

Features

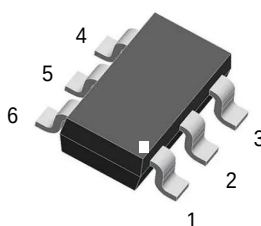
- Ultra low capacitance: 0.6pF typical (I/O-GND)
- Ultra low leakage: nA level
- Low operating voltage: 5.0V
- Up to 4 data lines and one power line protects
- Low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air : $\pm 20\text{kV}$; discharge: $\pm 15\text{kV}$
 - IEC61000-4-5 (Lightning) 4.5A (8/20 μs)
- SOT23-6 Package
- RoHS Compliant

Applications

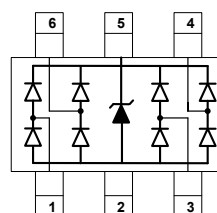
- Monitors and flat panel displays
- Set-top box and Digital TV
- Video graphics cards
- Digital Video Interface (DVI)
- Notebook Computers
- PCI Express and Serial SATA Ports



SOT 23-6L



Circuit Diagram



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

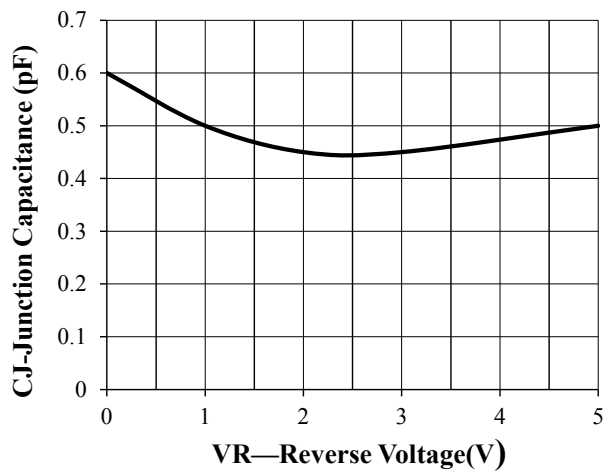
Absolute Maximum Ratings (@ $T_a = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs , I/O-GND)	Ppk	60	W
Peak Pulse Power (8/20 μs , Vcc-GND)	Ppk	300	W
Peak Pulse Current (8/20 μs , I/O-GND)	IPP	4.5	A
Peak Pulse Current (8/20 μs , Vcc-GND)	IPP	17	A
ESD per IEC 61000-4-2 (Air)	$V_{\text{ESD}, \text{VDD}}$	± 20	kV
ESD per IEC 61000-4-2 (Contact)	$V_{\text{ESD}, \text{I/O}}$	± 15	
Operating Temperature Range	TJ	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^\circ\text{C}$

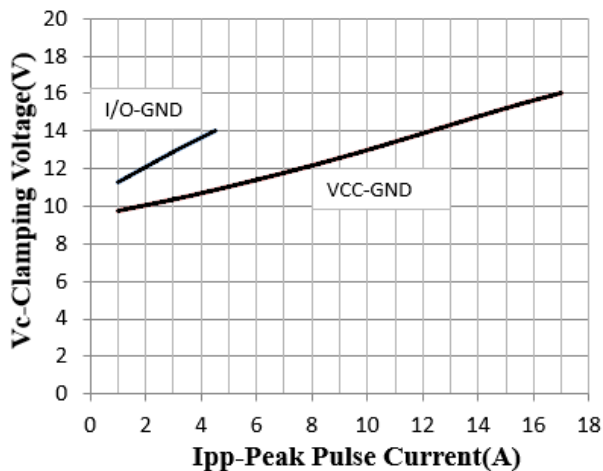
Electrical Characteristics ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	Pin 5 to GND, I/O-GND			5.0	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$ (Pin 5 to GND, I/O-GND)	6.0	7.5	8.5	V
Reverse Leakage Current	I_R	$V_{RWM} = 5.0\text{V}$			0.5	μA
Forward Breakdown Voltage	V_F	$I_F = 15\text{mA}$, GND to Pin 5/IO		0.8	1.0	V
Clamping Voltage	V_C	$I_{PP} = 4.5\text{A}$ (8 x 20 μs pulse, I/O to GND)		14.0	15.0	V
Clamping Voltage	V_C	$I_{PP} = 17\text{A}$ (8 x 20 μs pulse, Pin 5 to GND)		16.0	18.0	V
Junction Capacitance	C_J	$V_{pin5} = 5\text{V}$, I/O=0V, $f = 1\text{MHz}$, I/O-GND		0.6	0.7	pF
Junction Capacitance	C_J	$V_{pin5} = 5\text{V}$, I/O=0V, $f = 1\text{MHz}$, I/O-I/O pins		0.3	0.4	pF

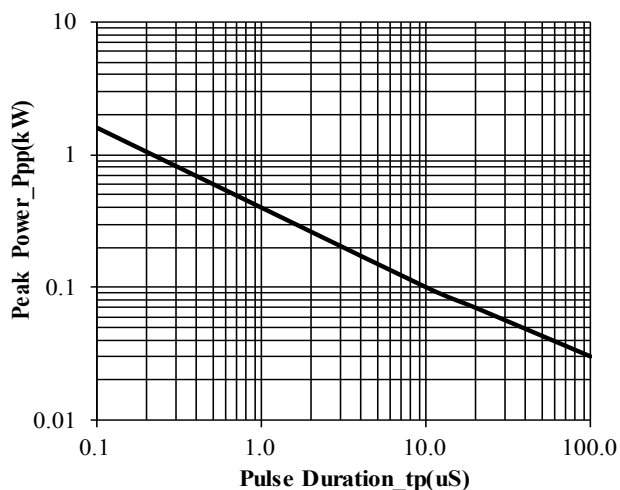
RATING AND CHARACTERISTIC CURVES



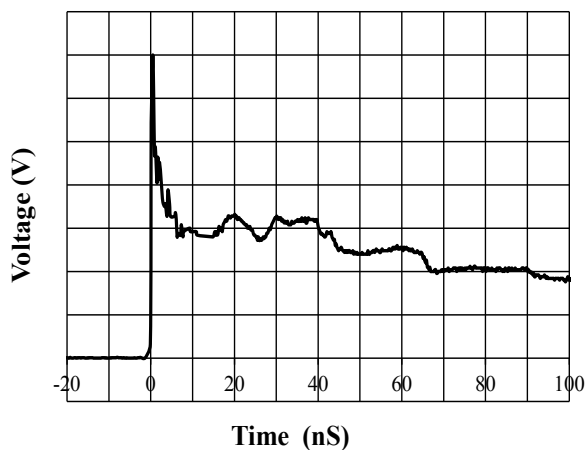
Junction Capacitance vs. Reverse Voltage



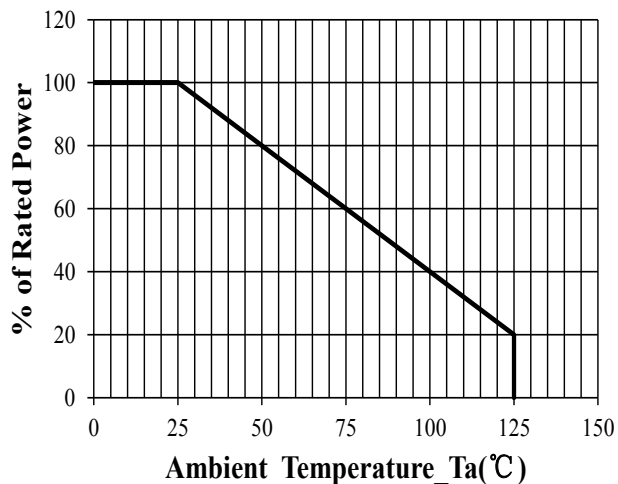
Clamping Voltage vs. Peak Pulse Current



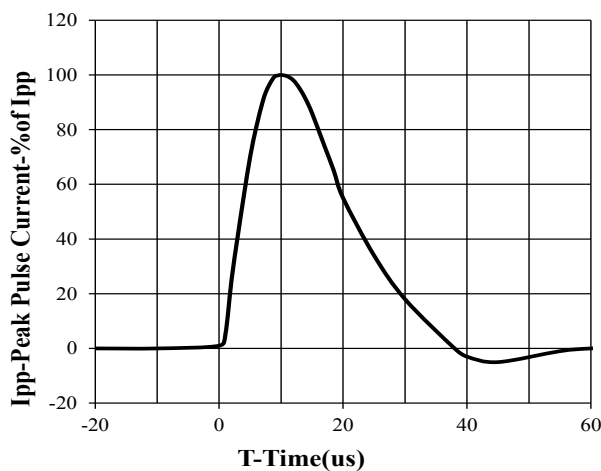
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



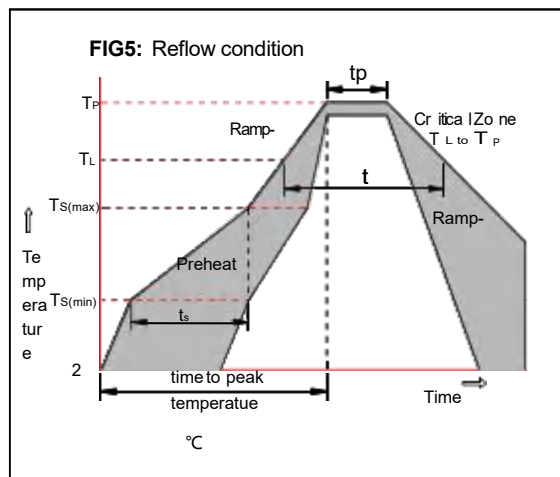
Power Derating Curve



8 X 20us Pulse Waveform

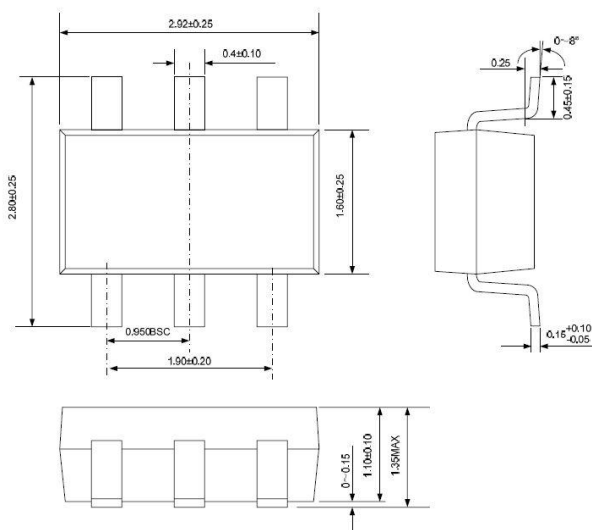
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
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 (Liquid us 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)(Liquid us)	+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)		30 secs. Max
Ramp-down Rate		6 °C/sec. Max
Time 25 °C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260 °C



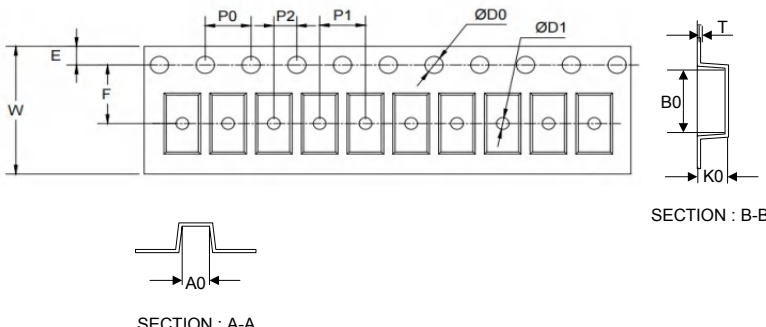
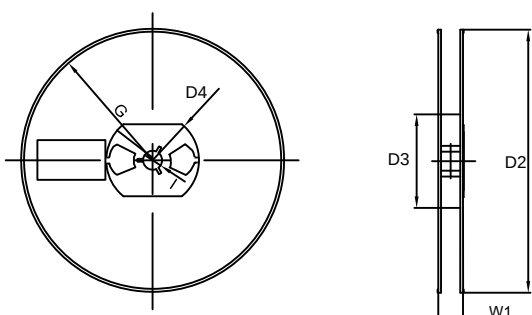
Package Dimensions & Suggested Pad Layout

SOT23-6L



Dimensions in millimeters

Tape & reel specification

Tape		Symbol	Dimension (mm)
		P0	4.00±0.20
		P1	4.00±0.20
		P2	2.00±0.20
		D0	1.55±0.20
		D1	1.20±0.20
		E	1.55±0.20
		F	3.60±0.20
		W	8.00±0.20
		A0	3.80±0.20
		B0	3.50±0.20
		K0	1.55±0.20
		T	0.25±0.15
		D2	178.0±5.0
		D3	55Min.
		D4	R24.0±3.0
7" Reel		G	R82.0±3.0
		I	13.0±2.0
		W1	11.0±3.0
		Quantity: 3000PCS	