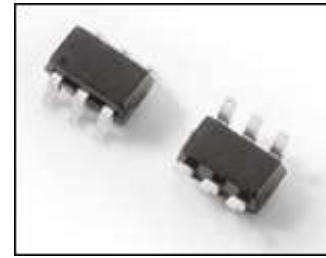




### FEATURES

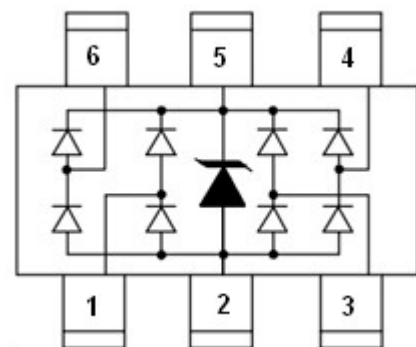
- ◇ 75 watts peak pulse power per line ( $t_P=8/20\mu s$ )
- ◇ Protects four I/O lines
- ◇ Low clamping voltage
- ◇ Low operating voltage
- ◇ Low capacitance
- ◇ RoHS compliant
- ◇ Meets MSL level 3



SOT23-6L

### MAIN APPLICATIONS

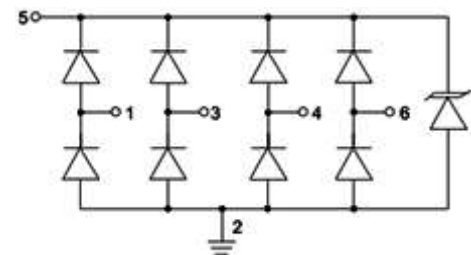
- ◇ USB 2.0&3.0 power and data line protection
- ◇ Digital video interface (DVI)
- ◇ Notebook computers
- ◇ Video graphics cards
- ◇ Monitors and flat panel displays
- ◇ 10/100/1000 ethernet
- ◇ SIM ports
- ◇ ATM interfaces



PIN Configuration

### PROTECTION SOLUTION TO MEET

- ◇ IEC61000-4-2 (ESD)  $\pm 15kV$  (air),  $\pm 15kV$  (contact)
- ◇ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◇ IEC61000-4-5 (Lightning) 5A (8/20 $\mu s$ )



Circuit Diagram

### MECHANICAL CHARACTERISTICS

- ◇ JEDEC SOT23-6L package
- ◇ Molding compound flammability rating: UL 94V-0
- ◇ Quantity per reel: 3, 000pcs
- ◇ Lead finish: lead free
- ◇ Marking code: V05

**ABSOLUTE MAXIMUM RATINGS** (T<sub>A</sub>=25°C, RH=45%-75%, unless otherwise noted)

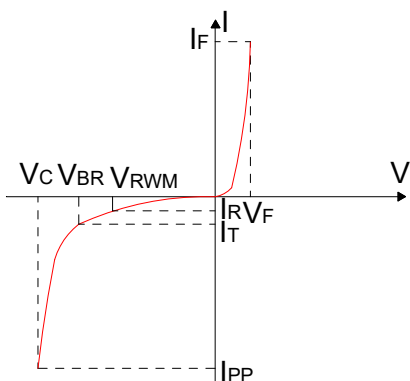
Parameter	Symbol	Value	Unit
Peak pulse power dissipation at 8/20μs waveform	P <sub>PP</sub>	75	W
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	+/- 15	kV
ESD per IEC 61000-4-2 (Contact)		+/- 15	
Lead soldering temperature	T <sub>L</sub>	260 (10 sec.)	°C
Operating junction temperature range	T <sub>J</sub>	-55 to +125	°C
Storage temperature range	T <sub>STG</sub>	-55 to +150	°C

**ELECTRICAL CHARACTERISTICS** (T<sub>A</sub>=25°C)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	V <sub>RWM</sub>				5.0	V
Reverse breakdown voltage	V <sub>BR</sub>	I <sub>T</sub> =1mA	6.0			V
Reverse leakage current	I <sub>R</sub>	V <sub>RWM</sub> =5V			1	μA
Forward voltage	V <sub>F</sub>	I <sub>T</sub> =10mA		0.8	1.0	V
Clamping voltage (I/O pin to Ground)	V <sub>C</sub>	I <sub>PP</sub> =1A, t <sub>P</sub> =8/20μs		9.5	11	V
	V <sub>C</sub>	I <sub>PP</sub> =5A, t <sub>P</sub> =8/20μs		12.5	15	
Junction capacitance	C <sub>J</sub>	V <sub>RWM</sub> =0V, f=1MHz Any I/O pin to Ground		0.65	0.8	pF
		V <sub>RWM</sub> =0V, f=1MHz Between I/O pins		0.3	0.5	

**RATINGS AND V-I CHARACTERISTICS CURVES** (T<sub>A</sub>=25°C, unless otherwise noted)

**FIG.1: V- I curve characteristics (Uni-directional)**



**FIG.2: Pulse waveform (8/20μs)**

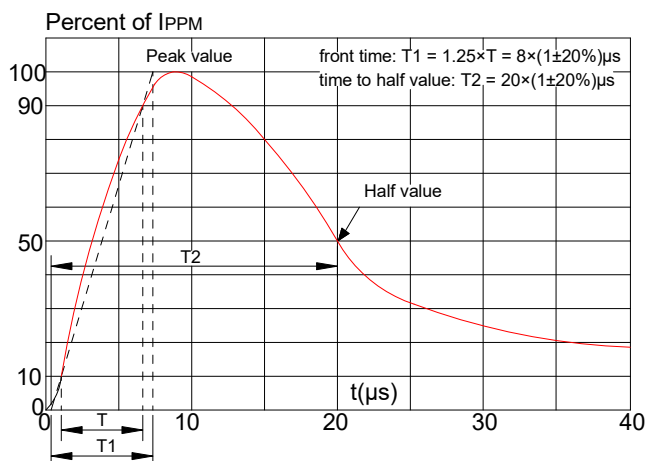


FIG.3: Pulse derating curve

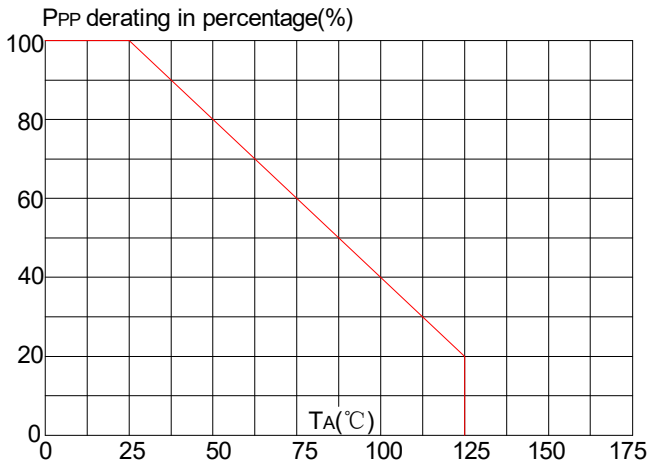
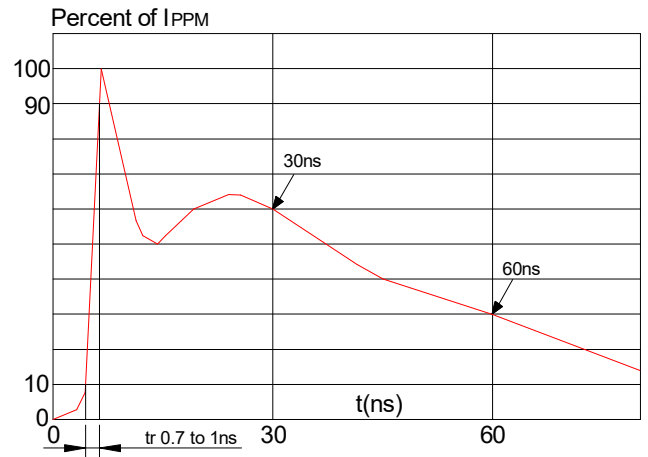
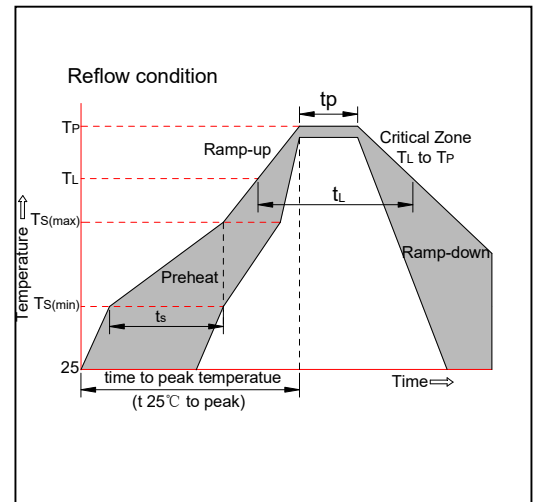


FIG.4: ESD clamping (15kV contact)

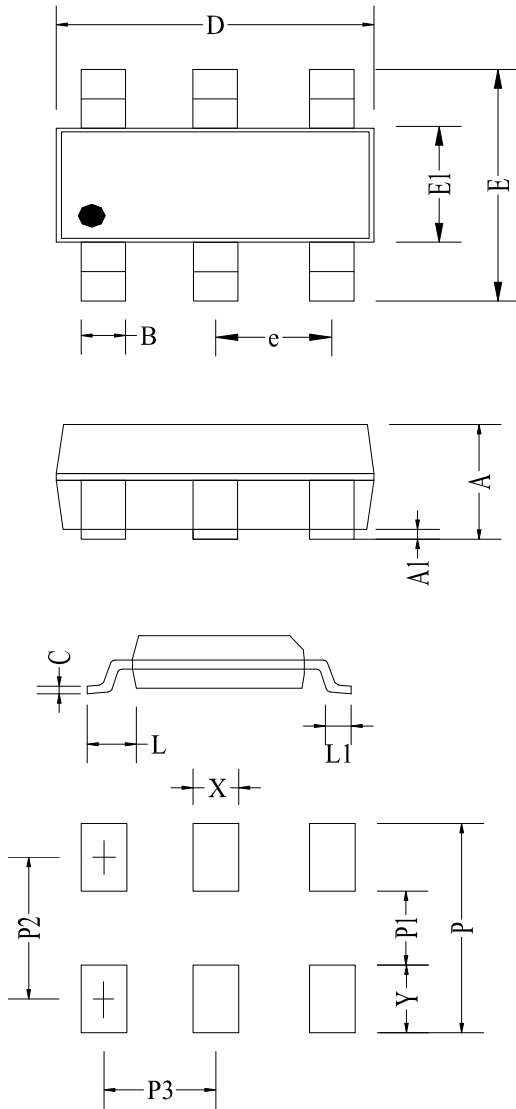


**SOLDERING PARAMETERS**

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max( $T_{s(max)}$ )	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature( $T_L$ )(Liquidus)	+217°C
	-Temperature( $t_L$ )	60-150 secs.
Peak Temp ( $T_p$ )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp ( $t_p$ )		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp ( $T_p$ )		8 min. Max
Do not exceed		+260°C



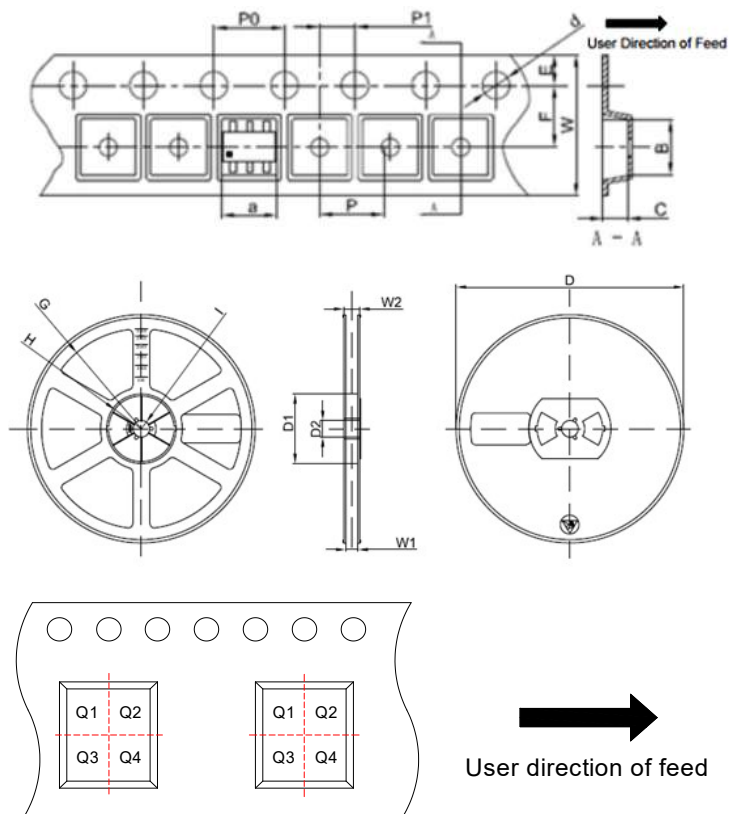
**PACKAGE MECHANICAL DATA**



**Land Pattern**

Symbol	Millimeter			Inches		
	Min	Typ	Max	Min	Typ	Max
A	0.90	1.18	1.45	0.035	0.046	0.057
A1	0.02	0.08	0.14	0.001	0.003	0.006
B	0.35	0.40	0.50	0.014	0.016	0.020
C	0.08	0.15	0.20	0.003	0.006	0.008
D	2.92	3.00	3.02	0.115	0.118	0.119
e	0.69	0.95	1.02	0.027	0.037	0.040
E1	1.50	1.60	1.75	0.059	0.063	0.069
E	2.80BSC			0.110BSC		
L1	0.35	0.45	0.55	0.014	0.018	0.022
L	0.6			0.024		
X	0.6			0.024		
Y	1.1			0.043		
P	3.6			0.142		
P1	1.4			0.055		
P2	2.5			0.098		
P3	0.95			0.037		

TAPE AND REEL SPECIFICATION-SOT23-6L



Pin 1 quadrant:Q3

Packaging Description:

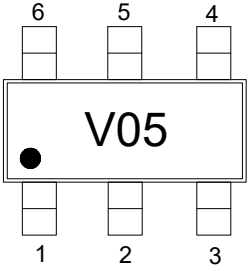
SOT23-6L parts are shipped in tape. The carrier tape is made from a dissipative(carbon filled) polycarbonate resin. The cover tape is a multilayer film(heat activated adhesive in nature)primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000units per 7" or 17.8cm diameter reel. The reels are clear in color and made of polystyrene plastic(anti-static coated).

Symbol	Millimeter	Inches
	Typ.	Typ.
a	3.17	0.125
B	3.23	0.127
C	1.37	0.054
d	Φ1.55	Φ0.061
E	1.75	0.069
F	3.50	0.138
P0	4.00	0.157
P	4.00	0.157
P1	2.00	0.079
W	8.00	0.315
D	Φ180	Φ7.087
D1	60.00	2.632
D2	13.00	0.512
G	R78.00	R3.071
H	R25.60	R1.008
I	R6.50	R0.256
W1	9.50	0.374
W2	13.10	0.516

ORDERING INFORMATION

OUTLINE	PACKAGE TYPE	QUANTITY REEL	DESCRIPTION
TAPING	SOT23-6L	3,000	7 inch reel pack

**MARKING CODE**

Part Number	Marking Code
SRV05-4A	


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