

## 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: ±25kV
    - Contact discharge: ±20kV
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) : 4 A(8/20µs)
- ◆ ROHS Compliant

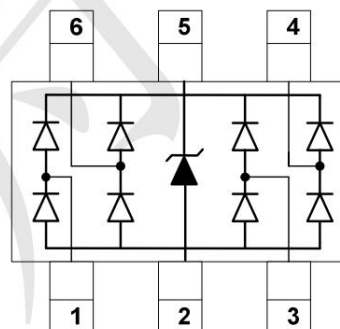
## Mechanical Characteristics

- ◆ 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
- ◆ Shipping Qty :3000/71Inch Tape & Reel

## 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)

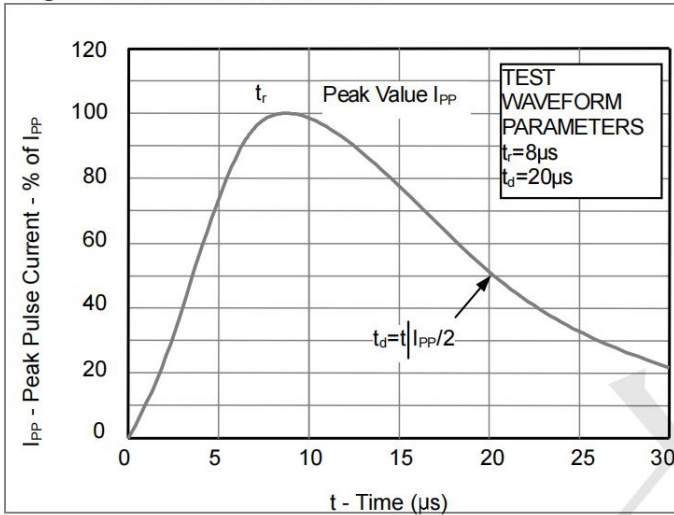
| Parameter  | Symbol | Value       | Unit |
|--|--------|-------------|------|
| Peak Pulse Power (tp=8/20μs)                                   | PPP    | 150         | W    |
| Peak Pulse Current (tp=8/20μs)                                 | IPP    | 4           | A    |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | VESD   | ±25<br>±20  | kV   |
| Operating Temperature Range                                    | TJ     | -55 to +125 | °C   |
| Storage Temperature Range                                      | Tstg   | -55 to +150 | °C   |

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

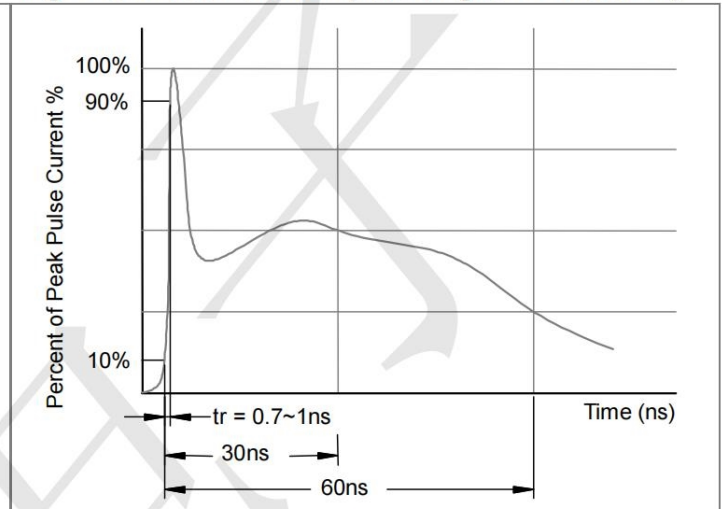
| Parameter               | Symbol | Min | Typ | Max  | Unit | Test Condition                                   |
|-------------------------|--------|-----|-----|------|------|--|
| Reverse Working Voltage | VRWM   |     |     | 5    | V    | Any I/O pin to ground                            |
| Breakdown Voltage       | VBR    | 6   |     |      | V    | IT = 1mA, any I/O pin to ground                  |
| Reverse Leakage Current | IR     |     |     | 0.08 | μA   | VRWM = 5V, any I/O pin to ground                 |
| Clamping Voltage        | VC     |     |     | 11   | V    | IPP = 1A (8 x 20μs pulse) any I/O pin to ground  |
| Clamping Voltage        | VC     |     |     | 15   | V    | IPP = 4 A (8 x 20μs pulse) any I/O pin to ground |
| Clamping Voltage        | CJ     |     |     | 18   | V    | IPP = 17A (8 x 20μs pulse) VCC to ground         |
| Junction Capacitance    | CJ     |     |     | 0.8  | pF   | VR = 0V, f = 1MHz, any I/O pin to ground         |
| Junction Capacitance    | CJ     |     | 0.3 | 0.4  | pF   | VR = 0V, f = 1MHz, between I/O pins              |

**Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise Specified)**

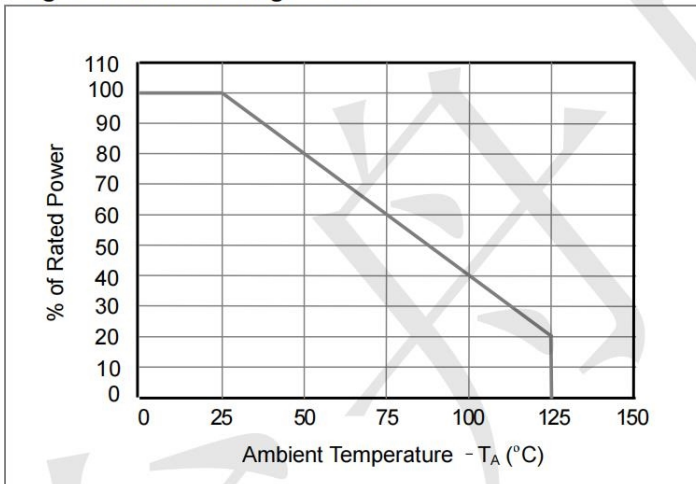
**Fig1. 8/20 $\mu\text{s}$  Pulse Waveform**



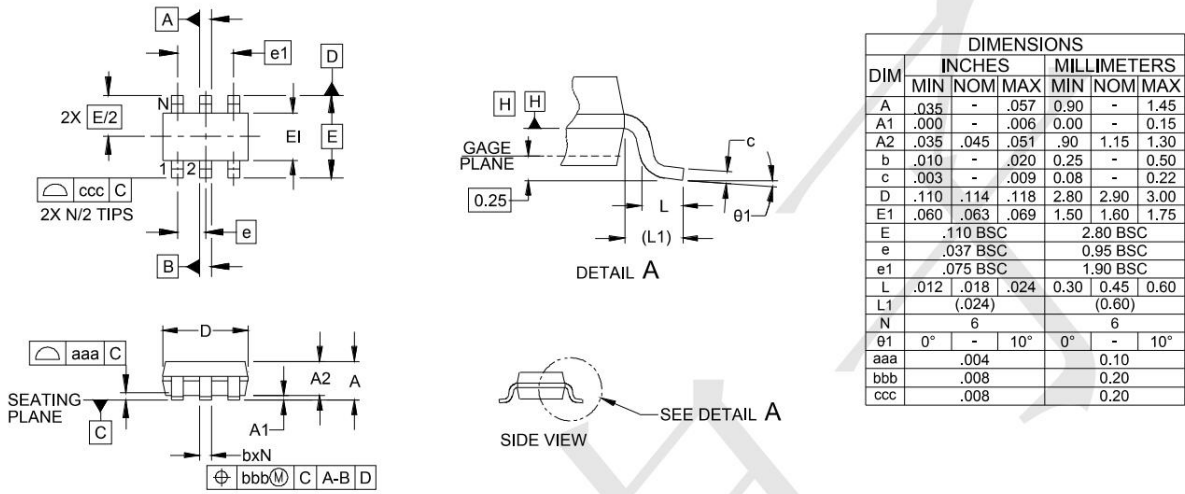
**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**



**Fig3. Power Derating Curve**



**Outline Drawing - SOT23-6**



**Land Pattern - SOT23-6**

