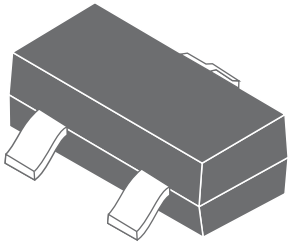
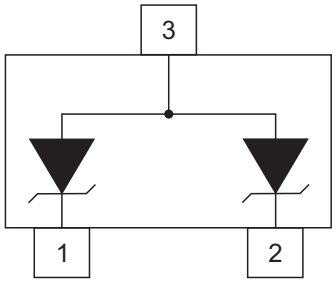
# Electro-Static Discharge
# TUSD05G2U

## SOT-23



## Pin Configuration




## Features

- 100 Watts Peak Pulse Power per Line (tp=8/20μs)
- Protects one I/O or power line
- Low clamping voltage
- Working voltages:5V
- Low leakage current

## IEC Compatibility

- IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ηs)

## Applications

- RS-232, RS-422 & RS-423 Data Lines
- Audio/Video Inputs
- Wireless Network Systems
- Digit Video Interface (DVI)
- Medical Sensors
- Notebook Computers
- USB3.0/3.1 Data line Protection

## Mechanical Characteristics

- JEDEC SOT-23 Package
- Molding Compound Flammability Rating:UL 94V-O
- Quantity Per Reel:3000pcs
- Reel Size:7 inch
- Lead Finish:Lead Free

## Maximum Ratings($T_A$=25℃ unless otherwise specified )

| Parameter | Symbol | Value | Units |
|---|---|---|---|
| Peak Pulse Power(tp=8/20μs) | $P_{PP}$ | 100 | Watts |
| Lead Soldering Temperature | $T_L$ | 260(10 sec.) | ℃ |
| Operating Temperature Range | $T_J$ | -55~150 | ℃ |
| Storage Temperature Range | $T_{STG}$ | -55~150 | ℃ |

## Electrical Characteristics($T_A$=25℃ unless otherwise specified )

**TUSD05G2U(Marking:R22)**

| Parameter | Symbol | Conditions | Min. | Max. | Units |
|---|---|---|---|---|---|
| Reverse Stand-off Voltage | $V_{RWM}$ | | | 5 | V |
| Breakdown Voltage | $V_{BR}$ | $I_T$=1mA | 6 | | V |
| Clamping Voltage | $V_C$ | $I_{PP}$=1A,tp=8/20μs | | 10 | V |
| Peak Pulse Current | $I_{PP}$ | tp=8/20μs | | 5 | A |
| Reverse Leakage Current | $I_R$ | @$V_{RWM}$ | | 1 | μA |
| Junction Capacitance | $C_{I/O}$ | 0Vdc,f=1MHz Pin 1 to Pin 2 | | 0.4 | pF |
| | | 0Vdc,f=1MHz Pin 1,2 to Pin 3 | | 0.8 | pF |

## Ratings and Characteristic Curves

Fig.1 Pulse Waveform

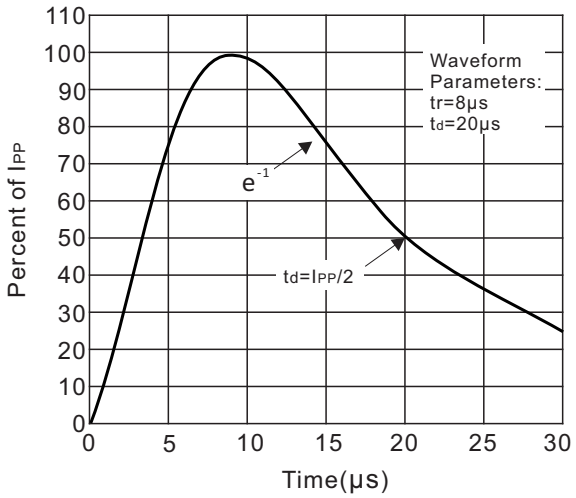
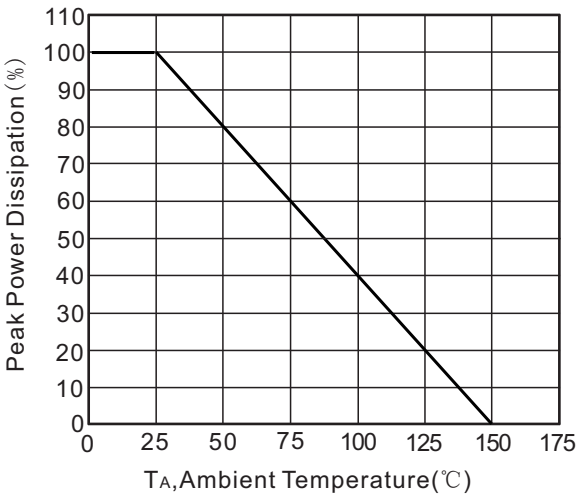
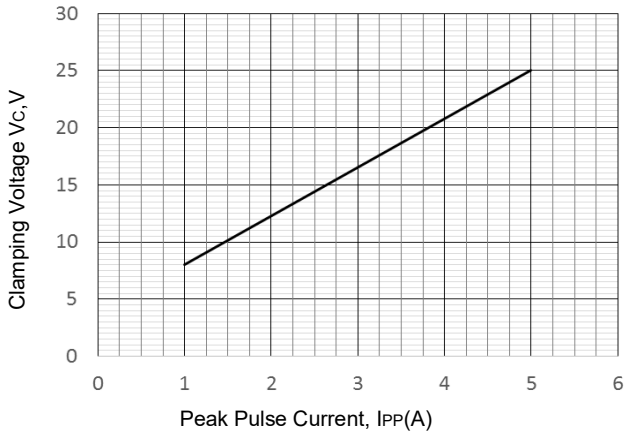



Fig.2 Power Derating Curve

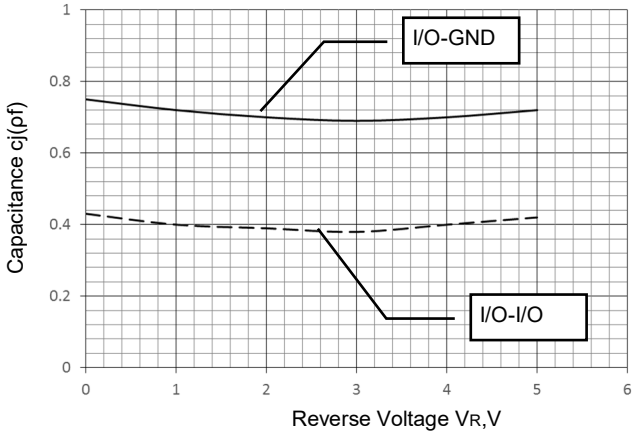


## Ratings and Characteristic Curves

### Fig.4 Clamping Voltage Vc Map

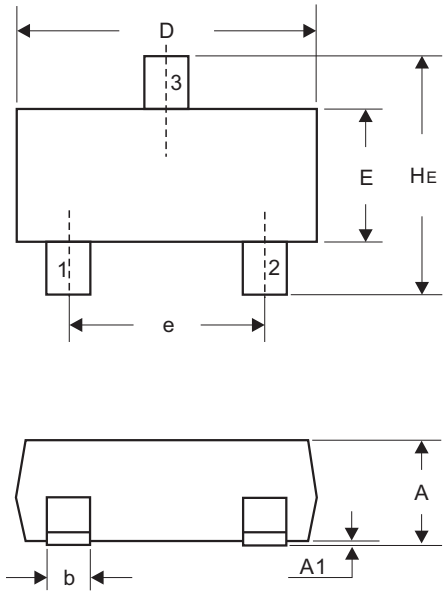



### Fig.5 Normalizd Capacitance vs.Reverse Voltage



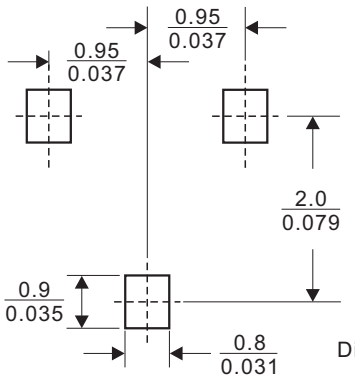

## Dimensions(SOT-23)

**SOT-23**




| DIM | Millimeters | | Inches | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | 0.89 | 1.11 | 0.035 | 0.044 |
| A1 | 0.01 | 0.10 | 0.001 | 0.004 |
| b | 0.37 | 0.50 | 0.015 | 0.020 |
| c | 0.09 | 0.18 | 0.003 | 0.007 |
| D | 2.80 | 3.04 | 0.110 | 0.120 |
| E | 1.20 | 1.40 | 0.047 | 0.055 |
| e | 1.78 | 2.04 | 0.070 | 0.081 |
| L | 0.35 | 0.69 | 0.014 | 0.029 |
| HE | 2.10 | 2.64 | 0.083 | 0.104 |

**Recommended Mounting Pad Layout**




Dimensions in ( millimeters / inches )