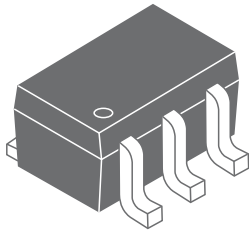
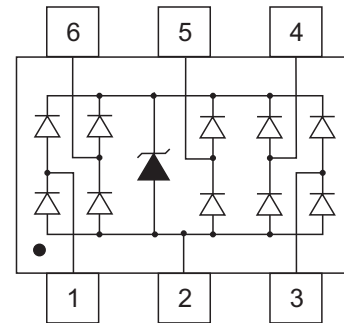


# Electro-Static Discharge TUSD05H5U Low Capacitance TVS Diode

## SOT-23-6L



## Pin Configuration



## Features

- 100 Watts Peak Pulse Power per Line ( $t_p=8/20 \mu s$ )
- Protects five I/O lines
- Low clamping voltage
- Working voltages : 5V
- Low leakage current

## IEC Compatibility

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

## Applications

- USB 2.0 Power and Data Line Protection
- Video Graphics Cards
- Monitors and Flat Panel Displays
- Digit Video Interface (DVI)
- 10/100/1000 Ethernet
- Notebook Computers
- SIM Ports
- ATM Interfaces

## Mechanical Characteristics

- JEDEC SOT-23-6L Package
- Molding Compound Flammability Rating:UL 94V-O
- Weight 16 Milligrams(Approximate)
- Quantity Per Reel:3000pcs
- Reel Size:7 inch
- Lead Finish:Lead Free

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

Parameter	Symbol	Value	Units
Peak Pulse Power( $t_p=8/20\mu\text{s}$ )	$P_{PP}$	100	Watts
Lead Soldering Temperature	$T_L$	260(10 sec.)	$^{\circ}\text{C}$
Operating Temperature Range	$T_J$	-55~150	$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-55~150	$^{\circ}\text{C}$

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

TUSD05H5U(Marking:V05)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	$V_{RWM}$	Pin5 to 2			5.5	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1\text{mA}$ , Pin 5 to 2	6			V
Reverse Leakage Current	$I_R$	Pin 1,3,4,6 to GND			1	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP}=1\text{A}$ , $t_p=8/20\mu\text{s}$			12	V
Peak Pulse Current	$I_{PP}$	$t_p=8/20\mu\text{s}$			5	A
Junction Capacitance	$C_{I/O-GND}$	Pin capacitance to GND, $V_{DC}=0\text{V}$ , $f=1\text{MHz}$			0.9	pF
Junction Capacitance	$C_{I/O-I/O}$	Pin capacitance to PIN $V_{DC}=0\text{V}$ , $f=1\text{MHz}$			0.5	pF

Ratings and Characteristic Curves

Fig.1 Non-Repetitive Pulse Power vs.Pulse Time

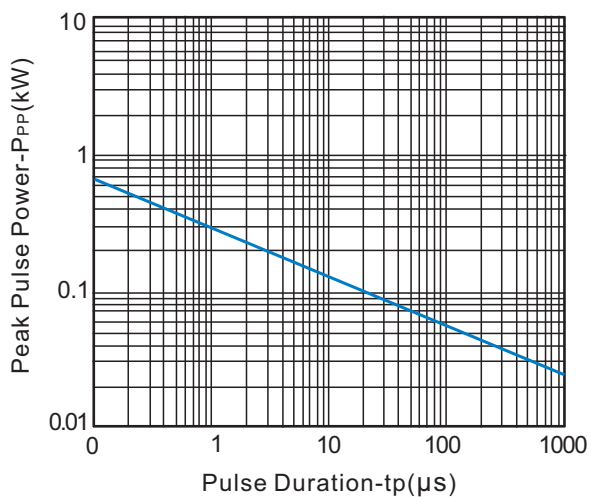
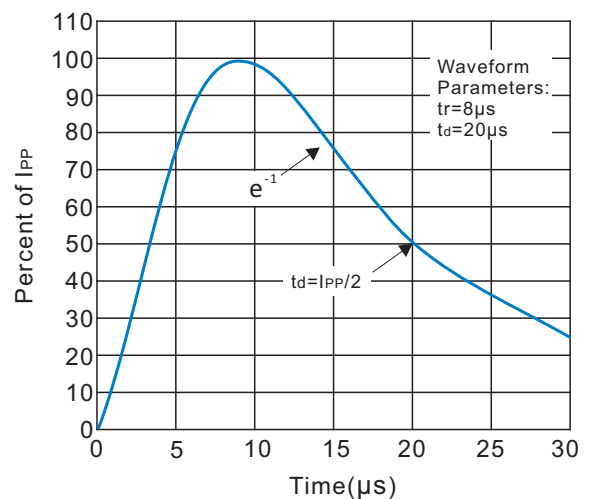


Fig.2 Pulse Waveform



## Ratings and Characteristic Curves

Fig.3 Power Derating Curve

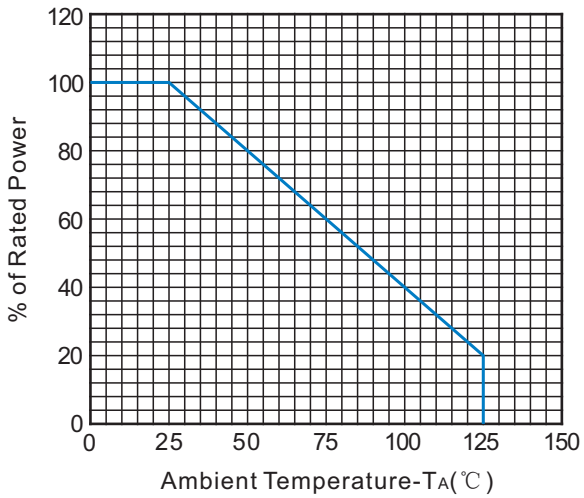
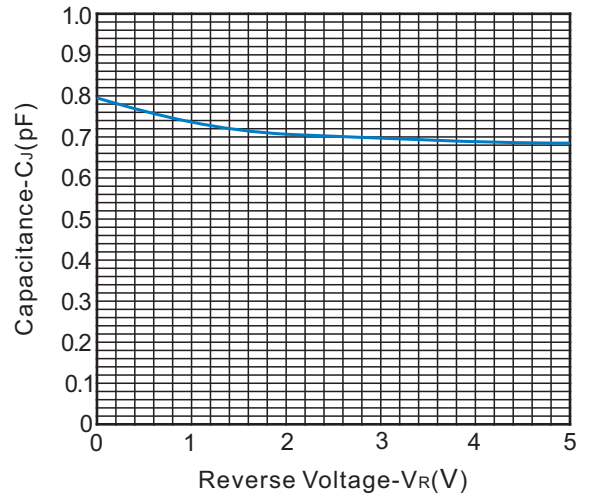
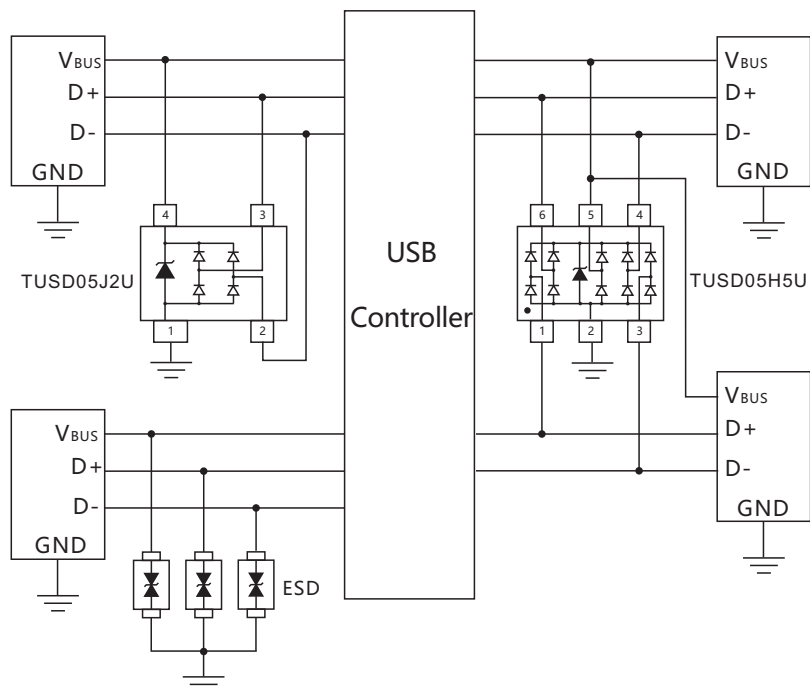


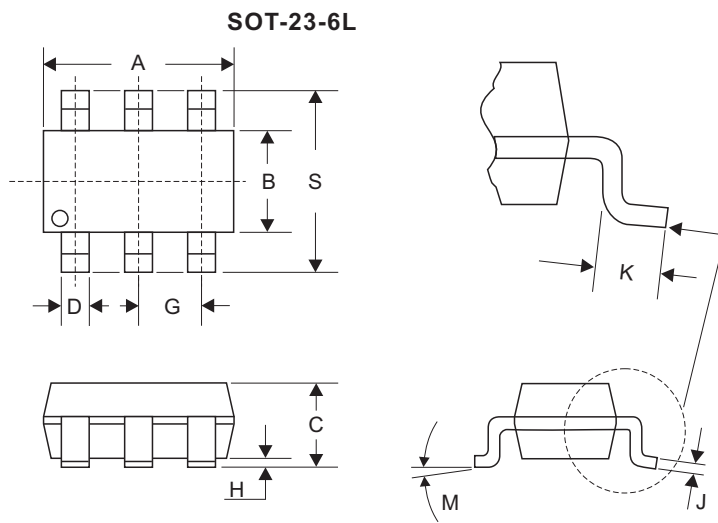
Fig.4 Normalized Capacitance vs.Reverse Voltage



## USB2.0 Protection



Dimensions(SOT-23-6L)



DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	2.80	3.10	0.110	0.122
B	1.30	1.75	0.051	0.069
C	0.9	1.45	0.035	0.057
D	0.25	0.50	0.010	0.020
G	0.95 BSC		0.037 BSC	
H	0.00	0.15	0.000	0.006
J	0.08	0.26	0.003	0.010
K	0.10	0.60	0.004	0.024
M	0°	10°	0°	10°
S	2.20	3.20	0.086	0.126

Recommended Mounting Pad Layout

