

Features

- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 18\text{kV}$
 - Contact discharge: $\pm 15\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 5A (8/20ns)
- RoHS Compliant

Applications

- USB 2.0/3.1 power and data line
- Set-top box and digital TV
- Digital video interface (DVI)
- Notebook Computers
- SIM Ports
- 10/100/1000 Ethernet
- HDMI 1.3/1.4/2.0 interface

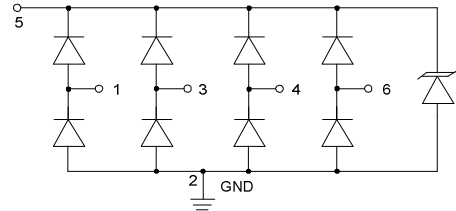
Mechanical Characteristics

- Package: DFN1616-6
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 3,000pcs
- Reel Size: 7 inch

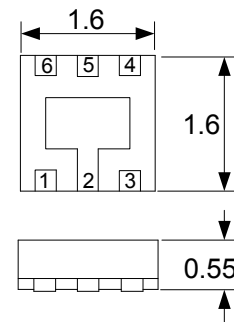
Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--|------------------|-------------|------|
| Peak Pulse Power (8/20 μs) | Ppp | 100 | W |
| ESD per IEC 61000-4-2 (Air) | V _{ESD} | ± 18 | Kv |
| ESD per IEC 61000-4-2 (Contact) | | ± 15 | |
| Operating Temperature Range | T _J | -55 to +125 | °C |
| Storage Temperature Range | T _{STJ} | -55 to +150 | °C |

Dimensions DFN1616-6



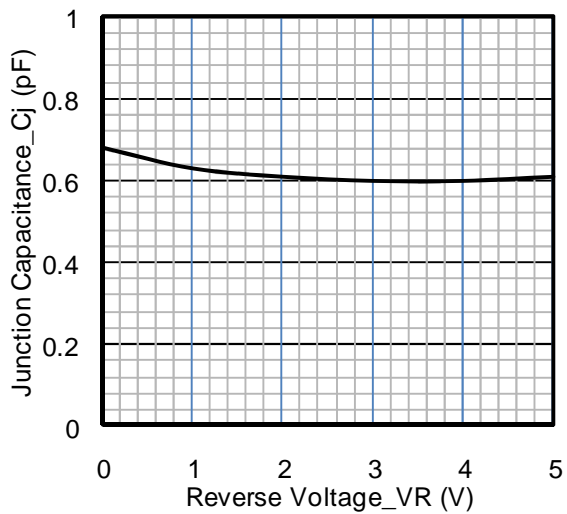
Pin Configuration



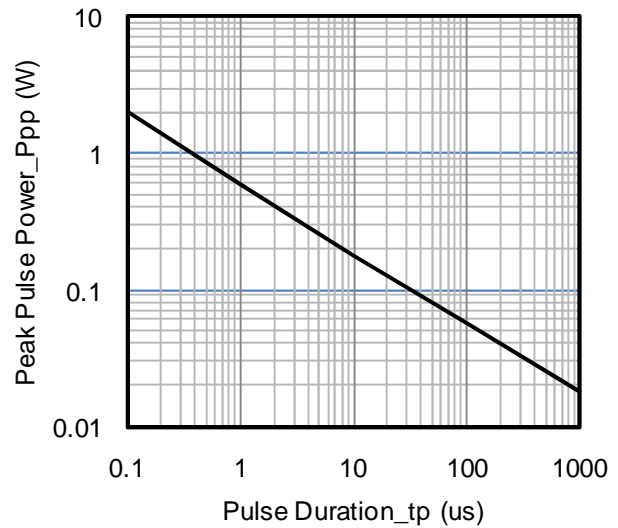
Electrical Characteristics (TA=25°C unless otherwise specified)

| Part Number | Device Marking | V _{RWM} (V) | V _{BR} (V) | I _T (mA) | V _C @1A | V _C | | I _R μA (Max) | C (Pf) (Typ.) |
|--------------|----------------|----------------------|---------------------|---------------------|--------------------|----------------|------|-------------------------|---------------|
| | | | | | | (Max) | (@A) | | |
| SP3002-04UTG | 53P | 5 | 6 | 1 | 10 | 20 | 5 | 0.5 | 0.4 |

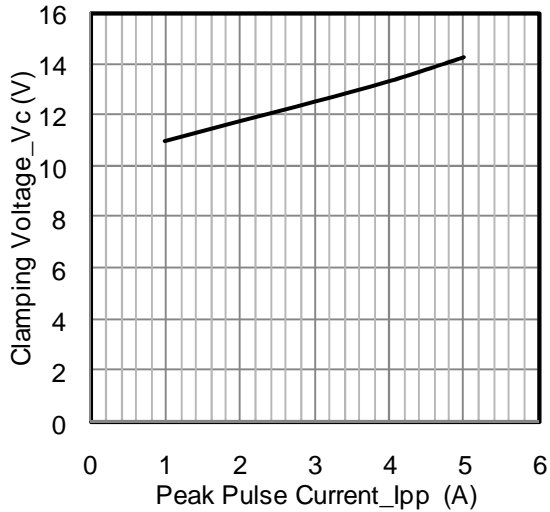
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



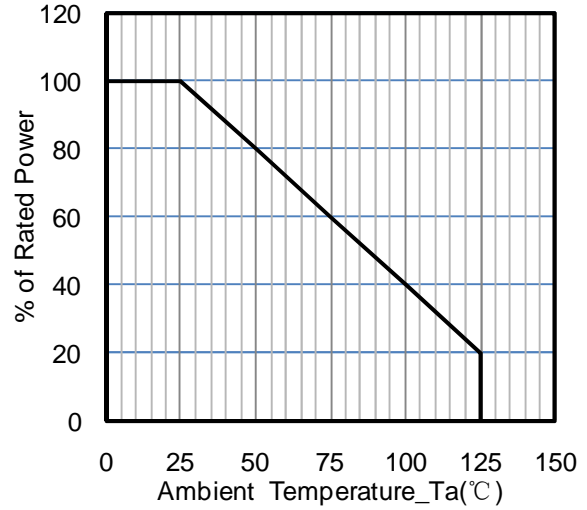
Junction Capacitance vs. Reverse Voltage



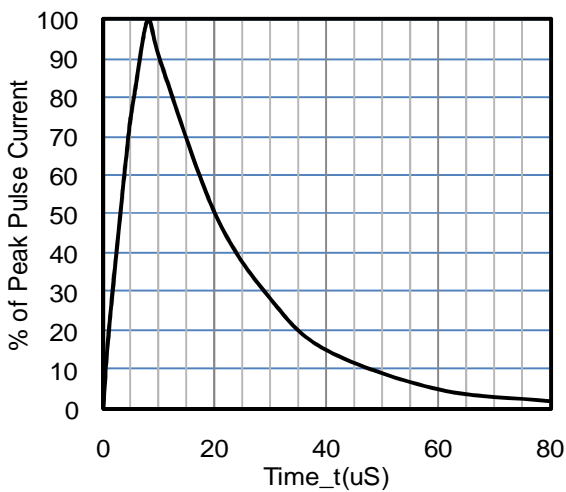
Peak Pulse Power vs. Pulse Time



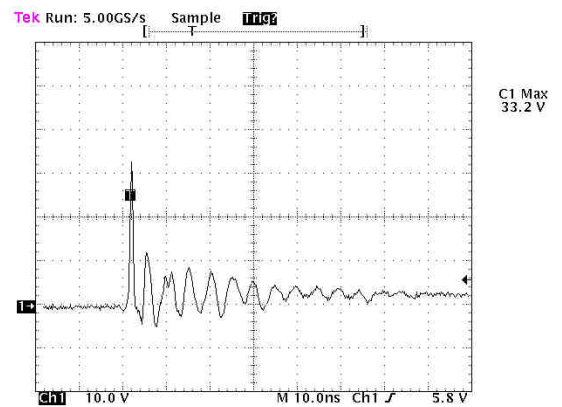
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



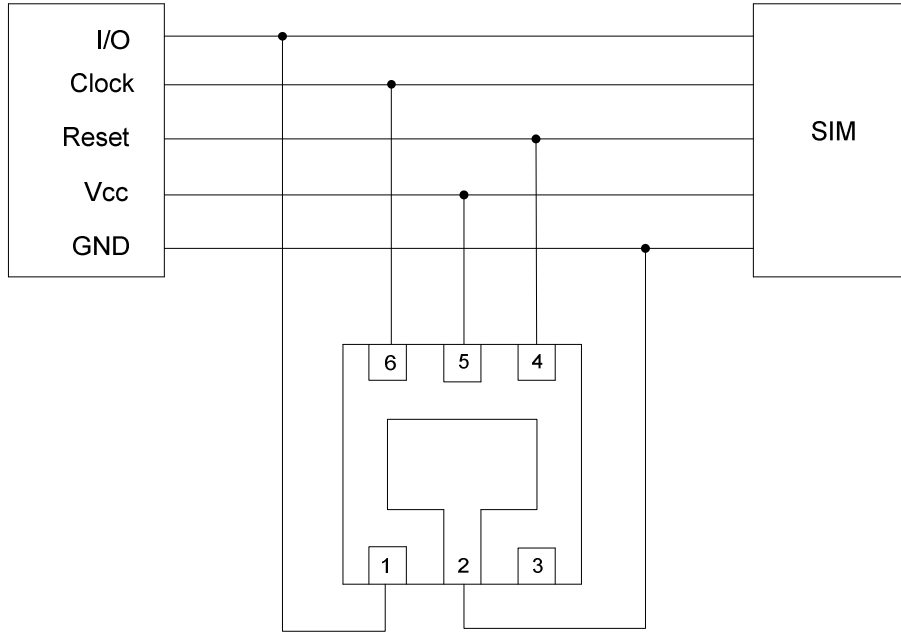
8 X 20us Pulse Waveform



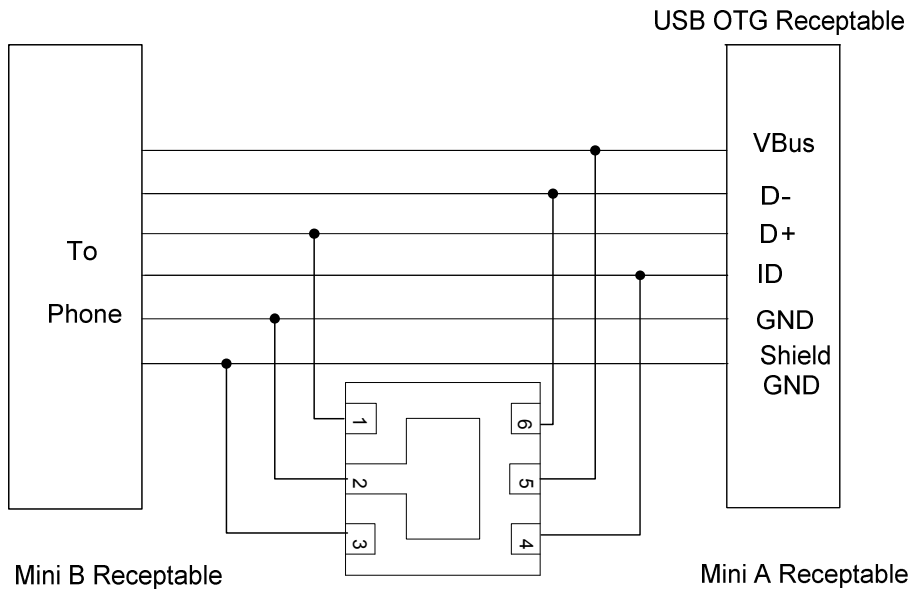
ESD Clamping Voltage

8 kV Contact per IEC61000-4-2

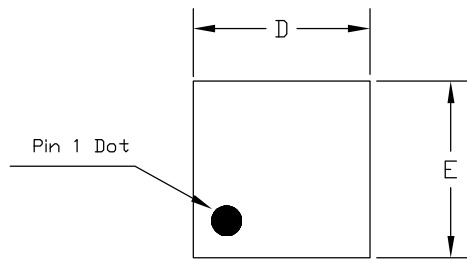
SP3002-04UTG on SIM Port Application



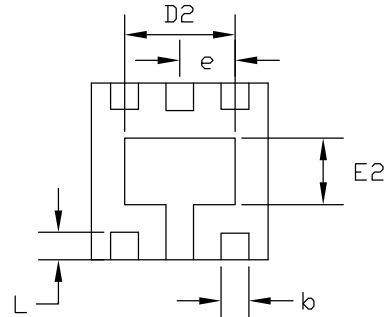
SP3002-04UTG on USB OTG Application



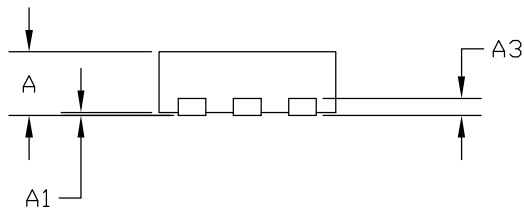
DFN1616-6 Package Outline Drawing



TOP VIEW



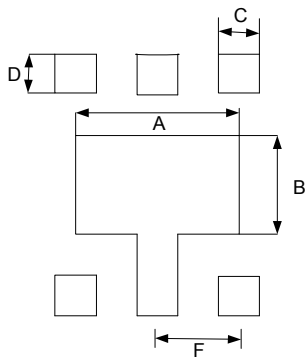
BOTTOM VIEW



SIDE VIEW

| PKG. REF. | COMMON DIMENSIONS(MM) | | |
|-----------|-----------------------|------|------|
| | UT: ULTRA THIN | | |
| | MIN. | NOM. | MAX |
| A | 0.50 | 0.55 | 0.60 |
| A1 | 0.00 | - | 0.05 |
| A3 | 0.15 REF. | | |
| D | 1.55 | 1.60 | 1.65 |
| E | 1.55 | 1.60 | 1.65 |
| D2 | 0.85 | 1.00 | 1.10 |
| E2 | 0.45 | 0.60 | 0.70 |
| L | 0.20 | 0.25 | 0.30 |
| b | 0.20 | 0.25 | 0.30 |
| e | 0.50 BSC | | |

Suggested Land Pattern



| SYM | DIMENSIONS | |
|-----|-------------|--------|
| | MILLIMETERS | INCHES |
| A | 1.20 | 0.04 |
| B | 0.72 | 0.020 |
| C | 0.30 | 0.012 |
| D | 0.30 | 0.032 |
| F | 0.60 | 0.052 |