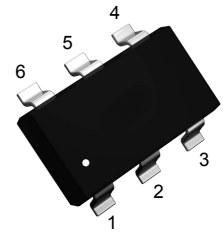
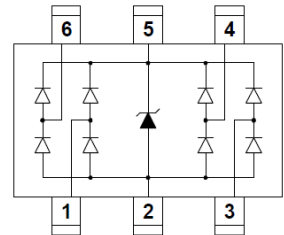


Features

- Ultra low capacitance: 0.6pF typical (I/O to GND)
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Up to four data lines and one power line protects
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 25\text{kV}$
 - Contact discharge: $\pm 25\text{kV}$
 - IEC61000-4-5 (Lightning) 6A (8/20 μs)



SOT-23-6L



Schematic Diagram

Applications

- USB 2.0/USB 3.2 power and data lines protection
- Digital visual interface (DVI)
- Monitors and flat panel displays
- Video graphic cards
- Notebook and PC computers

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs), V_{CC} Pin to Ground	P_{PK}	240	W
Peak Pulse Power (8/20 μs), Any I/O Pin to Ground	P_{PK}	90	W
Peak Pulse Current (8/20 μs), V_{CC} Pin to Ground	I_{PP}	15	A
Peak Pulse Current (8/20 μs), Any I/O Pin to Ground	I_{PP}	6	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 25	kV
ESD per IEC 61000-4-2 (Contact)		± 25	
Operating Temperature Range	T_J	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	Any I/O pin to ground	-	-	5	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$, any I/O pin to ground	6	-	-	V
Reverse Leakage Current	I_R	$V_{RWM}=5\text{V}$, any I/O pin to ground	-	-	0.5	μA
Clamping Voltage	V_C	$I_{PP}=6\text{A}$ (8 x 20 μs pulse), any I/O pin to ground	-	13	15	V
		$I_{PP}=15\text{A}$ (8 x 20 μs pulse), V_{CC} pin to ground	-	14	-	
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$, between I/O pins	-	0.3	-	pF
		$V_R=0\text{V}$, $f=1\text{MHz}$, any I/O pin to ground	-	0.6	-	

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

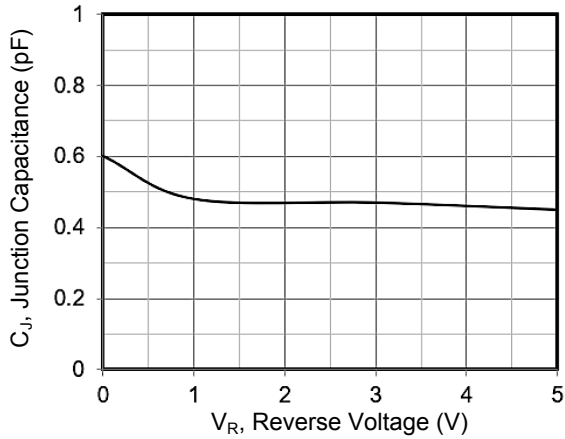


Figure 1. Junction Capacitance vs. Reverse Voltage

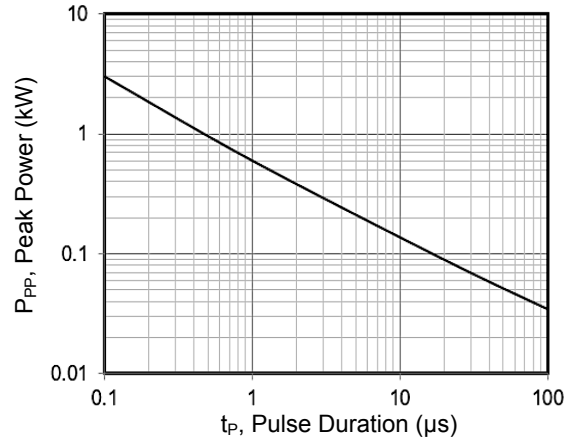


Figure 2. Peak Pulse Power vs. Pulse Time

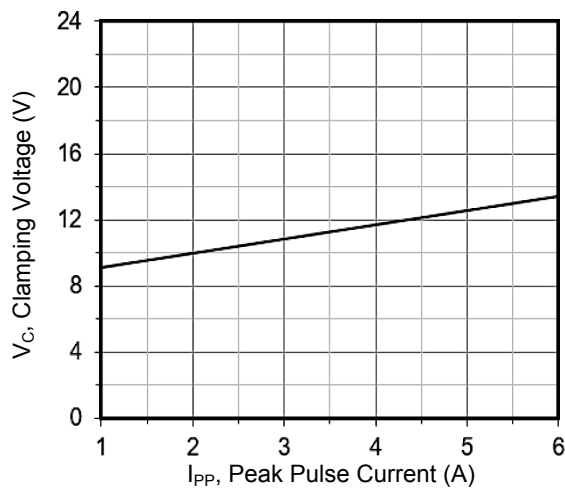


Figure 3. Clamping Voltage vs. Peak Pulse Current
($t_p=8/20\mu\text{s}$)

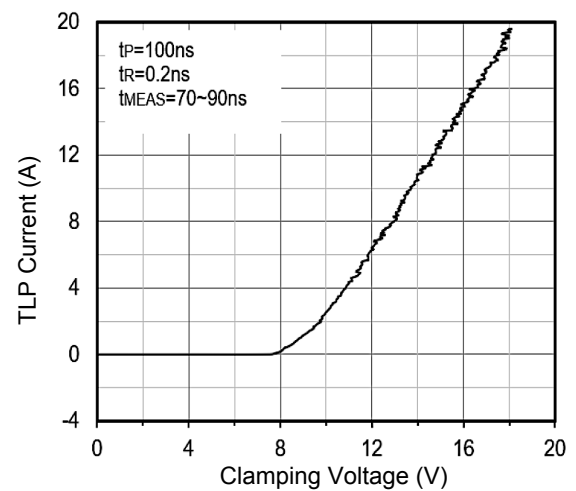


Figure 4. TLP Measurement

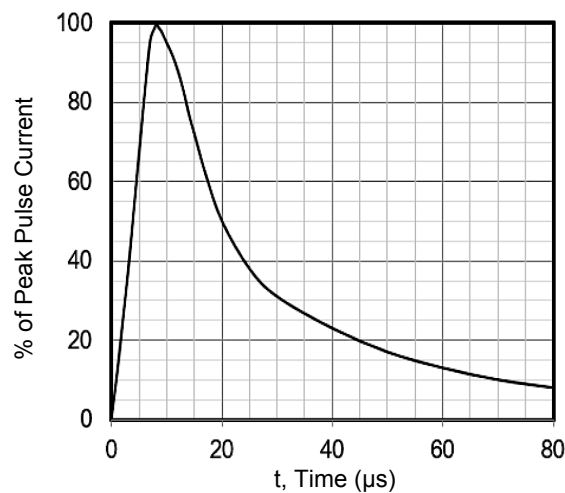


Figure 5. 8 x 20 μs Pulse Waveform

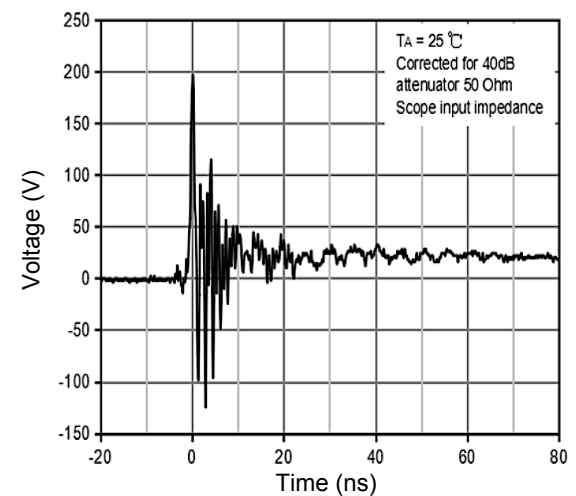
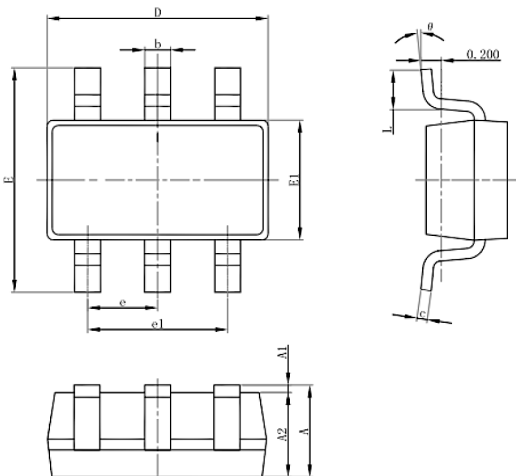


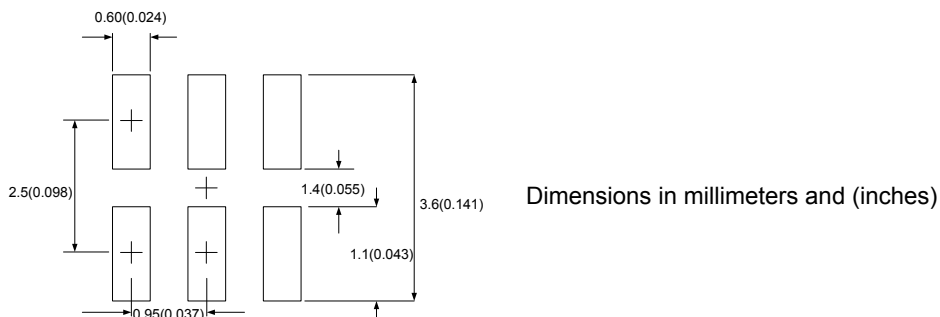
Figure 6. ESD Clamping Voltage
8kV Contact per IEC 61000-4-2

Package Outline Dimensions (SOT-23-6L)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950 (BSC)		0.037 (BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

Recommended Pad Layout



Order Information

Device	Package	Marking	Packaging	SPQ
GSER5U003	SOT-23-6L	54SC	Tape & Reel	3,000 Pcs / Reel

For more information, please contact us at: inquiry@goodarksemi.com