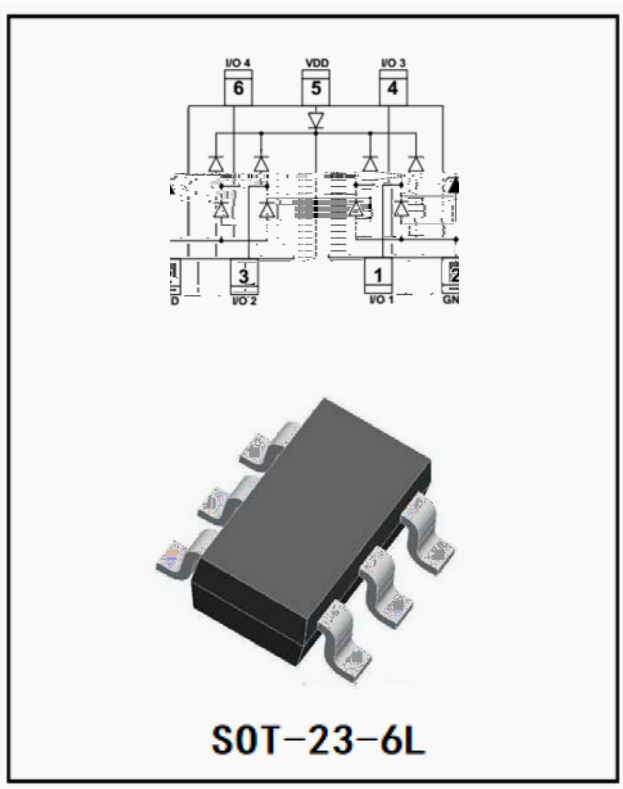
4-Line, Uni-directional, low Capacitance Transient Voltage Suppressors



Features

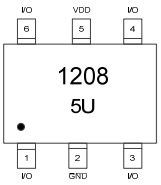
- Stand-off voltage: 5V Max
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±30kV (contact)
  IEC61000-4-4(EFT):40A(5/50ns)
  IEC61000-4-5(surge): 6A (8/20μs)
- Ultra-low capacitance: C_J = 1.2pF typ
- Low leakage current
- Low clamping voltage
- RoHS Compliant

Applications

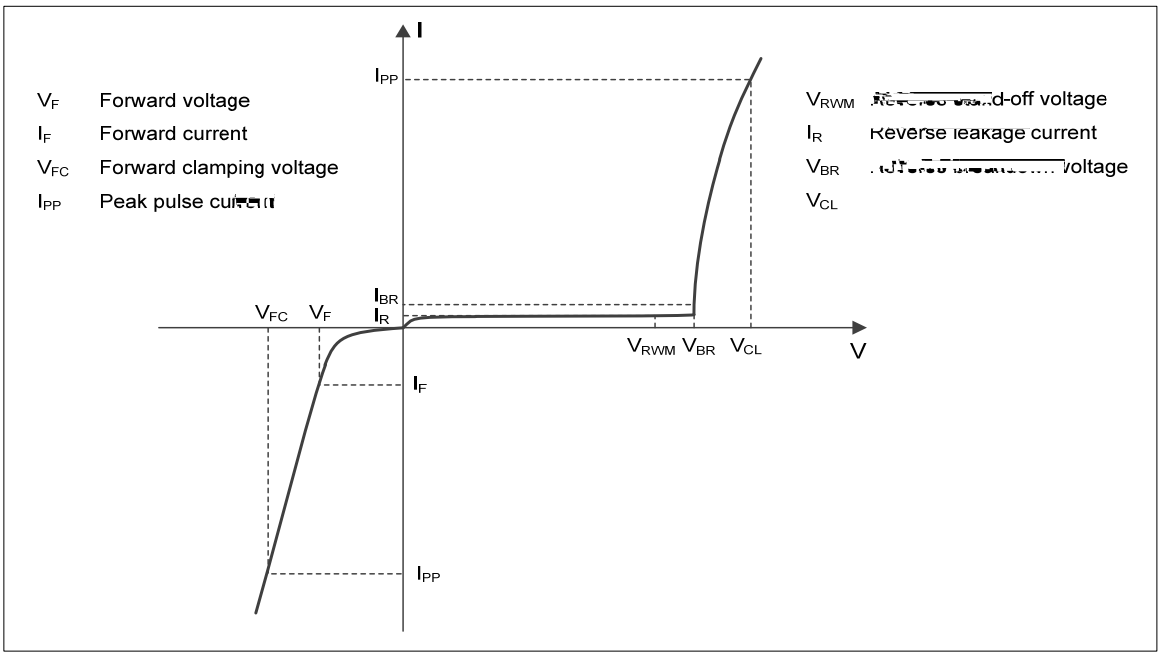
- USB 2.0
- Video Graphics Cards
- DVI
- IEEE 1394
- Monitors and Flat Panel Displays
- 10/100 Ethernet
- Notebooks

Mechanical Characteristics

- 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



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

PARAMETER	SYMBOL	Rating	UNIT
Peak pulse power (t_p = 8/20μs)	P_{pk}	72	W
Peak pulse current (t_p = 8/20μs)	I_{PP}	6	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±30	KV
ESD according to IEC61000-4-2 contact discharge		±30	KV
Junction temperature	T_J	125	°C
Storage temperature	T_{STG}	-55~150	°C

■Electrical Characteristics T_a=25 Unless otherwise specified

I/O Pins

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				5.0
Reverse leakage current	I_R	nA	V_{RWM} =5V			100
Reverse breakdown voltage	V_{BR}	V	I_{BR} = 1mA	7.0	8.0	9.0
Forward voltage	V_F	V	I_F = 10mA	0.6	0.9	1.2
Clamping voltage 1)	V_{CL}	V	I_{PP} = 16A, t_p = 100ns		11	
Dynamic resistance 1)	R_{DYN}	Ω			0.31	
Clamping voltage 2)	V_{CL}	V	V_{ESD} +8kV		12	
Clamping voltage 3)	V_{CL}	V	I_{PP} = 1A, t_p = 8/20μs		6.6	8
		V	I_{PP} = 6A, t_p = 8/20μs		10	12
Junction capacitance	C_J	pF	V_R = 0V, f = 1MHz Any I/O pin to GND		1.2	1.6
		pF	V_R = 0V, f = 1MHz Between Any I/O pins		0.6	0.8

VDD Pins

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				6.0
Reverse leakage current	I_R	nA	V_{RWM} =6V			1
Reverse breakdown voltage	V_{BR}	V	I_{BR} = 1mA	7.0	8.0	9.0
Forward voltage	V_F	V	I_F = 10mA	0.6	0.9	1.2
Clamping voltage 1)	V_{CL}	V	I_{PP} = 16A, t_p = 100ns		9.5	
Dynamic resistance 1)	R_{DYN}	Ω			0.20	
Clamping voltage 2)	V_{CL}	V	V_{ESD} +8kV		10	
Clamping voltage 3)	V_{CL}	V	I_{PP} = 1A, t_p = 8/20μs		6.4	7.0

Fig.3 Clamping voltage vs. Peak pulse current

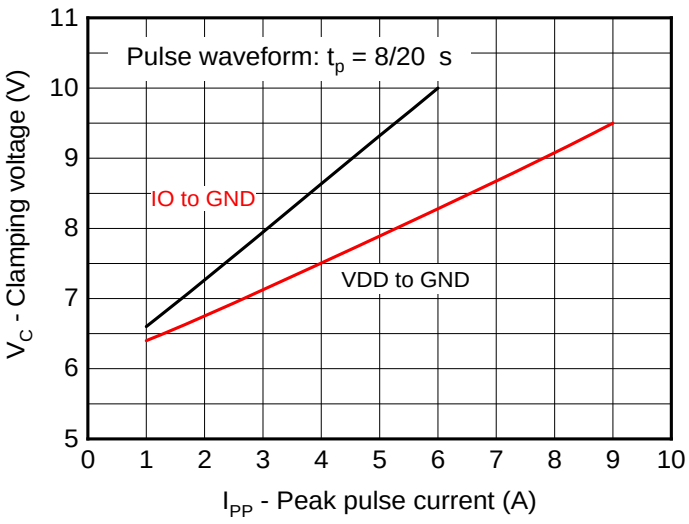


Fig.4 Capacitance vs. Reverse voltage

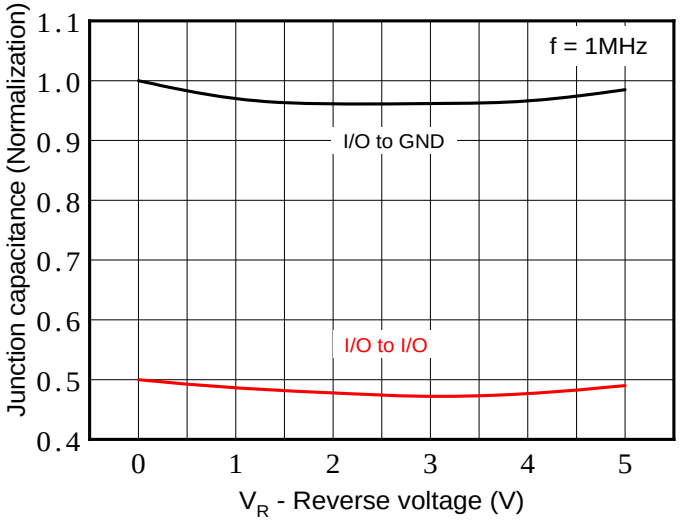


Fig.5 Non-repetitive peak pulse power vs. Pulse time

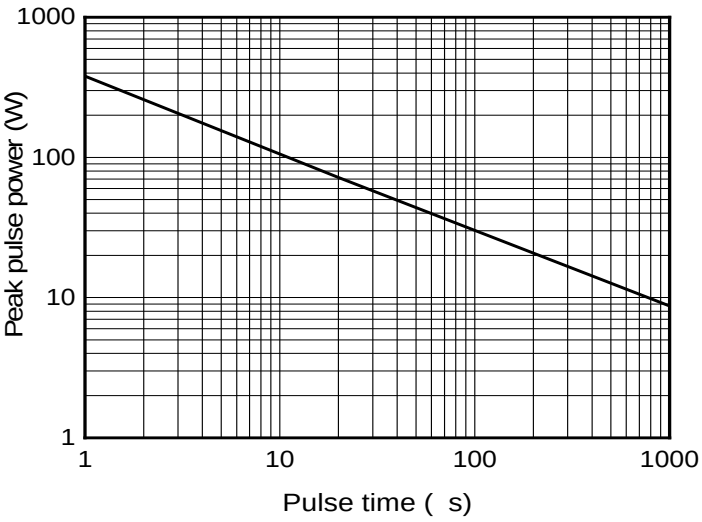


Fig.6 Power derating vs. Ambient temperature

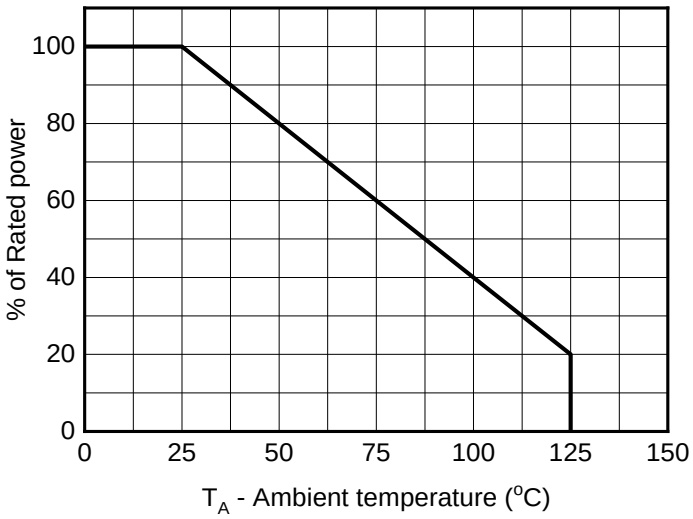


Fig.7 ESD clamping - I/O to GND
(+8kV contact discharge per IEC61000-4-2)

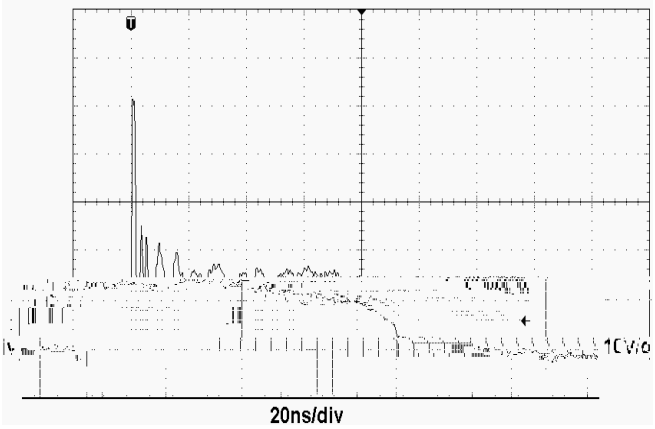
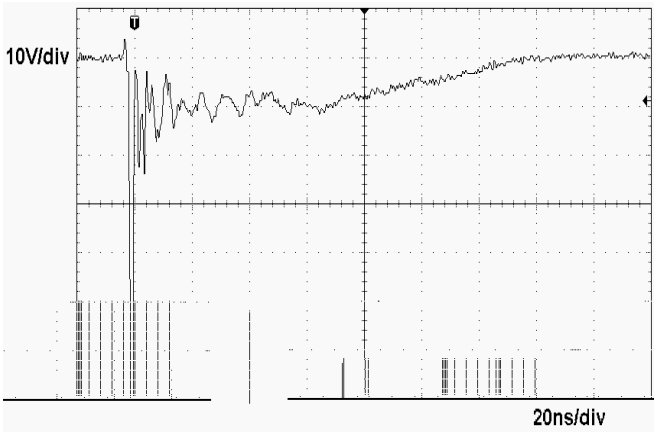


Fig.8 ESD clamping - I/O to GND
(-8kV contact discharge per IEC61000-4-2)



ESDSLC0504S2A

■**SOT-23 6L Package Outline Drawing**

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