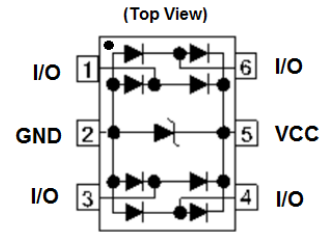


Features

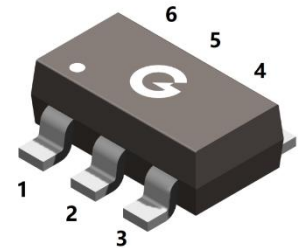
- ESD / transient protection of high speed data lines
 - IEC 61000-4-2 (ESD): ± 20 kV (air), ± 15 kV (contact)
- Working voltage: $V_{RWM} = 5V$
- Array of surge rated diodes with internal TVS Diode
- Protects up to four I/O lines & power line
- Low capacitance ($< 1.0pF$) for high-speed interfaces
- No insertion loss to 2.0GHz
- Low leakage current and clamping voltage
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards

HF



Applications

- USB 2.0/USB OTG
- Monitors and Flat Panel Displays
- Displays Digital Visual Interface (DVI)
- High-Definition Multimedia Interface (HDMI)
- Gigabit Ethernet
- SIM Ports
- IEEE 1394 Fire wire Ports



Mechanical Data

- Case: SOT-23-6L
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

SOT-23-6L

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
TSRV05	SOT-23-6L	3000 pcs / Tape & Reel	V05

Maximum Ratings (@ $T_A = 25^\circ C$ unless otherwise specified)

Parameter	Symbol	Value	Unit
IEC 61000-4-2; ESD (Air)	V_{ESD-A}	± 20	kV
IEC 61000-4-2; ESD (Contact)	V_{ESD-C}	± 15	kV
Peak Pulse Power ($t_p = 8/20\mu s$)	P_{PP}	75	W
Peak Pulse Current ($t_p = 8/20\mu s$)	I_{PP}	5	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	140	°C/W
Thermal Resistance Junction-to-Case *1	$R_{\theta JC}$	80	°C/W
Thermal Resistance Junction-to-Lead *1	$R_{\theta JL}$	90	°C/W
Operating Temperature	T_J	-55 ~ +150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Reverse Stand-off Voltage	V_{RWM}		-	-	5	V
Reverse Breakdown Voltage	$V_{(BR)}$	$I_T = 1\text{mA}$	6	-	-	V
Reverse Leakage Current	I_R	$V_{RWM} = 5\text{V}$	-	-	1	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (I/O to GND, $t_p = 8/20\mu\text{s}$)	-	-	10	V
		$I_{PP} = 5\text{A}$ (I/O to GND, $t_p = 8/20\mu\text{s}$)	-	-	15	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$ (I/O to I/O)	-	-	0.5	pF
		$V_R = 0\text{V}$, $f = 1\text{MHz}$ (I/O to GND)	-	-	1	pF

Note 1: The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

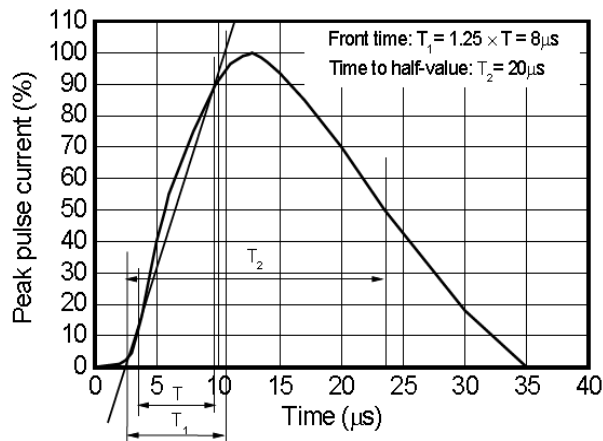


Fig 1 8/20μs waveform per IEC61000-4-5

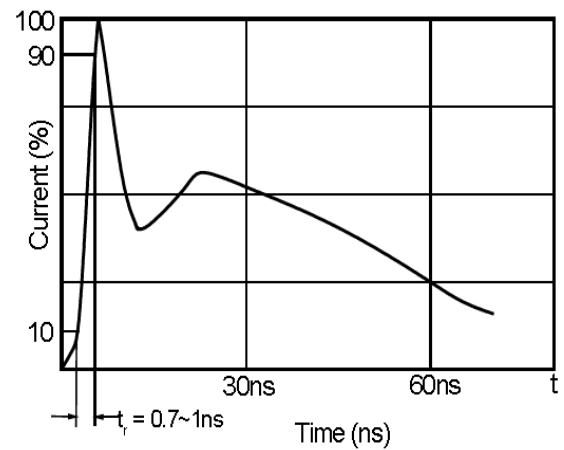


Fig 2 ESD pulse waveform according to IEC61000-4-2

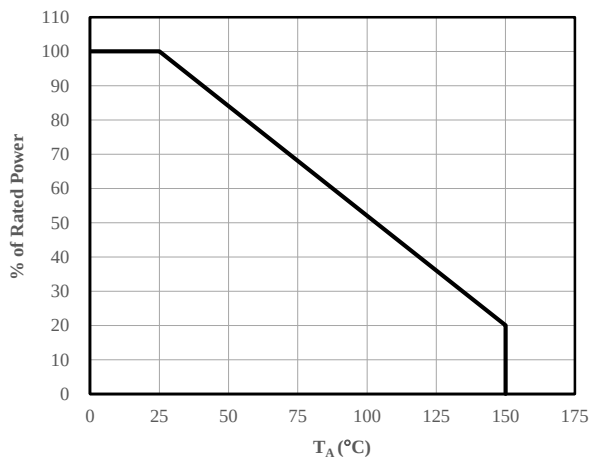


Fig 3 Power Derating Curve

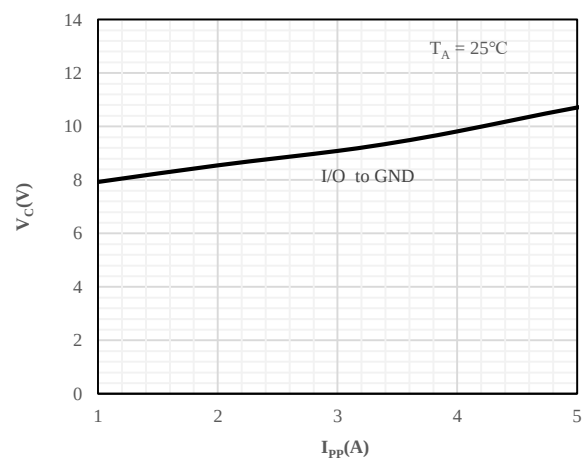


Fig 4 Clamping Voltage vs. Peak Pulse Current

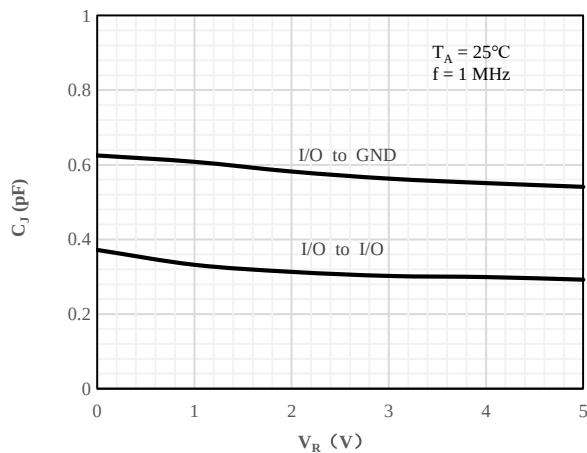
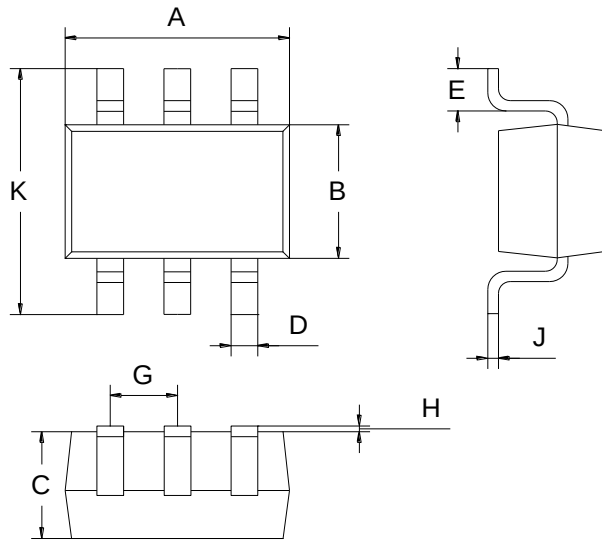


Fig 5 Junction Capacitance vs. Reverse Voltage

Package Outline Dimensions (Unit: mm)



SOT-23-6L		
Dimension	Min.	Max.
A	2.80	3.00
B	1.50	1.70
C	1.00	1.20
D	0.35	0.45
E	0.35	0.55
G	0.90	1.00
H	0.02	0.10
J	0.10	0.20
K	2.60	3.00

Mounting Pad Layout (Unit: mm)

SOT-23-6L

