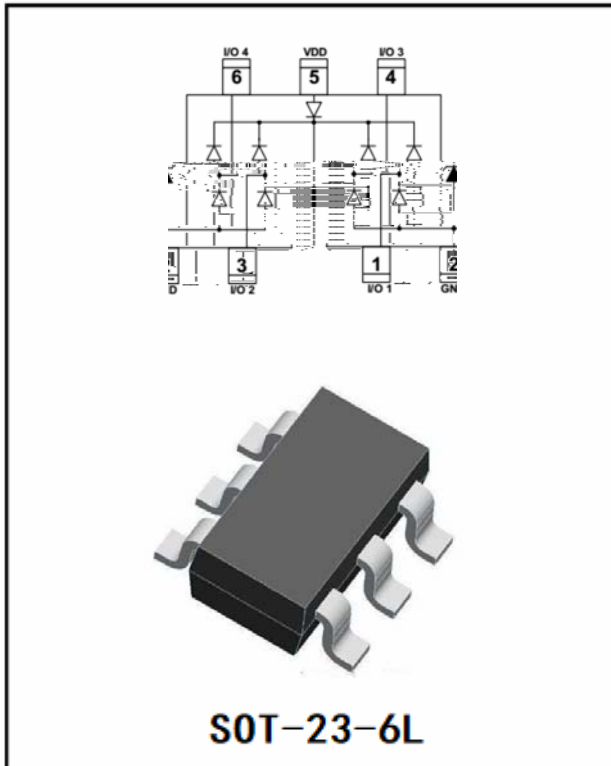


4-Line, Uni-directional, low Capacitance Transient Voltage Suppressors



Features

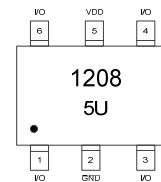
- Stand-off voltage: 5V Max
- Transient protection for each line according to
 - IEC61000-4-2(ESD): $\pm 30\text{kV}$ (contact)
 - IEC61000-4-4(EFT): 40A(5/50ns)
 - IEC61000-4-5(surge): 6A (8/20 μs)
- Ultra-low capacitance: $C_J = 1.2\text{pF}$ typ
- Low leakage current
- Low clamping voltage
- RoHS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

Applications

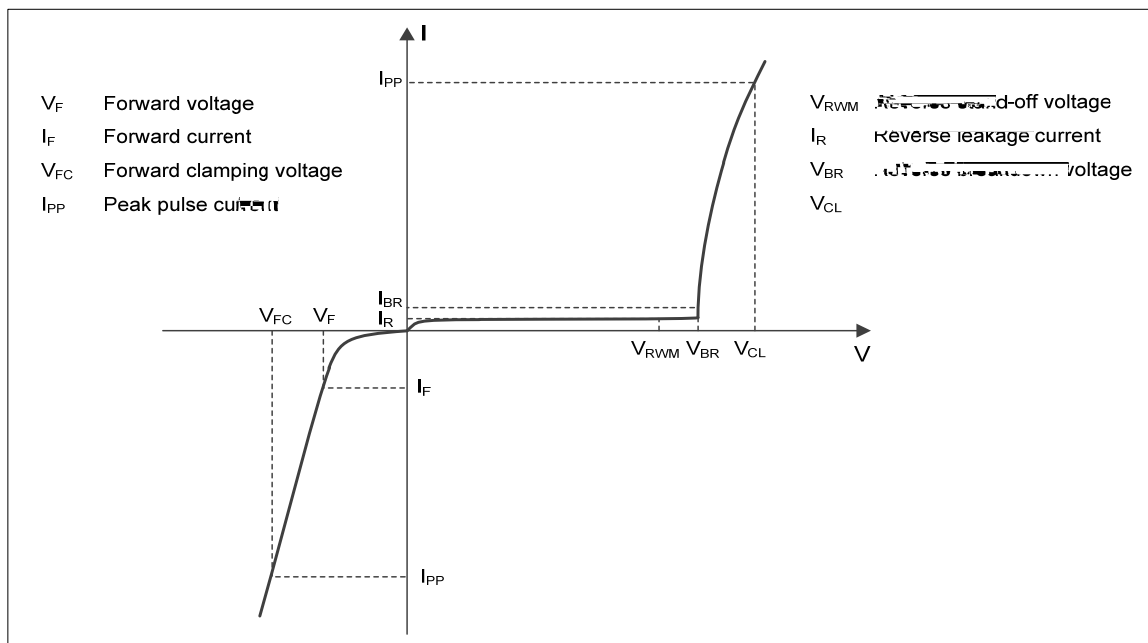
- USB 2.0
- Video Graphics Cards
- DVI
- IEEE 1394
- Monitors and Flat Panel Displays
- 10/100 Ethernet
- Notebooks

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





ESDSL0504S2A

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

PARAMETER	SYMBOL	Rating	UNIT
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	72	W
Peak pulse current ($t_p = 8/20\mu s$)	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 Ta=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}				0.31	
Clamping voltage ²⁾	V_{CL}	V	$V_{ESD} + 8kV$		12	
Clamping voltage ³⁾	V_{CL}	V	$I_{PP} = 1A, t_p = 8/20\mu s$		6.6	8
		V	$I_{PP} = 6A, t_p = 8/20\mu s$		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



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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}				0.20	
Clamping voltage ²⁾	V_{CL}	V	$V_{ESD} + 8kV$		10	
Clamping voltage ³⁾	V_{CL}	V	$I_{PP} = 1A, t_p = 8/20\mu s$		6.4	7.0



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Fig.3 Clamping voltage vs. Peak pulse current

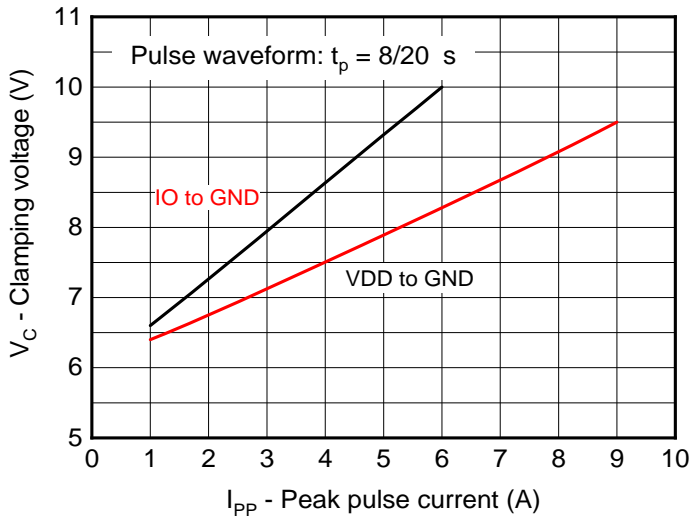


Fig.4 Capacitance vs. Reverse voltage

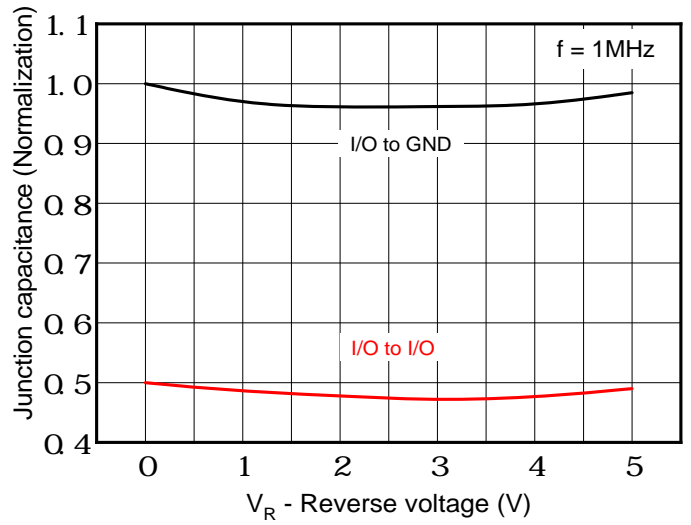


Fig.5 Non-repetitive peak pulse power vs. Pulse time

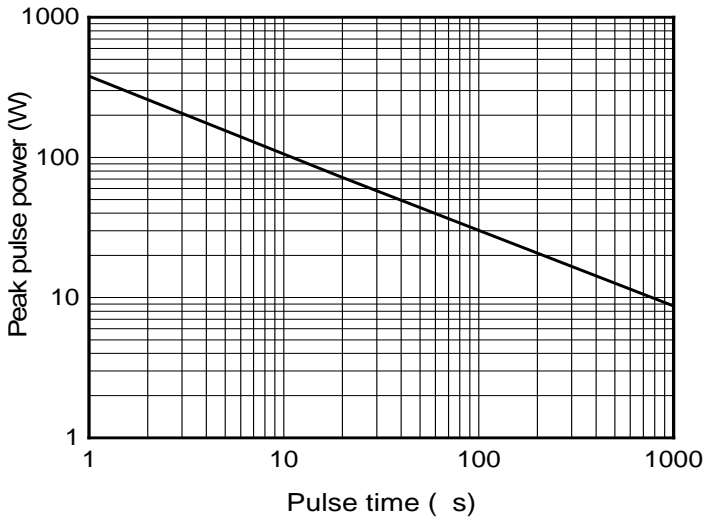


Fig.6 Power derating vs. Ambient temperature

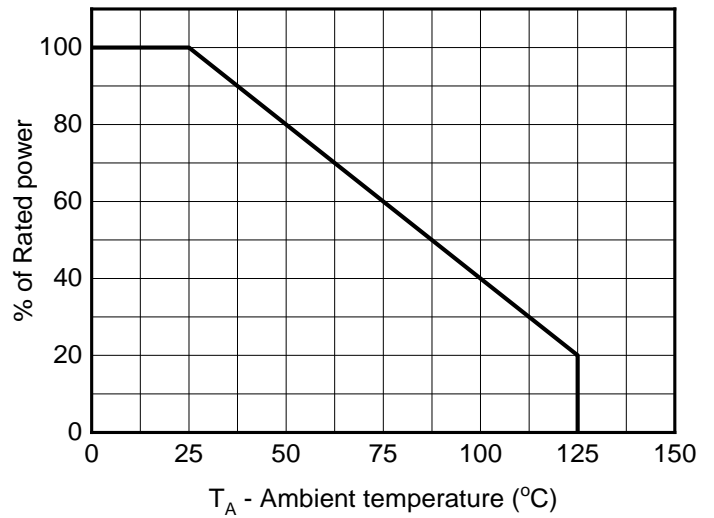


Fig.7 ESD clamping - I/O to GND (+8kV contact discharge per IEC61000-4-2)

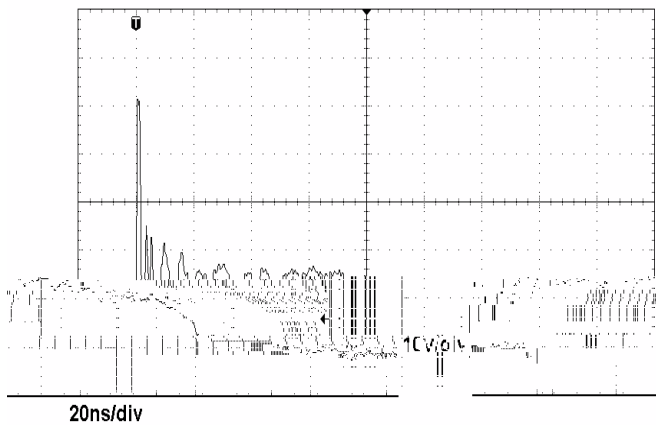
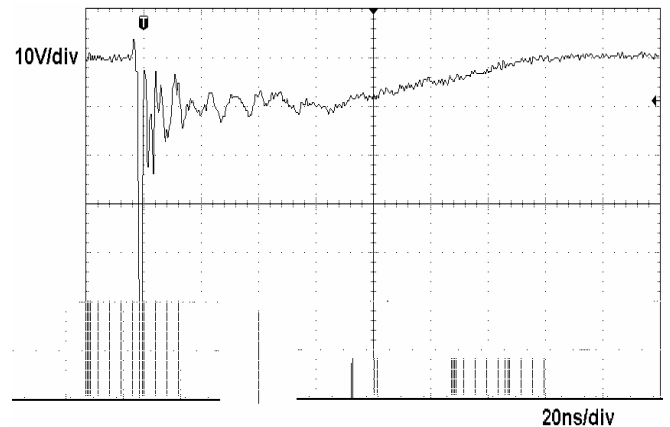


Fig.8 ESD clamping - I/O to GND (-8kV contact discharge per IEC61000-4-2)



ESDSL0504S2A



SOT-23 6L Package Outline Drawing



ESDSL0504S2A

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