

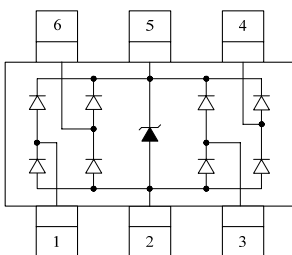
DESCRIPTION

KESDU5V0H4 a low capacitance of 0.4pF maximum and operates with virtually no insertion loss to 1GHz. This makes the device ideal for protection of high-speed data lines such as USB 2.0, Firewire, DVI, and gigabit Ethernet interfaces. The low capacitance array configuration allows the user to protect four high-speed data or transmission lines. The low inductance construction minimizes voltage overshoot during high current surges. They may be used to meet the ESD immunity requirements of IEC61000-4-2, Level 4 ($\pm 15\text{kV}$ air, $\pm 8\text{kV}$ contact discharge).

This device has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and lightning.

ORDERING INFORMATION

- ✧ Package: SOT-23-6L
- ✧ Material: Halogen free
- ✧ Packing: Tape & Reel
- ✧ Quantity per reel: 3,000pcs

PIN CONFIGURATION**FEATURES**

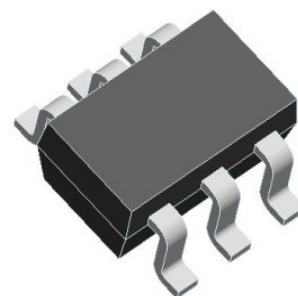
- ✧ Protects four I/O lines and one Vcc line
- ✧ Low capacitance
- ✧ Working voltages : 5V
- ✧ Low leakage current
- ✧ Low capacitance for high-speed interfaces
- ✧ No insertion loss to 2.0GHz
- ✧ Response Time is $< 1\text{ ns}$
- ✧ Solid-state silicon avalanche technology
- ✧ ROHS compliant

MACHANICAL DATA

- ✧ SOT-23-6L package
- ✧ Flammability Rating: UL 94V-0
- ✧ Terminal: Matte tin plated.
- ✧ Packaging: Tape and Reel
- ✧ High temperature soldering guaranteed: $260^{\circ}\text{C}/10\text{s}$
- ✧ Reel size: 7 inch

APPLICATIONS

- ✧ Digital Visual Interface (DVI)
- ✧ USB 1.1/2.0/OTG
- ✧ IEEE 1394 Firewire Ports
- ✧ Notebooks & Handhelds
- ✧ Projection TV & Monitors
- ✧ Set-top box
- ✧ Flat Panel Displays
- ✧ PCI Express

PACKAGE OUTLINE

ABSOLUTE MAXIMUM RATING

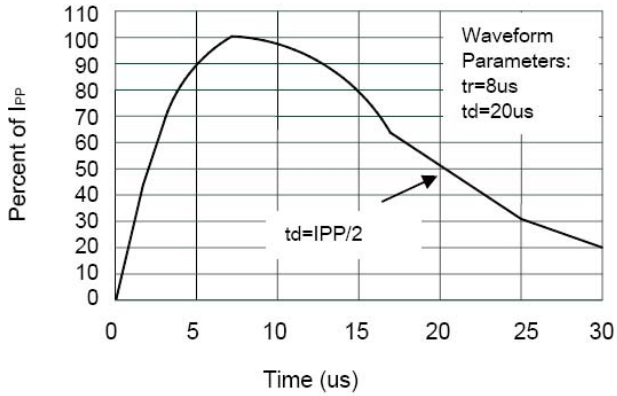
| Symbol | Parameter | Value | Units |
|-----------|--|---------------------|--------------|
| P_{PK} | Peak Pulse Power (8/20 μ s) | 150 | W |
| I_{PP} | Peak Pulse Current (8/20 μ s) | 5 | A |
| V_{ESD} | ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact) | ± 15 ± 8 | kV |
| T_{OPT} | Operating Temperature | -55/+150 | $^{\circ}$ C |
| T_{STG} | Storage Temperature | -55/+150 | $^{\circ}$ C |

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}$ C)

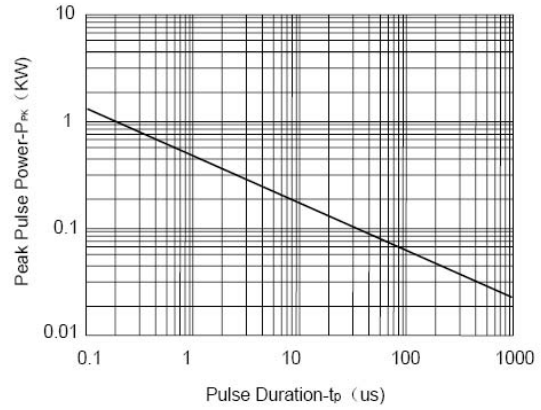
| Symbol | Parameter | Test Condition | Min | Typ | Max | Units |
|-----------|---------------------------|--|-----|-----|-----|---------|
| V_{RWM} | Reverse Working Voltage | Any I/O pin to GND | | | 5.0 | V |
| V_{BR} | Reverse Breakdown Voltage | $I_T = 1mA$ Any I/O pin to GND | 6.0 | | | V |
| I_R | Reverse Leakage Current | $V_{RWM} = 5V$ Any I/O pin to GND | | | 1 | μ A |
| V_F | Diode Forward Voltage | $I_F = 15mA$ | | | 1.2 | V |
| V_{C1} | Clamping Voltage 1 | $I_{PP} = 1A, t_p = 8/20\mu s$ Any I/O pin to GND | | | 15 | V |
| V_{C2} | Clamping Voltage 2 | $I_{PP} = 5A, t_p = 8/20\mu s$ Any I/O pin to GND | | | 28 | V |
| C_{J1} | Junction Capacitance 1 | $V_R = 0V, f = 1MHz$ Between I/O pins | | | 0.4 | pF |
| C_{J2} | Junction Capacitance 2 | $V_R = 0V, f = 1MHz$ Any I/O pin to GND | | | 0.8 | pF |

Note: I/O pins are pin 1,3,4,6.

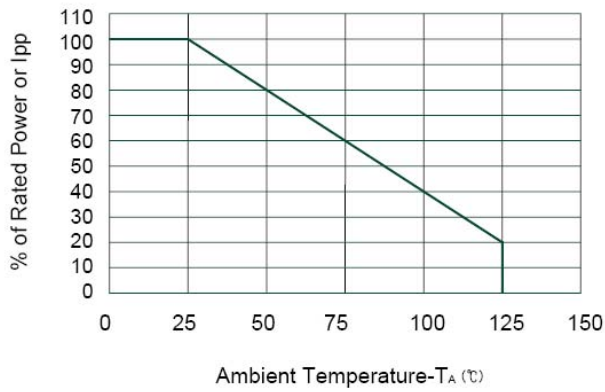
ELECTRICAL CHARACTERISTICS CURVE



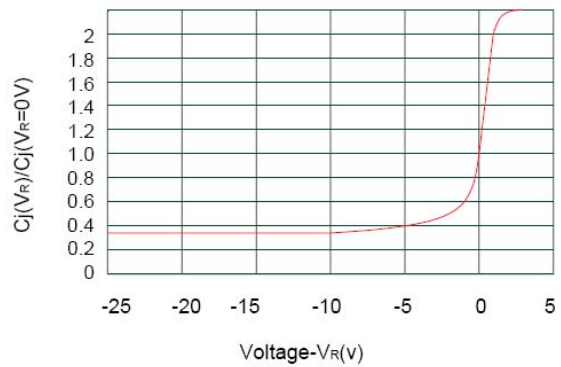
Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time

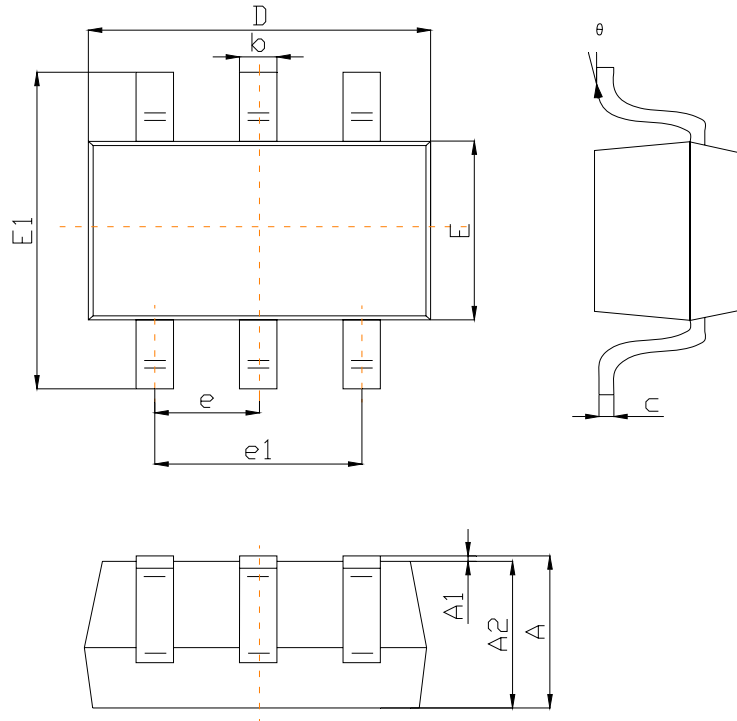


Power Derating Curve



Junction Capacitance vs. Reverse Voltage

SOT-23-6L PACKAGE OUTLINE DIMENSIONS



| 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 | | 0.004 |
| 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 |
| E | 1.500 | 1.700 | 0.059 | 0.067 |
| E1 | 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 |
| | 0° | 8° | 0° | 8° |