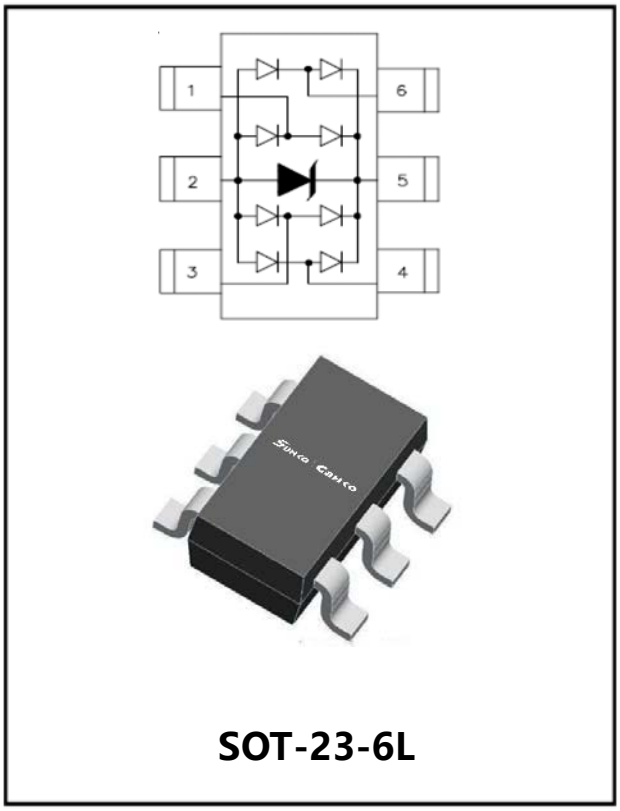
4-Line, Uni-directional, low Capacitance TVS Diode Array



Features

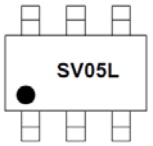
- Stand-off voltage: 5V Max
- Transient protection for each line according to
  IEC61000-4-2(ESD): ±30kV (contact)
  IEC61000-4-5(surge): 16A (8/20μs)
- Ultra-low capacitance: C_J = 3 pF typ
- Low leakage current
- Low clamping voltage
- Compliant

Applications

- USB 2.0 power and data line
- Monitors and flat panel displays
- Set-top box and digital TV
- Digital visual interface (DVI)
- Notebook Computers
- SIM Ports
- 10/100 Ethernet
- IEEE 1394 firewire ports

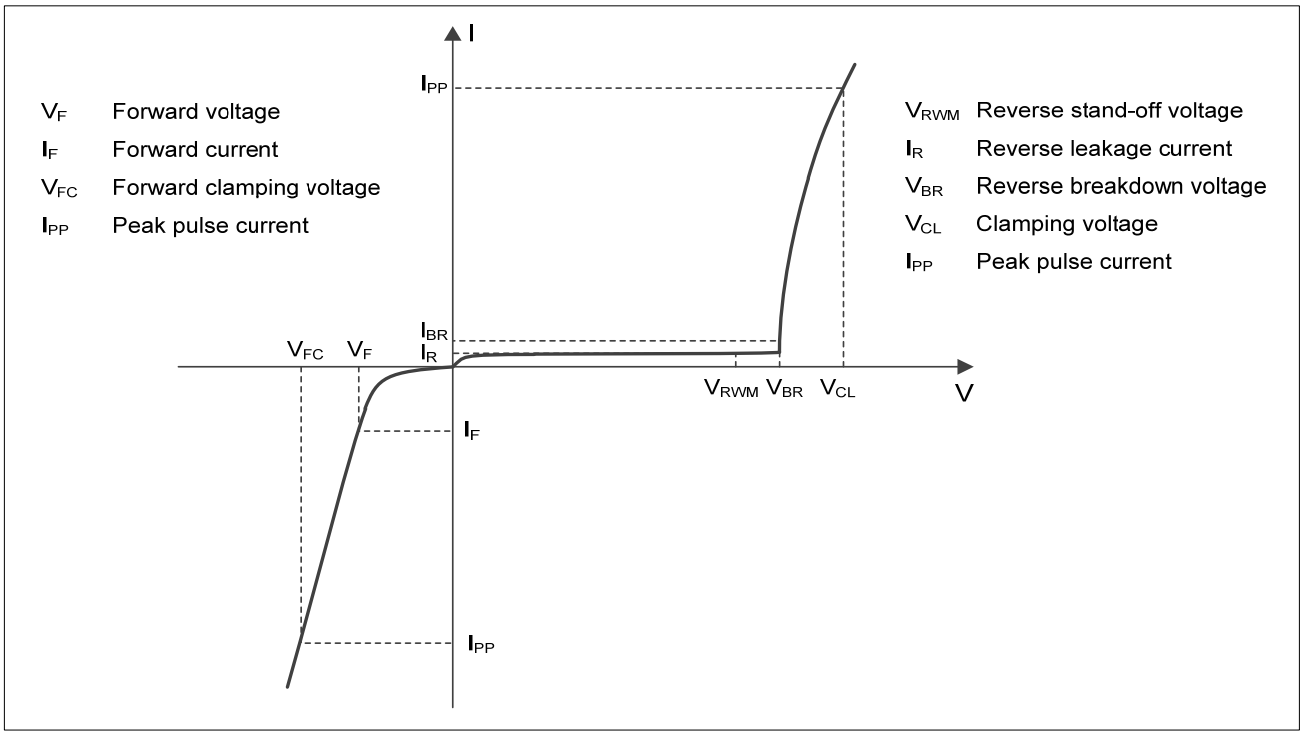
Mechanical Characteristics

- 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



SV05L = Device Marking Code

■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}	240	W
Peak pulse current (t_p = 8/20μs)	I_{PP}	16	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	-55~125	°C
Storage temperature	T_{STG}	-55~150	°C

■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	μA	V_{RWM} =5V, any I/O Pin to ground			0.5
Reverse breakdown voltage	V_{BR}	V	I_{BR} = 1mA, any I/O pin to ground	6.0		
Forward voltage	V_F	V	I_F = 15mA, ground to Pin 1,3,4,5,6			1.2
Clamping voltage 3)	V_{CL}	V	I_{PP} = 1A, t_p = 8/20μs, any I/O pin to ground			12
		V	I_{PP} = 16A, t_p = 8/20μs, any I/O pin to ground			15
Junction capacitance	C_J	pF	V_R = 0V, f = 1MHz, between I/O pins		1.5	
		pF	V_R = 0V, f = 1MHz, any I/O pin to ground		3	5

Notes：

(1). Non-repetitive current pulse, according to IEC61000-4-5
(2). I/O pins are Pin 1, 3, 4 and 6

■Ordering Information (Example)

PREFERED P/N	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SRV05-4L	Approximate 15.85	3000	30000	120000	Tape & reel

■Typical Performance Characteristics (Ta=25°C unless otherwise Specified)

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

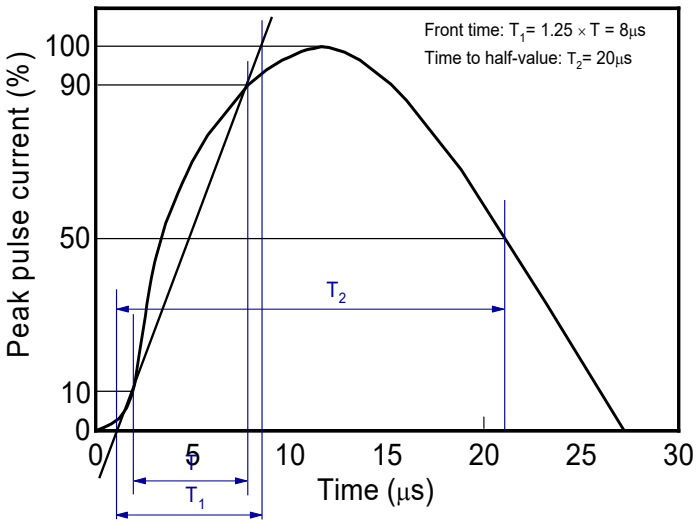


Fig.2 Contact discharge current waveform per IEC61000-4-2

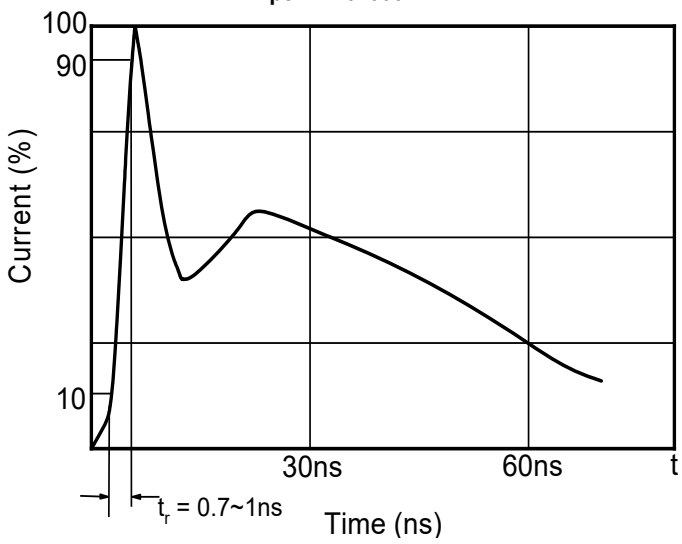


Fig.3 Clamping voltage vs. Peak pulse current

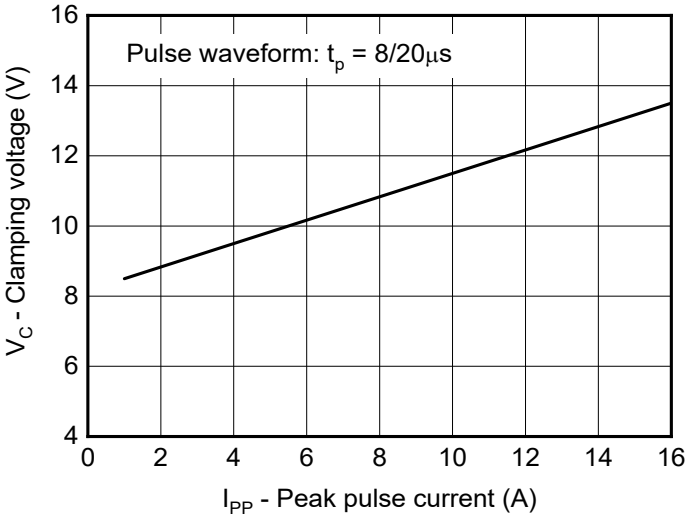


Fig.4 Capacitance vs. Reverse voltage

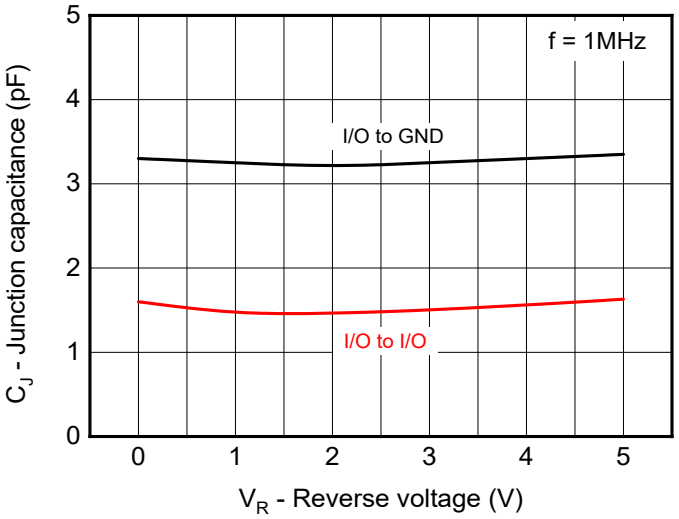


Fig.5 Non-repetitive peak pulse power vs. Pulse time

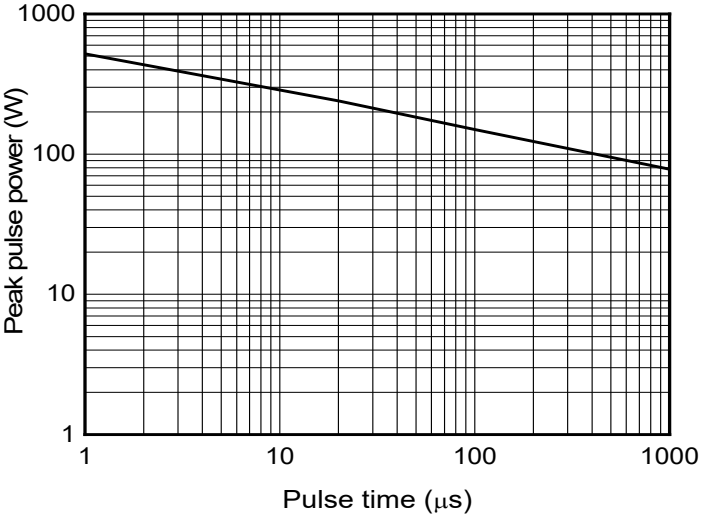


Fig.6 Power derating vs. Ambient temperature

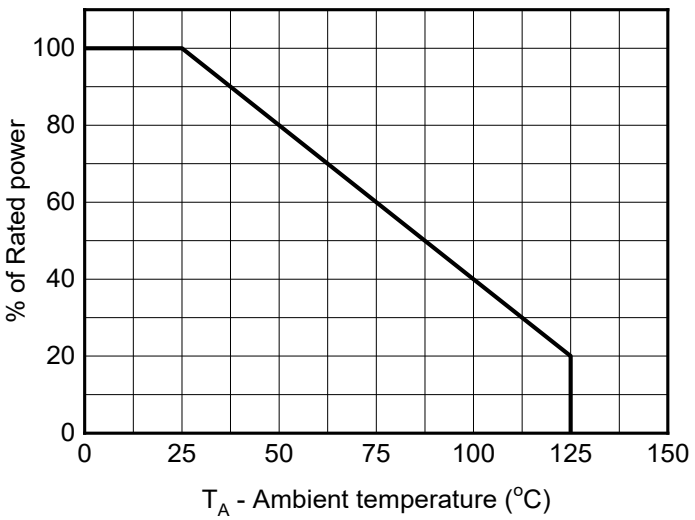


Fig.7 ESD clamping - I/O to GND
(+8kV contact discharge per IEC61000-4-2)

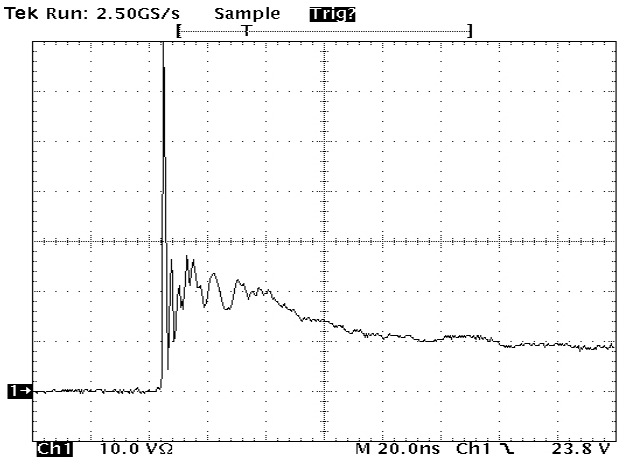
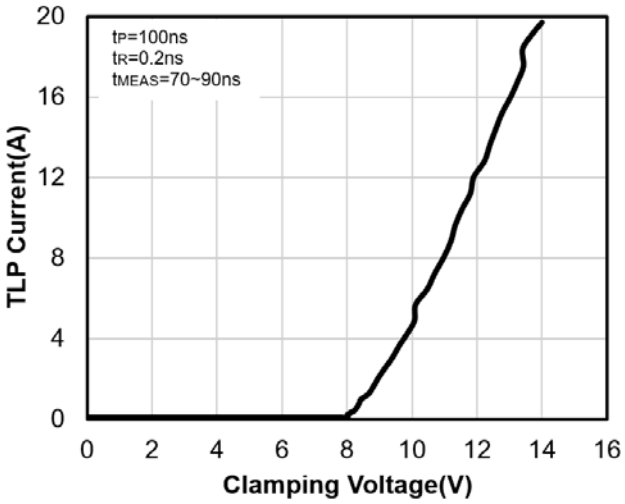
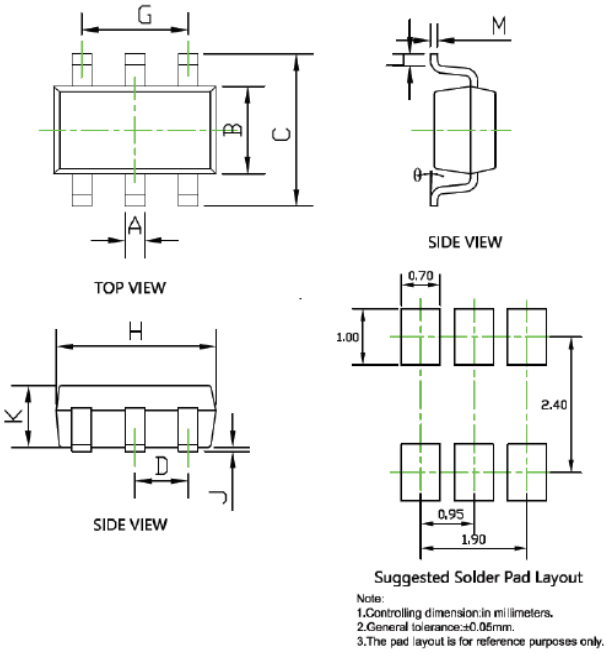


Fig.8 TLP Measurement
(Any I/O pin to ground)



■SOT-23 6L Package Outline Drawing

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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