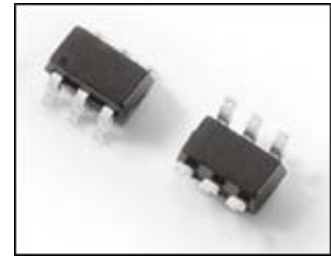




FEATURES:

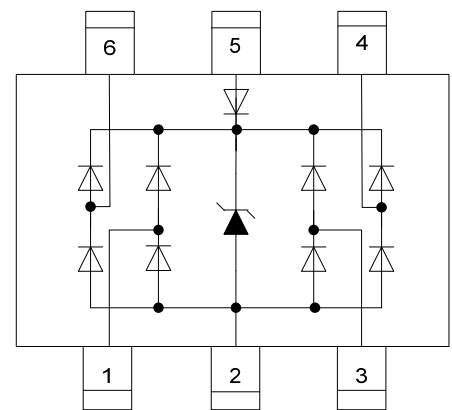
- ◇ Protects four I/O lines
- ◇ Low clamping voltage
- ◇ Low operating voltage
- ◇ Low capacitance
- ◇ RoHS compliant



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



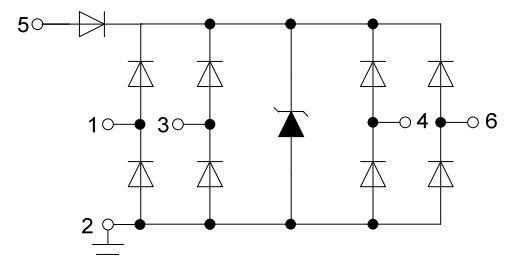
PIN Configuration

PROTECTION SOLUTION TO MEET

- ◇ IEC61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- ◇ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◇ IEC61000-4-5 (Lightning) 8A (8/20 μs)

MECHANICAL CHARACTERISTICS

- ◇ JEDEC SOT23-6L package
- ◇ Molding compound flammability rating: UL 94V-0
- ◇ Quantity per reel: 3,000pcs
- ◇ Lead finish: lead free
- ◇ Marking code: U05



Circuit Diagram

ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20 μs waveform	P_{PP}	100	W
Peak pulse current on 8/20 μs waveform	I_{PP}	8	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	+/- 30 +/- 30	kV
Lead soldering temperature	T_L	260 (10 sec.)	$^{\circ}\text{C}$
Operating junction temperature range	T_J	-55 to +125	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	V_{RWM}				5.0	V
Reverse breakdown voltage (I/O pin to Ground)	V_{BR}	$I_T=1\text{mA}$	6.0	8.0	10.0	V
Reverse leakage current	I_R	$V_{RWM}=5\text{V}$		0.01	0.1	μA
Forward voltage	V_F	$I_T=10\text{mA}$		0.8	1.2	V
Clamping voltage (I/O pin to Ground)	V_C	$I_{PP}=1\text{A}$, $t_P=8/20\mu\text{s}$		9.5	11	V
	V_C	$I_{PP}=8\text{A}$, $t_P=8/20\mu\text{s}$		11	13	V
Junction capacitance	C_J	$V_{RWM}=0\text{V}$, $f=1\text{MHz}$ Any I/O pin to Ground		1.2	1.5	pF
		$V_{RWM}=0\text{V}$, $f=1\text{MHz}$ Between I/O pins		0.65	0.75	

RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

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

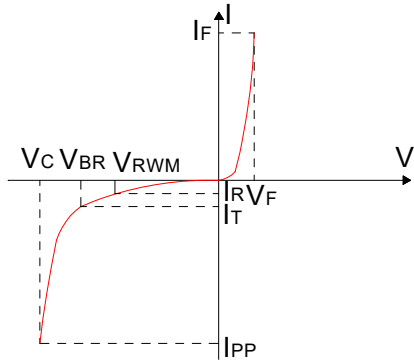


FIG.2: Pulse waveform (8/20 μs)

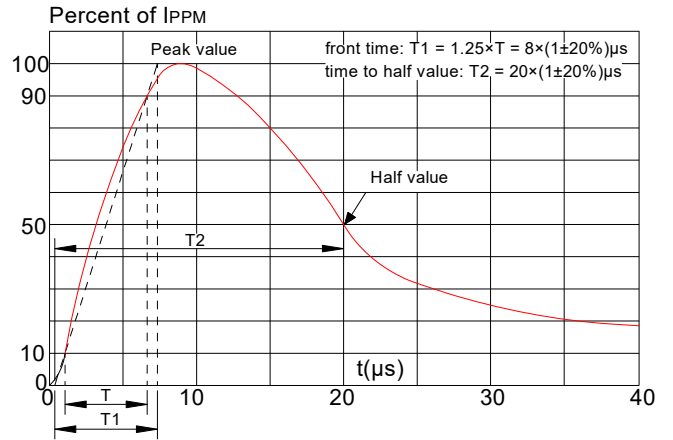


FIG.3: Pulse derating curve

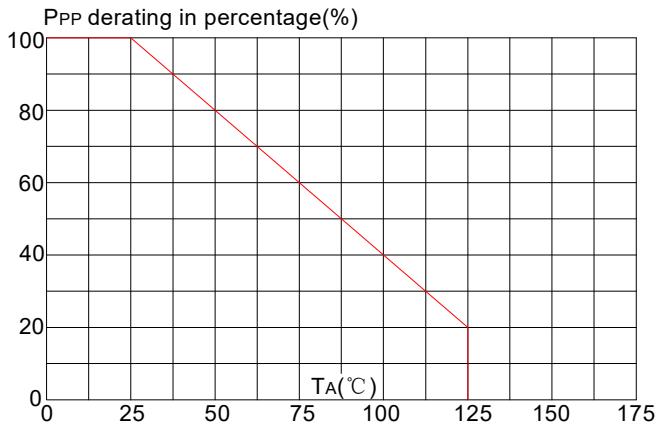
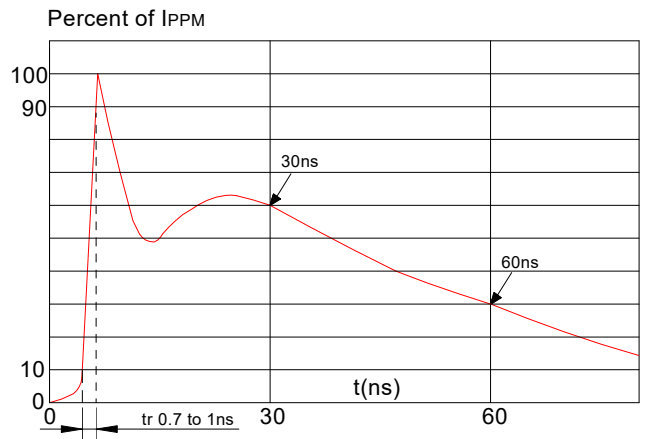
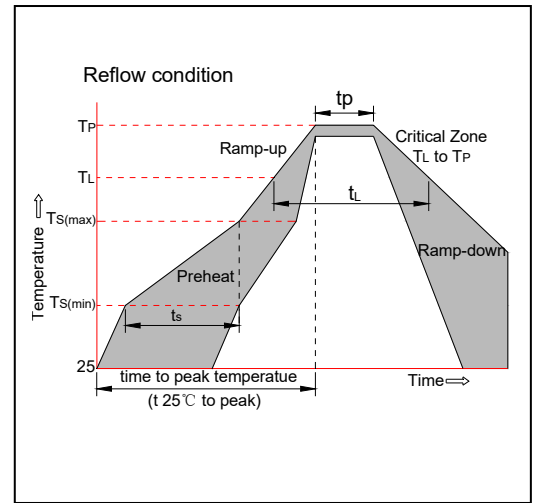


FIG.4: ESD clamping (30kV contact)

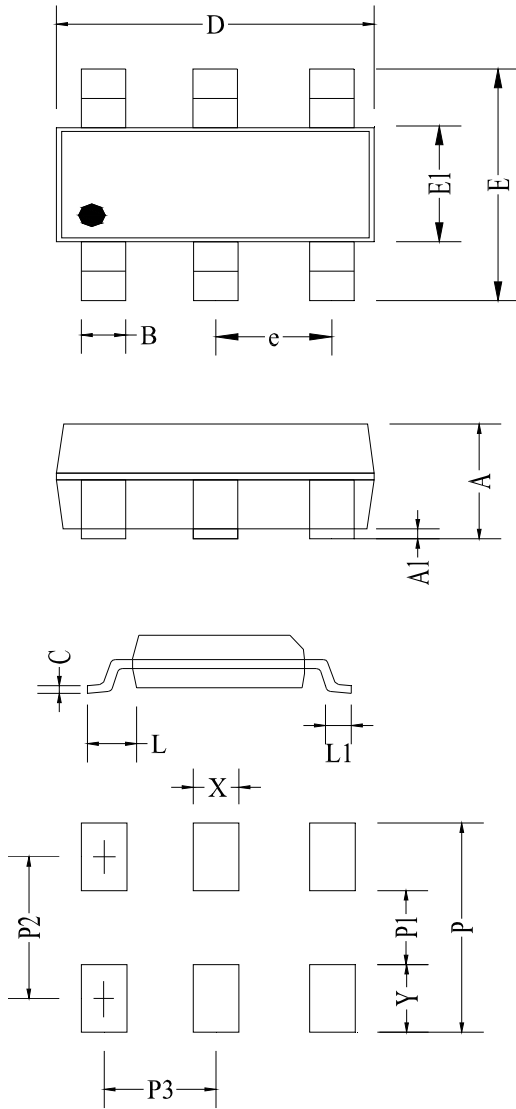


SOLDERING PARAMETERS

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) (t_s)	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



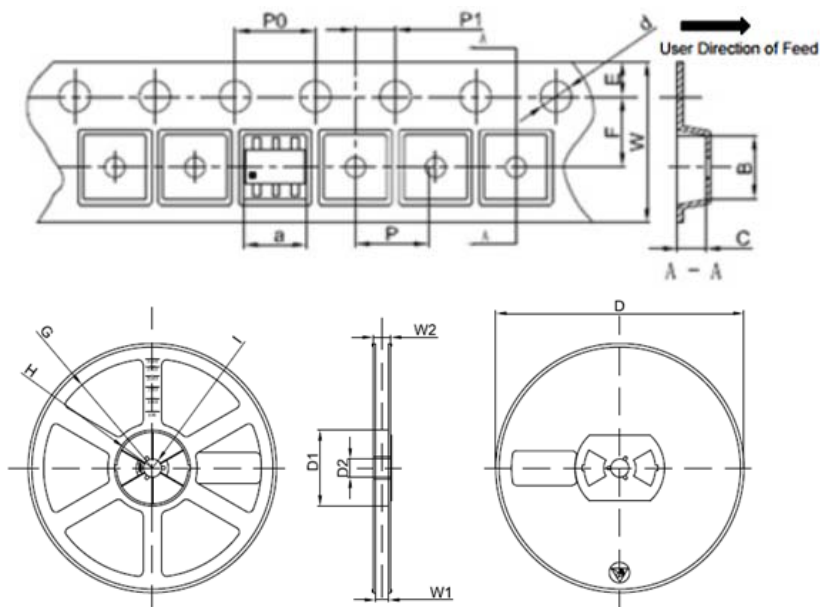
PACKAGE MECHANICAL DATA



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



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

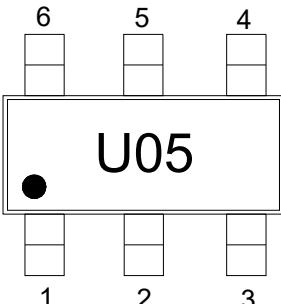
Packaging Description:

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 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and made of polystyrene plastic(anti-static coated).

ORDERING INFORMATION

PART No.	PACKAGE TYPE	QUANTITY REEL	DESCRIPTION
SRV05-4B	SOT23-6L	3,000	7 inch reel pack

MARKING CODE

Part Number	Marking Code
SRV05-4B	

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