

## Features

- ◆ Ultra low capacitance: 0.3pF typical (I/O to I/O)
- ◆ Ultra low leakage: nA level
- ◆ Low operating voltage: 5V
- ◆ Low clamping voltage
- ◆ Up to 4 data lines and one power line protects
- ◆ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±25kV
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) : 3A(8/20μs)
- ◆ ROHS Compliant

## Ordering Information

| Part Number   | Qty per Reel | Reel Size |
|---------------|--------------|-----------|
| UDT26A05L05UL | 3000         | 7"        |

## Mechanical Characteristics

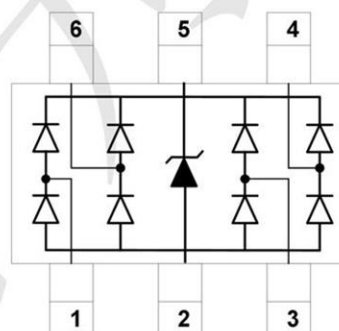
- ◆ Package: SOT23-6
- ◆ Lead Finish: Matte Tin
- ◆ Case Material: "Green" Molding Compound.
- ◆ UL Flammability Classification Rating 94V-0
- ◆ Moisture Sensitivity: Level 3 per J-STD-020



## Applications

- ◆ USB 2.0 and USB 3.0 Ports
- ◆ USB OTG
- ◆ Digital video interface(DVI)
- ◆ Monitor and Flat Panel Displays
- ◆ PCI Express and Serial SATA Ports
- ◆ Gigabit Ethernet
- ◆ IEEE 1394 firewire ports
- ◆ Consumer products (STB, DVD, DSC, DVC...)

## Dimensions and Pin Configuration



Circuit and Pin Schematic

Marking: V05

**Absolute Maximum Ratings** (Tamb=25°C unless otherwise specified)

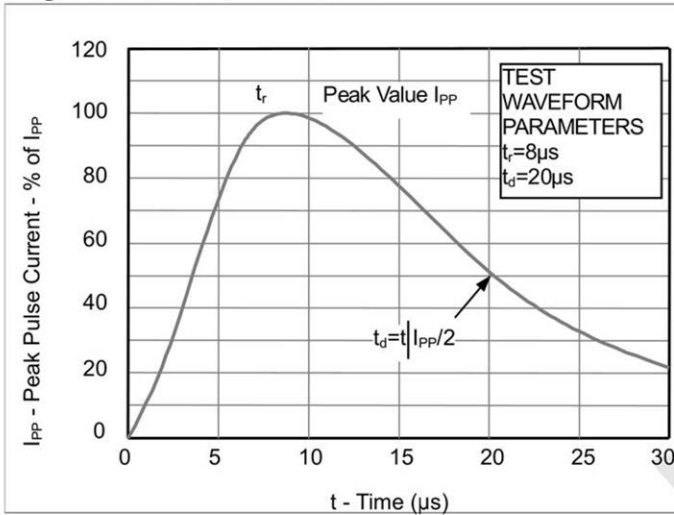
| Parameter  | Symbol           | Value       | Unit |
|--|------------------|-------------|------|
| Peak Pulse Power (tp=8/20μs)                                   | PPP              | 60          | W    |
| Peak Pulse Current (tp=8/20μs)                                 | I <sub>PP</sub>  | 3           | A    |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | V <sub>ESD</sub> | ±30<br>±25  | kV   |
| Operating Temperature Range                                    | T <sub>J</sub>   | -55 to +125 | °C   |
| Storage Temperature Range                                      | T <sub>stg</sub> | -55 to +150 | °C   |

**Electrical Characteristics** (TA=25°C unless otherwise specified)

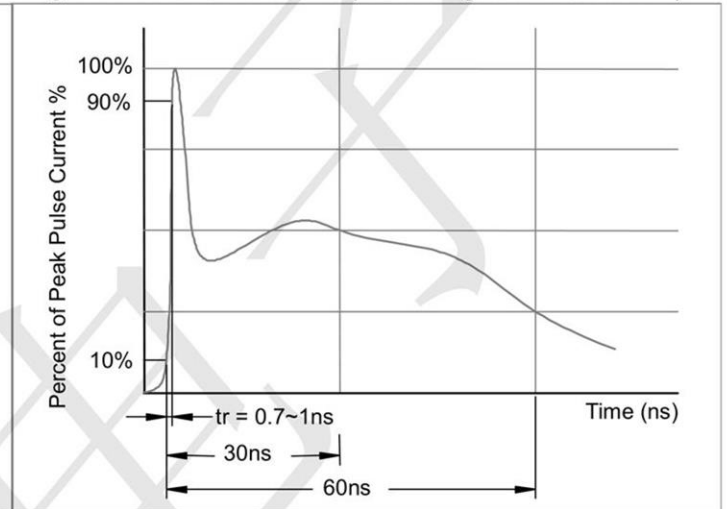
| Parameter               | Symbol           | Min | Typ | Max | Unit | Test Condition  |
|-------------------------|------------------|-----|-----|-----|------|---|
| Reverse Working Voltage | V <sub>RWM</sub> |     |     | 5   | V    | Any I/O pin to ground                                       |
| Breakdown Voltage       | V <sub>BR</sub>  | 6   |     |     | V    | I <sub>T</sub> = 1mA, any I/O pin to ground                 |
| Reverse Leakage Current | I <sub>R</sub>   |     |     | 0.5 | μA   | V <sub>RWM</sub> = 5V, any I/O pin to ground                |
| Clamping Voltage        | V <sub>C</sub>   |     |     | 15  | V    | I <sub>PP</sub> = 1A (8 x 20μs pulse) any I/O pin to ground |
| Clamping Voltage        | V <sub>C</sub>   |     |     | 20  | V    | I <sub>PP</sub> = 3A (8 x 20μs pulse) any I/O pin to ground |
| Junction Capacitance    | C <sub>J</sub>   |     | 0.3 | 0.4 | pF   | V <sub>R</sub> = 0V, f = 1MHz, between I/O pins             |
| Junction Capacitance    | C <sub>J</sub>   |     |     | 0.8 | pF   | V <sub>R</sub> = 0V, f = 1MHz, any I/O pin to ground        |

Note 1: I/O pins are Pin 1, 3, 4 and 6

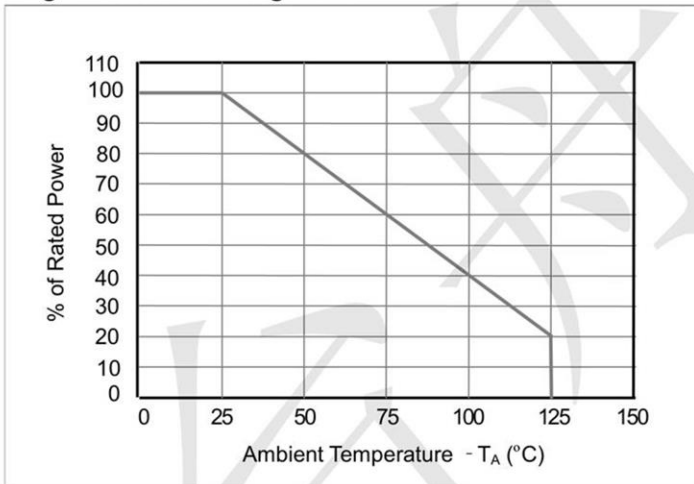
**Fig1. 8/20 $\mu$ s Pulse Waveform**



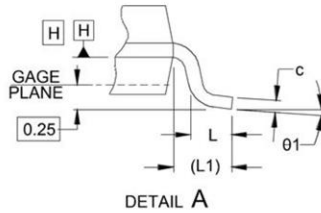
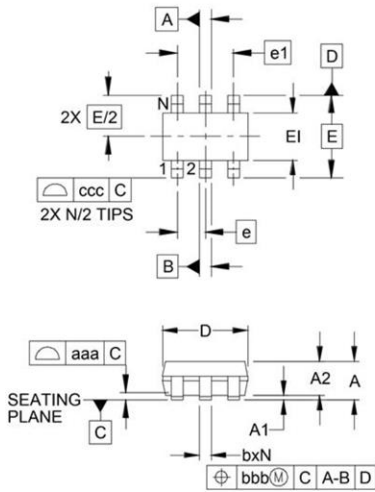
**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**



**Fig3. Power Derating Curve**

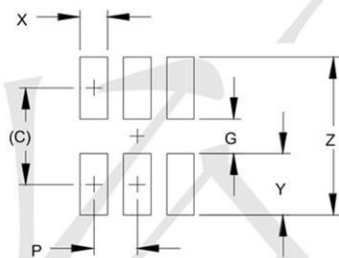


**Outline Drawing - SOT23-6**



| DIM    | INCHES   |      | MILLIMETERS |      |      |      |
|--------|----------|------|-------------|------|------|------|
|        | MIN      | NOM  | MAX         | MIN  | NOM  | MAX  |
| A      | .035     | -    | .057        | 0.90 | -    | 1.45 |
| A1     | .000     | -    | .006        | 0.00 | -    | 0.15 |
| A2     | .035     | .045 | .051        | .90  | 1.15 | 1.30 |
| b      | .010     | -    | .020        | 0.25 | -    | 0.50 |
| c      | .003     | -    | .009        | 0.08 | -    | 0.22 |
| D      | .110     | .114 | .118        | 2.80 | 2.90 | 3.00 |
| E1     | .060     | .063 | .069        | 1.50 | 1.60 | 1.75 |
| E      | .110 BSC |      | 2.80 BSC    |      |      |      |
| e      | .037 BSC |      | 0.95 BSC    |      |      |      |
| e1     | .075 BSC |      | 1.90 BSC    |      |      |      |
| L      | .012     | .018 | .024        | 0.30 | 0.45 | 0.60 |
| L1     | (.024)   |      | (0.60)      |      |      |      |
| N      | 6        |      | 6           |      |      |      |
| theta1 | 0°       | -    | 10°         | 0°   | -    | 10°  |
| aaa    | .004     |      | 0.10        |      |      |      |
| bbb    | .008     |      | 0.20        |      |      |      |
| ccc    | .008     |      | 0.20        |      |      |      |

**Land Pattern - SOT23-6**



| DIM | DIMENSIONS |             |
|-----|------------|-------------|
|     | INCHES     | MILLIMETERS |
| C   | (.098)     | (2.50)      |
| G   | .055       | 1.40        |
| P   | .037       | 0.95        |
| X   | .024       | 0.60        |
| Y   | .043       | 1.10        |
| Z   | .141       | 3.60        |