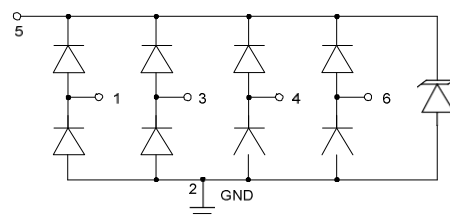


## 4-Line Low Capacitance TVS Diode Array

### 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

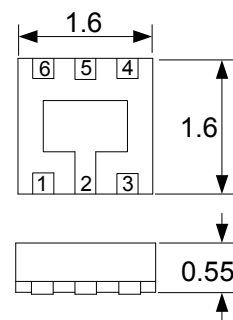
### DFN1616-6



### 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

### Pin Configuration



## Mechanical Characteristics

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

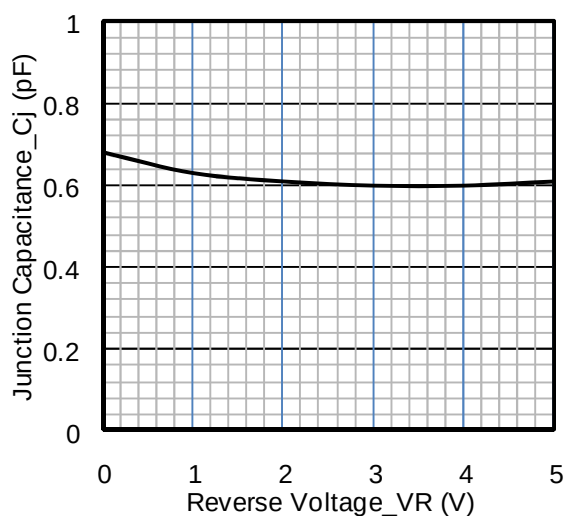
## Absolute Maximum Ratings (T<sub>amb</sub>=25°C unless otherwise specified)

| Parameter                       | Symbol           | Value       | Unit |
|---------------------------------|------------------|-------------|------|
| Peak Pulse Power (8/20μs)       | P <sub>pp</sub>  | 100         | W    |
| ESD per IEC 61000-4-2 (Air)     | V <sub>ESD</sub> | $\pm 18$    | Kv   |
| ESD per IEC 61000-4-2 (Contact) |                  | $\pm 15$    |      |
| Operating Temperature Range     | T <sub>J</sub>   | -55 to +125 | °C   |
| Storage Temperature Range       | T <sub>STJ</sub> | -55 to +150 | °C   |

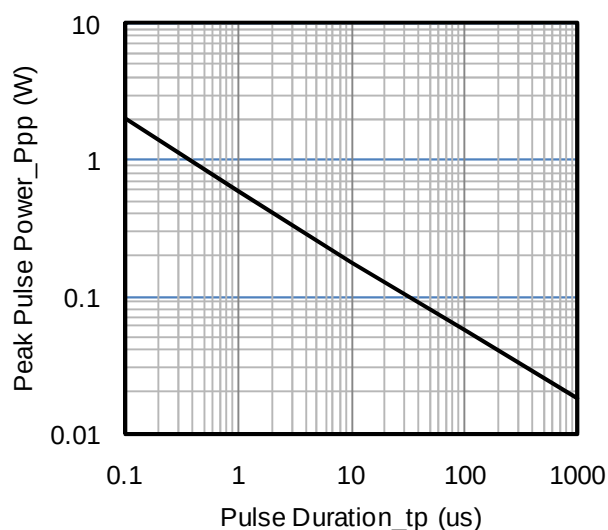
## Electrical Characteristics (TA=25°C unless otherwise specified)

| Part Number | Device Marking | V <sub>RWM</sub><br>(V) | V <sub>BR</sub><br>(V) | I <sub>T</sub><br>(mA) | V <sub>C</sub><br>@1A | V <sub>C</sub> |      | I <sub>R</sub><br>μA<br>(Max) | C<br>(Pf)<br>(Typ.) |
|-------------|----------------|-------------------------|------------------------|------------------------|-----------------------|----------------|------|-------------------------------|---------------------|
|             |                |                         |                        |                        |                       | (Max)          | (@A) |                               |                     |
| KWULC0504P  | 53P            | 5                       | 6                      | 1                      | 10                    | 20             | 5    | 0.5                           | 0.4                 |

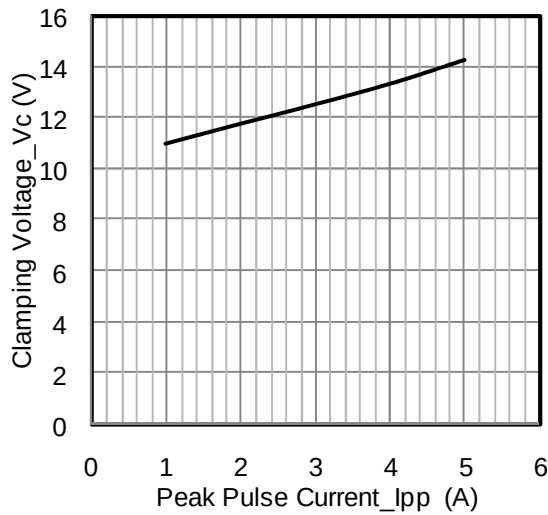
## Typical Performance Characteristics (TA=25°C unless otherwise Specified)



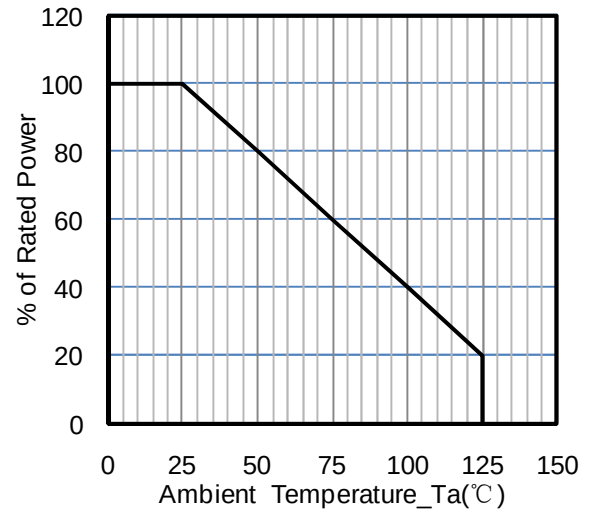
Junction Capacitance vs. Reverse Voltage



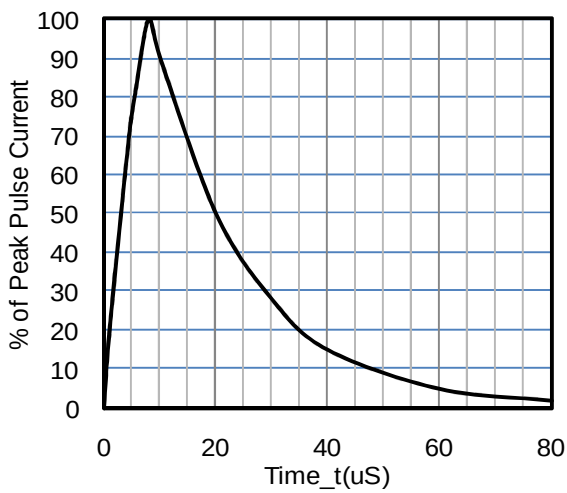
Peak Pulse Power vs. Pulse Time



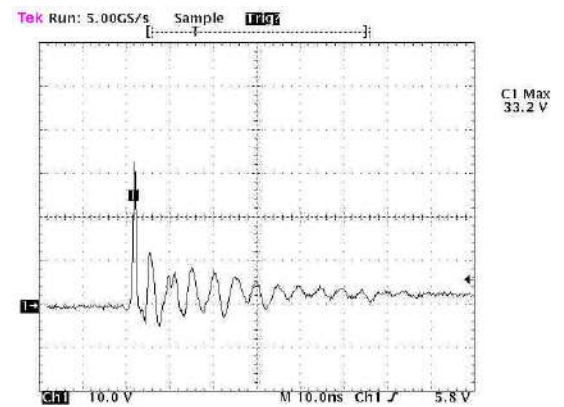
**Clamping Voltage vs. Peak Pulse Current**



**Power Derating Curve**



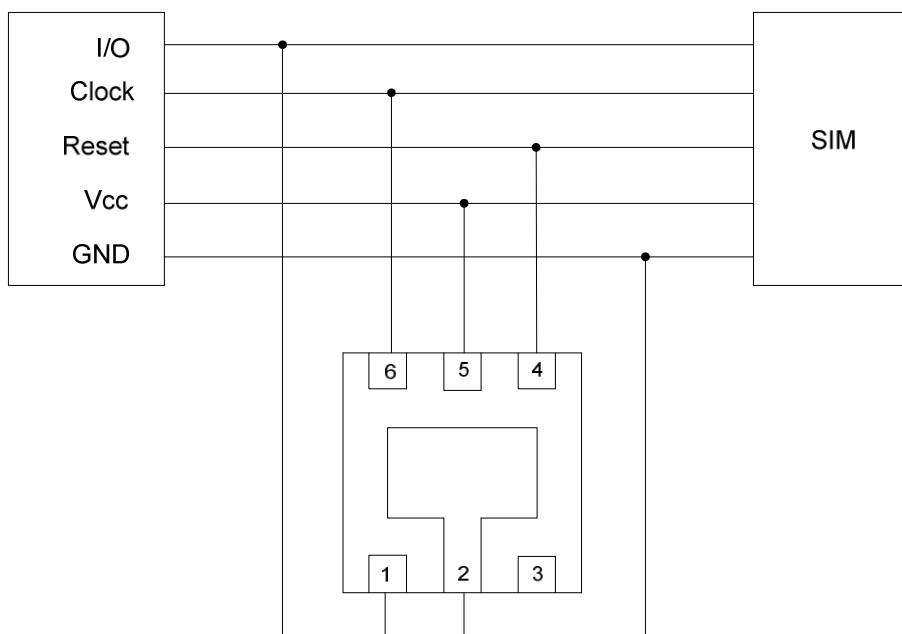
**8 X 20us Pulse Waveform**



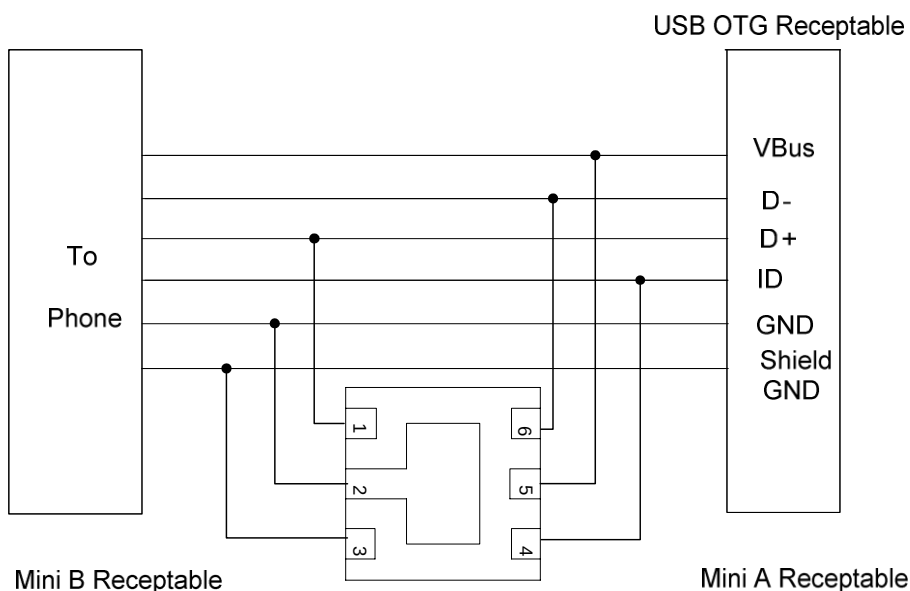
**ESD Clamping Voltage**

**8 kV Contact per IEC61000-4-2**

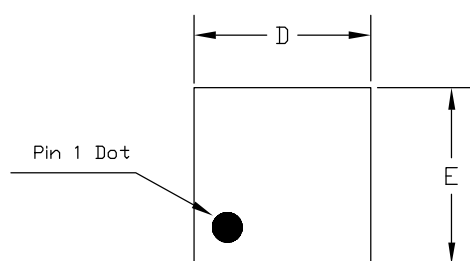
### KWULC0504P on SIM Port Application



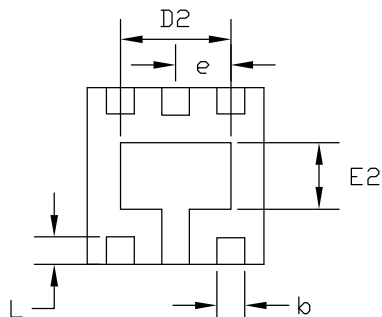
### KWULC0504P on USB OTG Application



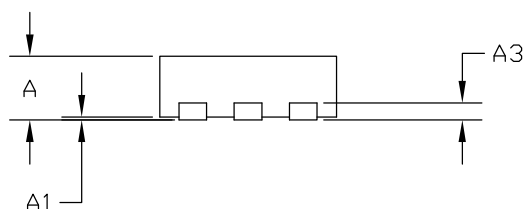
## DFN1616-6 Package Outline Drawing



TOP VIEW



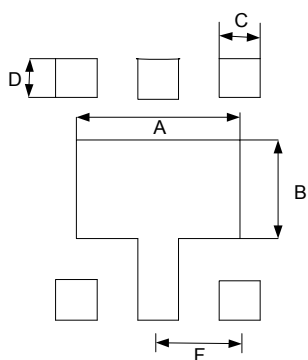
BOTTOM VIEW



SIDE VIEW

| COMMON DIMENSIONS(MM) |           |                        |      |
|-----------------------|-----------|------------------------|------|
| PKG. REF.             | MIN.      | UT: ULTRA THIN<br>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  |