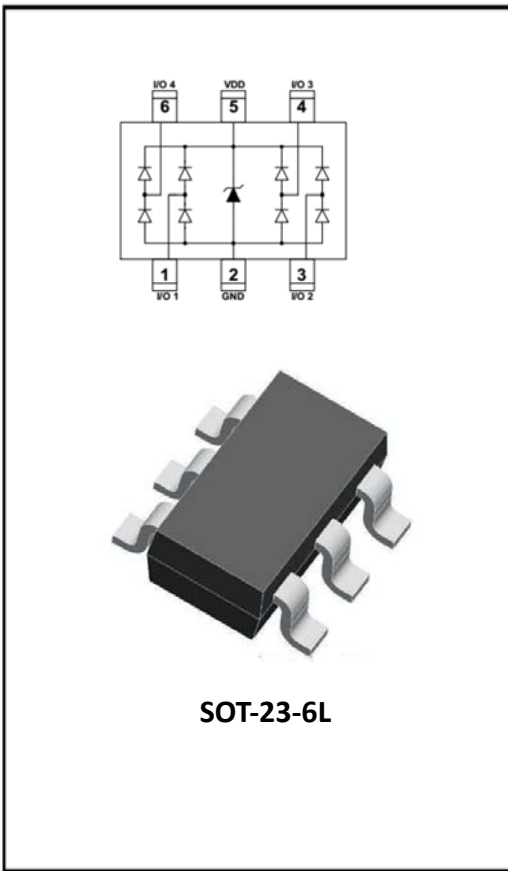


## 4-Line, Uni-directional, Ultra-low Capacitance, Transient Voltage Suppressor



SOT-23-6L

### Features

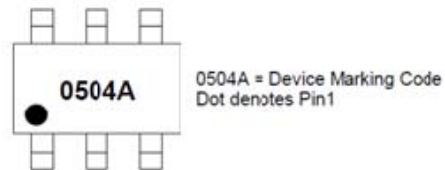
- Operating voltage: 5V
- Transient protection for each line according to IEC61000-4-2(ESD):  $\pm 20\text{kV}$  (contact)  
IEC61000-4-5(surge): 5A (8/20 $\mu\text{s}$ )
- Ultra low capacitance:  $C_j=0.65\text{pF}$  typ
- Ultra low leakage
- Low clamping voltage
- Up to 4 lines protects
- RoHS Compliant

### Applications

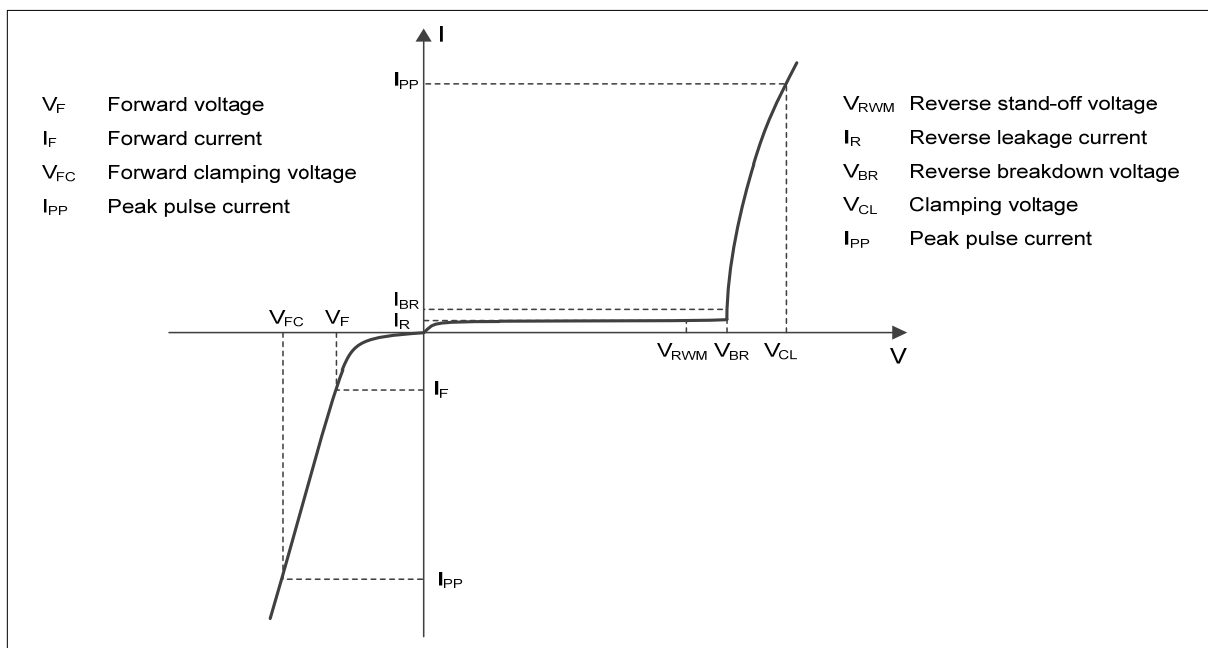
- USB 2.0 Power and Data lines protection
- Digital Visual Interface (DVI)
- Monitors and Flat Panel Displays
- Video Graphic Cards
- Notebook and PC Computers

### 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





# ESDSL0504S2

## ■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ( $t_p = 8/20\mu s$ )	$P_{pk}$	75	W
Peak pulse current ( $t_p = 8/20\mu s$ )	$I_{pp}$	5	A
ESD according to IEC61000-4-2 air discharge	$V_{ESD}$	$\pm 25$	KV
ESD according to IEC61000-4-2 contact discharge		$\pm 20$	
Junction temperature	$T_J$	-55~125	$^{\circ}C$
Storage temperature	$T_{STG}$	-55~150	$^{\circ}C$

## ■Electrical Characteristics ( $T_a=25^{\circ}C$ 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	$I_R$	$\mu A$	$V_{RWM} = 5.0V$ , any I/O pin to ground			0.5
Reverse breakdown voltage	$V_{(BR)}$	V	$I_T = 1mA$ , any I/O pin to ground	6.0		
Clamping voltage	$V_{CL}$	V	$I_{PP} = 1A$ , $t_p = 8/20\mu s$			10
		V	$I_{PP} = 5A$ , $t_p = 8/20\mu s$			15
Junction capacitance	CJ	pF	$V_R = 0V$ , $f = 1MHz$ Any I/O pin to GND		0.65	0.8
			$V_R = 0V$ , $f = 1MHz$ Between I/O pins		0.3	0.4

Notes: I/O pins are Pin 1, 3, 4 and 6

## ■Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESDSL0504S2	Approximate 15.85	3000	30000	120000	Tape & reel	7 reel



## ■ Characteristics (Typical)

Fig.1 8/20 $\mu$ s waveform per IEC61000-4-5

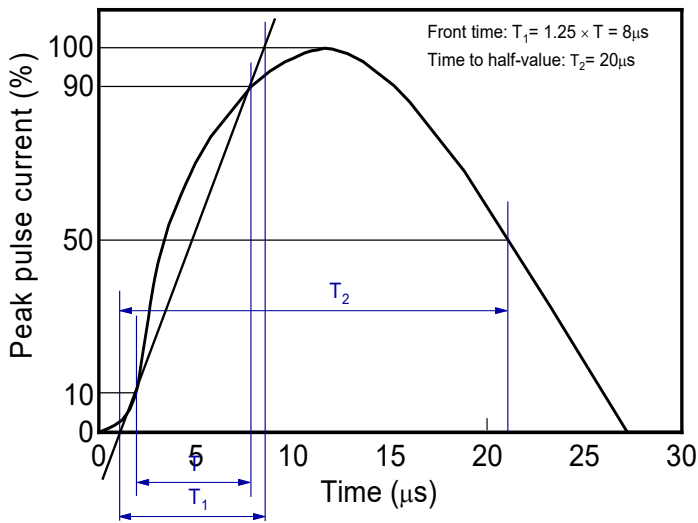


Fig.2 Contact discharge current waveform per IEC61000-4-2

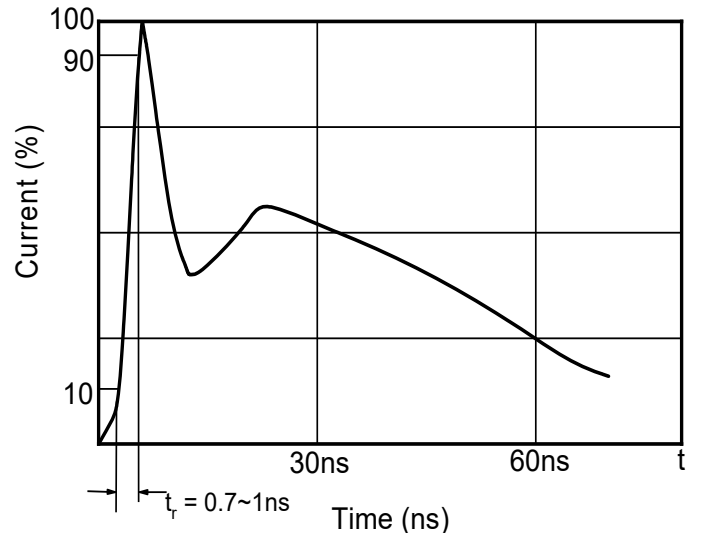


Fig.3 Clamping voltage vs. Peak pulse current

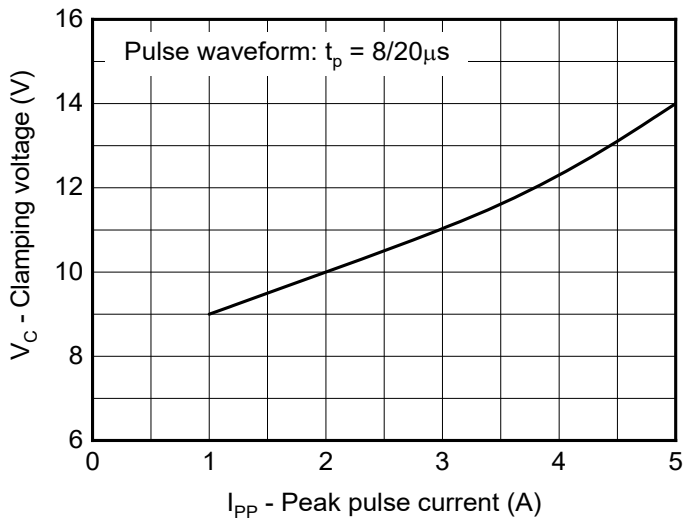


Fig.4 Capacitance vs. Reverse voltage

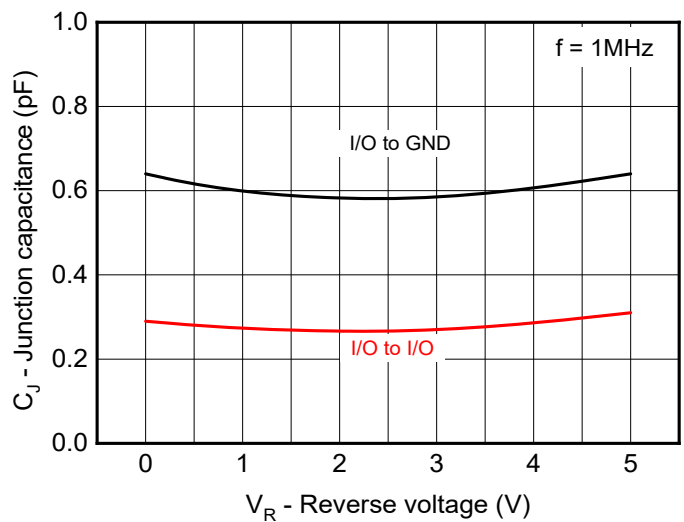


Fig.5 Non-repetitive peak pulse power vs. Pulse time

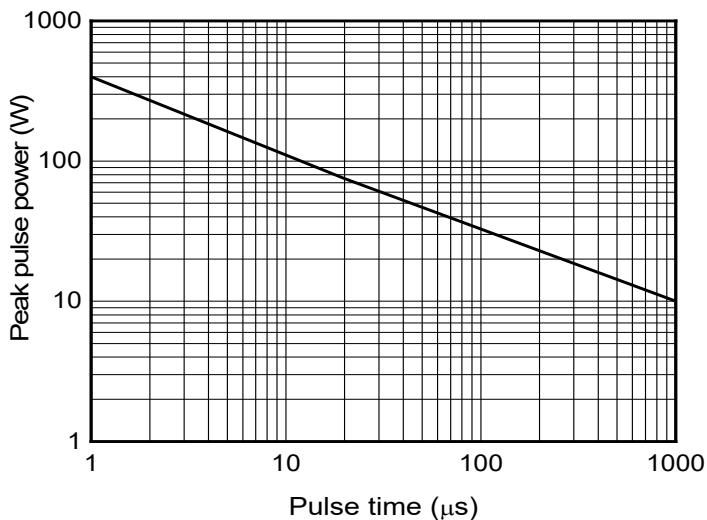


Fig.6 Power derating vs. Ambient temperature

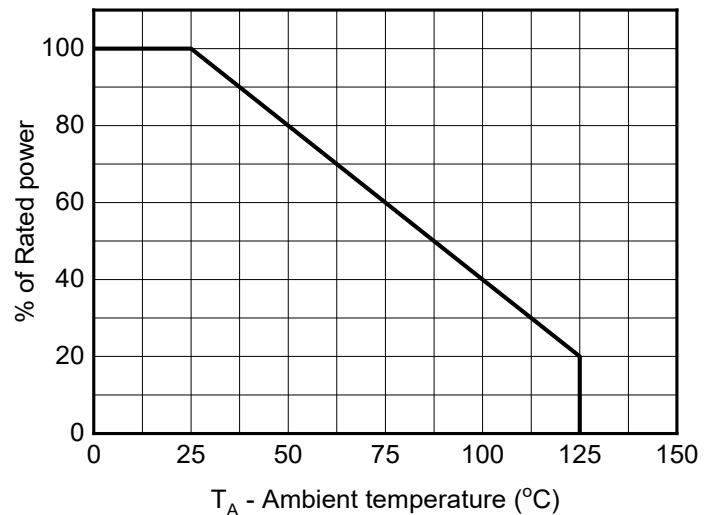
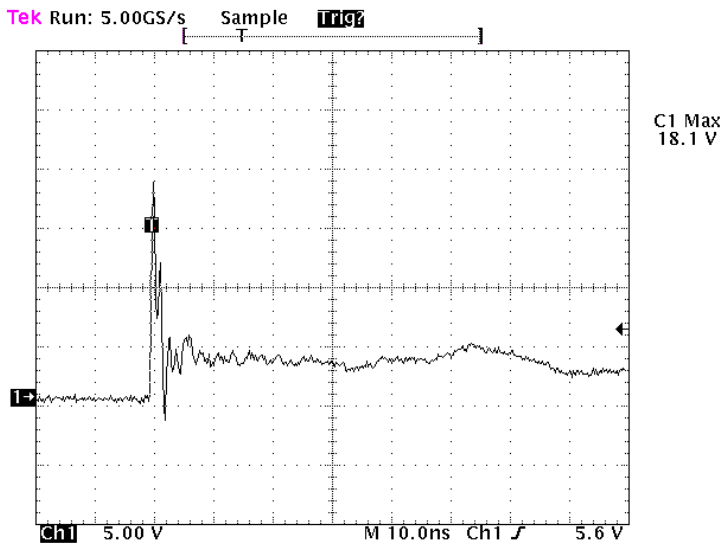
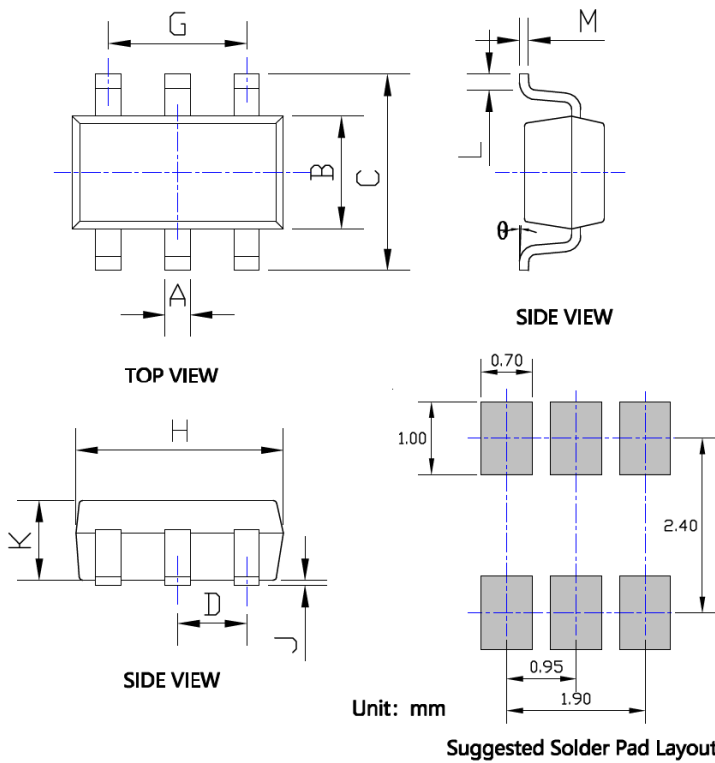


Fig.7 ESD clamping  
(+8kV contact discharge per IEC61000-4-2)



Note: Data is taken With a 10x attenuator

## Outline Dimensions



SYMBOL	DIMENSIONS			
	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
$\theta$	0°	8°	0°	8°

**Note:**

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



## ESDSL0504S2

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