

### Features

- Ultra low capacitance: 0.35pF(IO to IO)
- Ultra low leakage: nA level
- Low operating voltage: 5V
- Low clamping voltage
- Protects one power line and four data lines
- Flow-through package
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 25\text{kV}$   
Contact discharge:  $\pm 20\text{kV}$
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 4.5A (8/20 $\mu\text{s}$ )
- RoHS Compliant

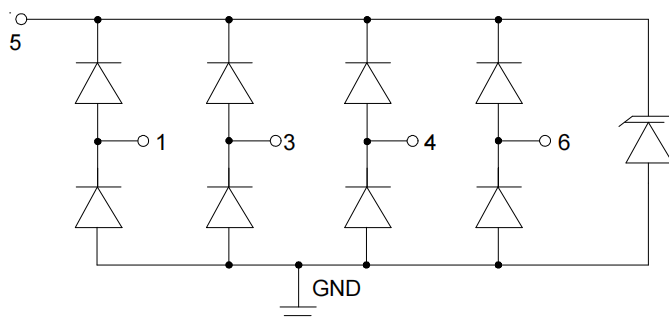
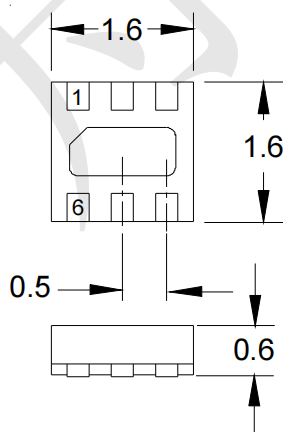
### Mechanical Characteristics

- Package: DFN1616-6
- 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 :3000pcs/7Inch Tape & Reel

### Applications

- USB 2.0 and USB OTG
- Multi Media Card (MMC) Interfaces
- SD Card Interfaces
- MDDI Ports
- SIM Ports
- Key Pads

### Dimensions and Pin Configuration



**Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

| Parameter                                                      | Symbol           | Value                | Unit               |
|----------------------------------------------------------------|------------------|----------------------|--------------------|
| Peak Pulse Power (8/20 $\mu\text{s}$ )                         | Ppk              | 120                  | W                  |
| Peak Pulse Current (8/20 $\mu\text{s}$ )                       | I <sub>PP</sub>  | 4.5                  | A                  |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | V <sub>ESD</sub> | $\pm 25$<br>$\pm 20$ | kV                 |
| Operating Temperature Range                                    | T <sub>J</sub>   | -55 to +125          | $^{\circ}\text{C}$ |
| Storage Temperature Range                                      | T <sub>stg</sub> | -55 to +150          | $^{\circ}\text{C}$ |

**Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  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>   |     |      | 1   | $\mu\text{A}$ | 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 20 $\mu\text{s}$ pulse), any I/O pin to ground   |
| Clamping Voltage        | V <sub>C</sub>   |     |      | 21  | V             | I <sub>PP</sub> = 4.5A (8 x 20 $\mu\text{s}$ pulse), any I/O pin to ground |
| Junction Capacitance    | C <sub>J</sub>   |     | 0.7  |     | pF            | V <sub>R</sub> = 0V, f = 1MHz, any I/O pin to ground                       |
| Junction Capacitance    | C <sub>J</sub>   |     | 0.35 | 0.6 | pF            | V <sub>R</sub> = 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

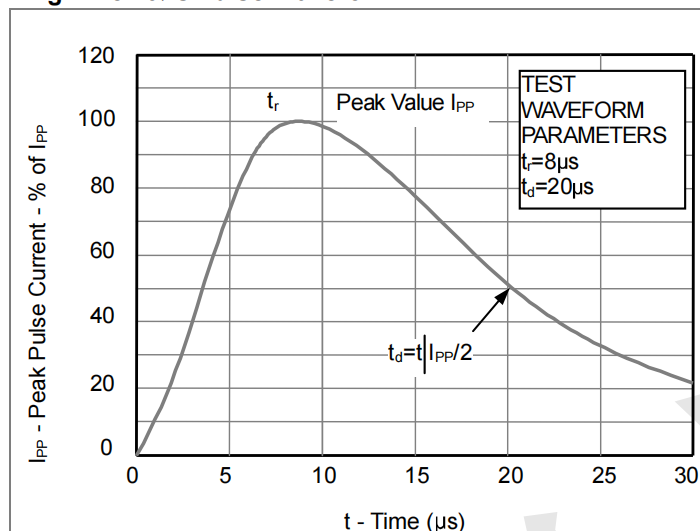


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

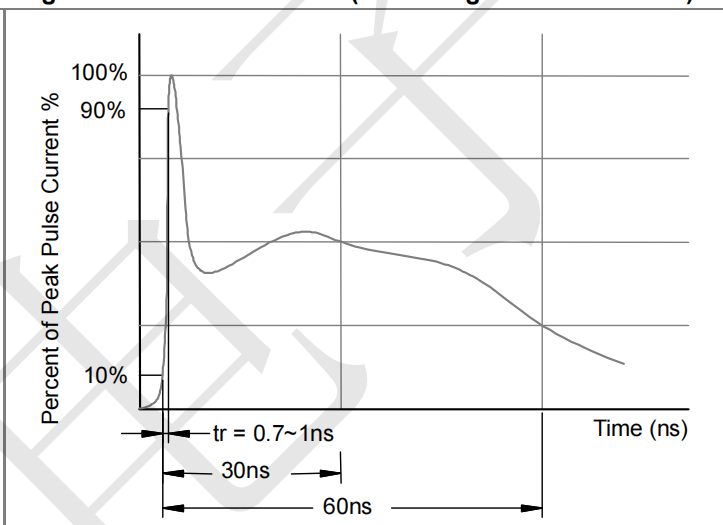
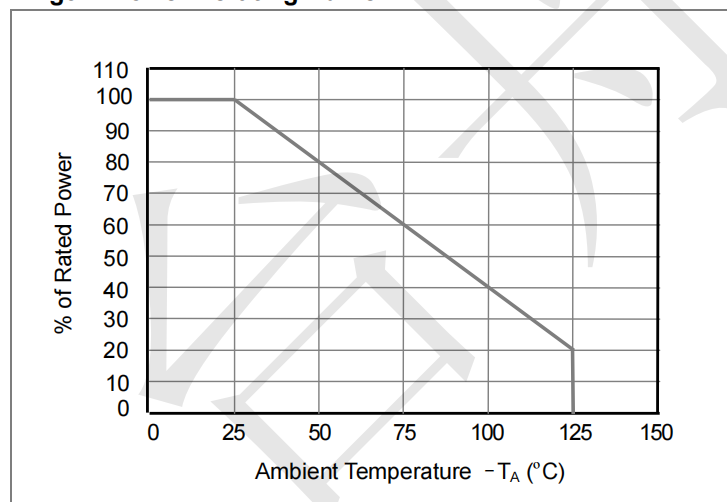
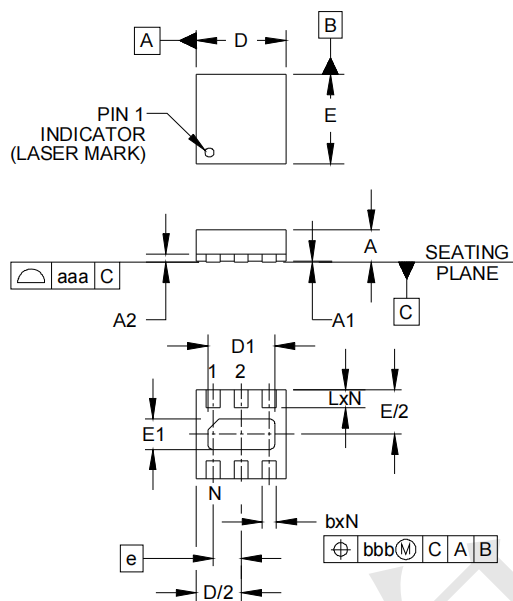


Fig3. Power Derating Curve

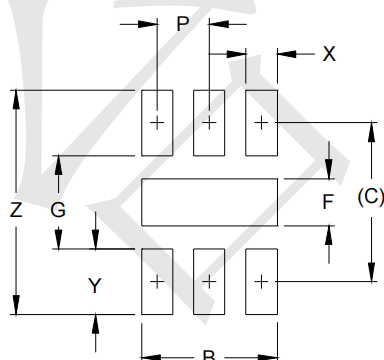


## Outline Drawing -DFN1616-6



| DIM | DIMENSIONS |      |      |             |      |      |
|-----|------------|------|------|-------------|------|------|
|     | INCHES     |      |      | MILLIMETERS |      |      |
|     | MIN        | NOM  | MAX  | MIN         | NOM  | MAX  |
| A   | .020       | .023 | .026 | 0.50        | 0.58 | 0.65 |
| A1  | 0.00       | .001 | .002 | 0.00        | 0.03 | 0.05 |
| A2  | (.006)     |      |      | (0.15)      |      |      |
| b   | .007       | .010 | .012 | 0.20        | 0.25 | 0.30 |
| D   | .059       | .063 | .067 | 1.50        | 1.60 | 1.70 |
| D1  | .041       | .047 | .051 | 1.05        | 1.20 | 1.30 |
| E   | .059       | .063 | .067 | 1.50        | 1.60 | 1.70 |
| E1  | .016       | .022 | .026 | 0.40        | 0.55 | 0.65 |
| e   | .020 BSC   |      |      | 0.50 BSC    |      |      |
| L   | .013       | .013 | .016 | 0.25        | 0.33 | 0.40 |
| N   | 6          |      |      | 6           |      |      |
| aaa | .004       |      |      | 0.09        |      |      |
| bbb | .004       |      |      | 0.09        |      |      |

## Land Pattern -DFN1616-6



| DIM | DIMENSIONS |             |
|-----|------------|-------------|
|     | INCHES     | MILLIMETERS |
| B   | .051       | 1.30        |
| C   | .060       | 1.52        |
| P   | .020       | 0.50        |
| F   | .018       | 0.45        |
| G   | .035       | 0.89        |
| X   | .012       | 0.30        |
| Y   | .025       | 0.63        |
| Z   | .085       | 2.15        |