.0
Forward Voltage	V_F	V	I_F=10mA ground to any I/O pin	0.6		1.2
Clamping voltage 1)	V_{CL}	V	I_{PP} = 16A, t_p = 100ns any I/O pin to ground		13.2	
Dynamic resistance 1)	R_{DYN}	Ω			0.3	
Clamping voltage 2)	V_{CL}	V	V_{ESD} = 8kV any I/O pin to ground		14	
Clamping voltage	V_{CL}	V	I_{PP} = 1A, t_p = 8/20μs		7.8	9
		V	I_{PP} = 4.5A, t_p = 8/20μs		10	12
Junction capacitance	CJ	pF	V_R = 0V, f = 1MHz Any I/O pin to GND		0.5	0.7
			V_R = 0V, f = 1MHz Between I/O pins		0.2	0.4

Notes:

(1). TLP parameter: Z0 = 50Ω, tp = 100ns, tr = 2ns, averaging window from 60ns to 80ns. RDYN is calculated from 4A to 16A.

(2). Contact discharge mode, according to IEC61000-4-2.

(3). Non-repetitive current pulse, according to IEC61000-4-5

■Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESDSLC0504S2S	Approximate 15.85	3000	30000	120000	Tape & reel	7 reel

■ Characteristics (Typical)

Fig.1 8/20μs waveform per IEC61000-4-5

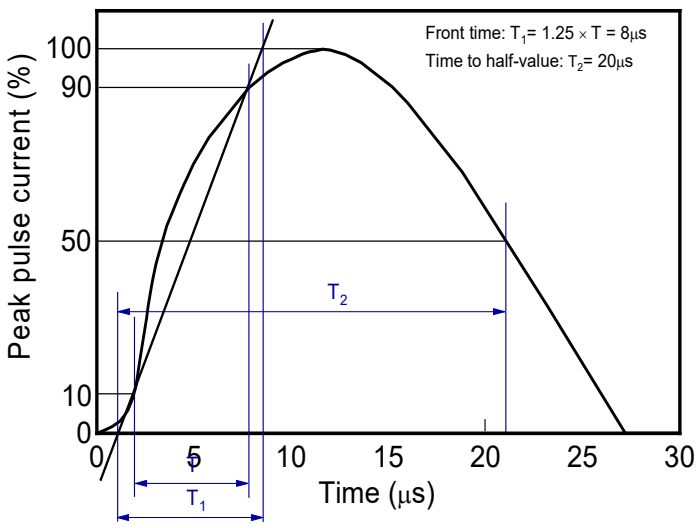


Fig.2 Contact discharge current waveform per IEC61000-4-2

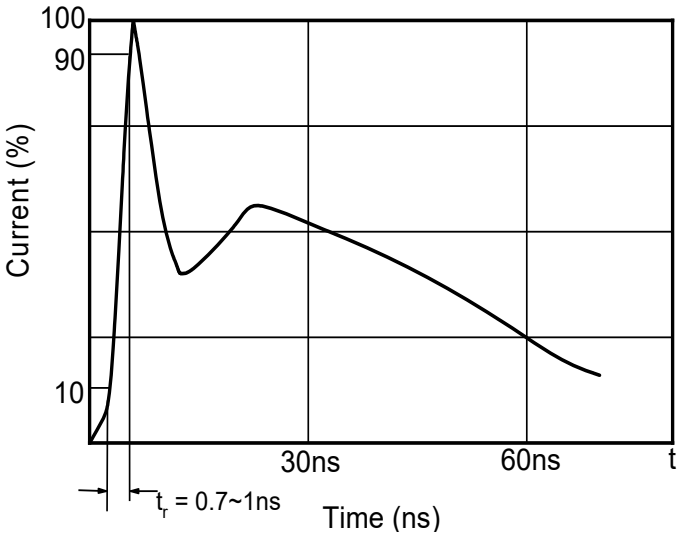


Fig.3 Clamping voltage vs. Peak pulse current

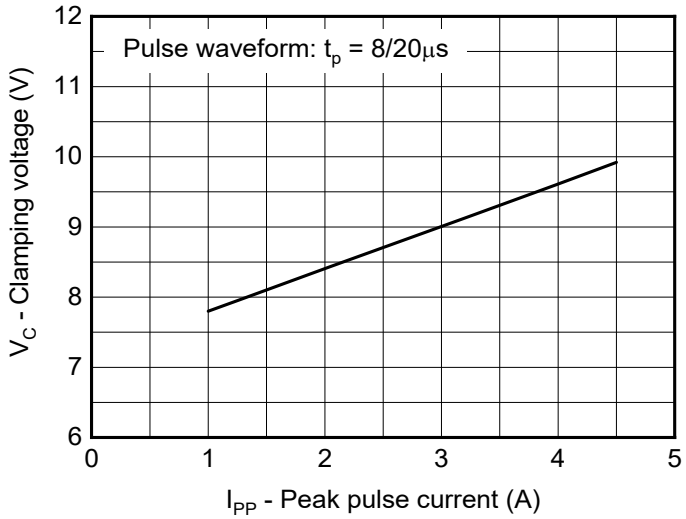


Fig.4 Capacitance vs. Reverse voltage

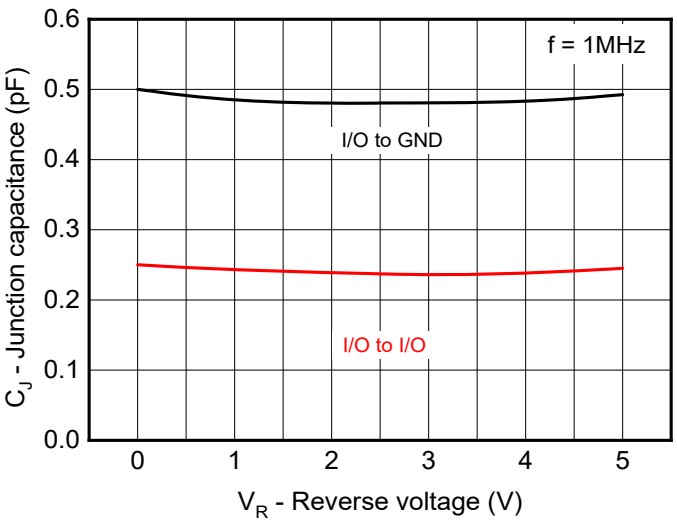


Fig.5 Non-repetitive peak pulse power vs. Pulse time

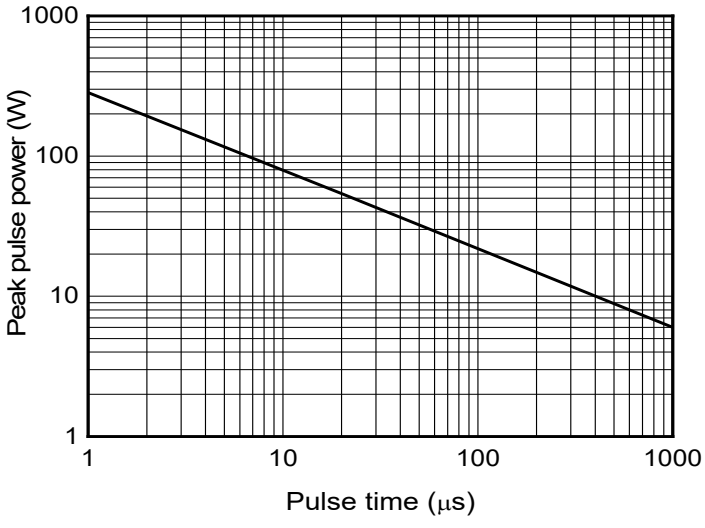


Fig.6 Power derating vs. Ambient temperature

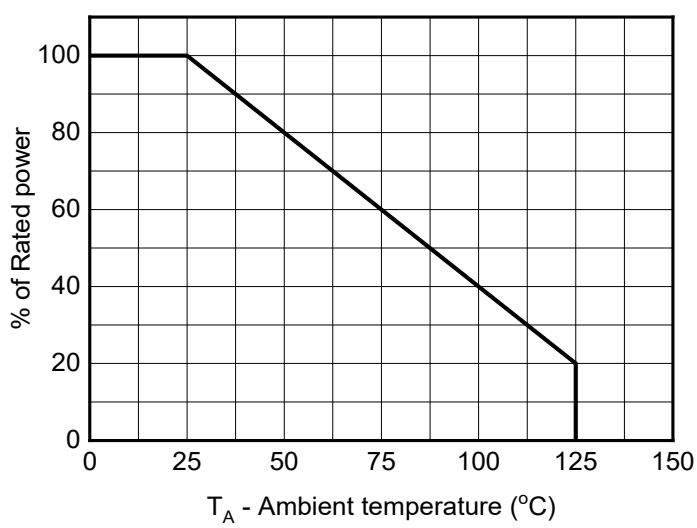


Fig.7 ESD clamping
(+8kV contact discharge per IEC61000-4-2)

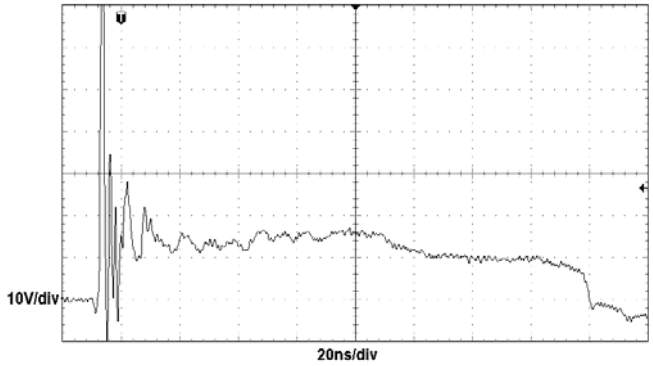


Fig.8 ESD clamping
(-8kV contact discharge per IEC61000-4-2)

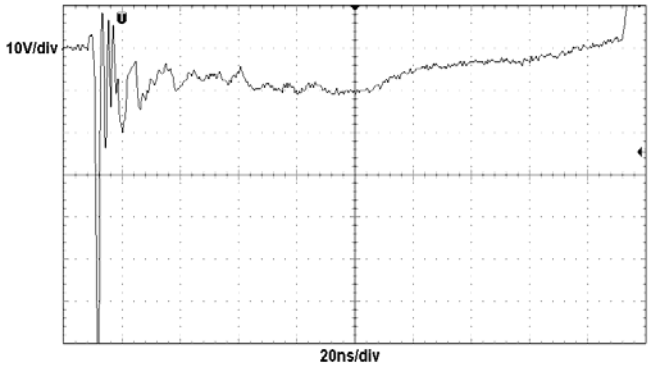
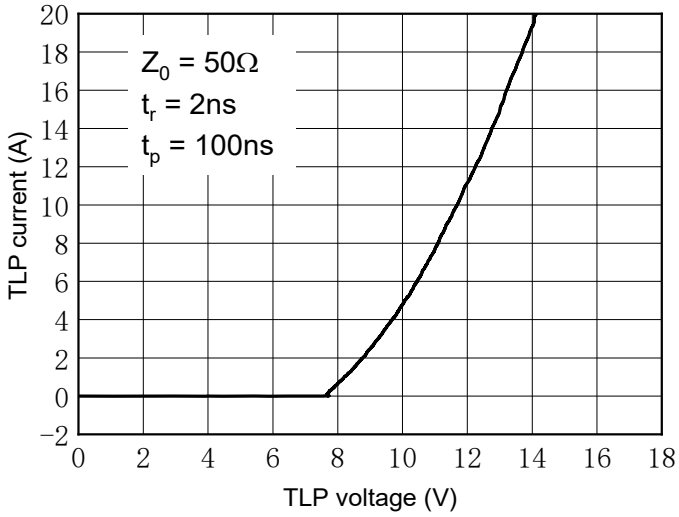
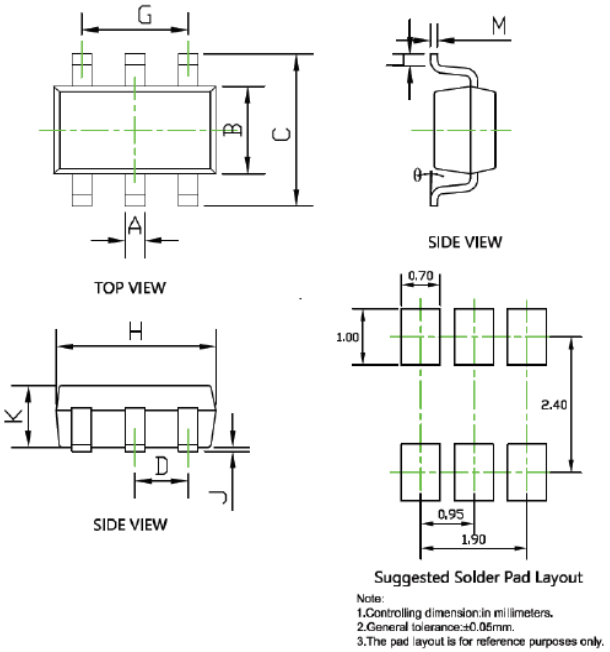


Fig.9 TLP Measurement



■ Outline Dimensions

SOT-23-6L



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

DIMENSIONS				
SYMBOL	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.012	0.020	0.300	0.500
B	0.059	0.067	1.500	1.700
C	0.104	0.116	2.650	2.950
D	0.037BSC		0.950BSC	
G	0.075BSC		1.900BSC	
H	0.111	0.119	2.820	3.020
J	0.000	0.004	0.000	0.100
K	0.041	0.045	1.050	1.150
L	0.012	0.024	0.300	0.600
M	0.004	0.008	0.100	0.200
θ	0°	8°	0°	8°

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