

## »Features

- 60Watts peak pulse power ( $t_p = 8/20\mu s$ )
- Tiny DFN0603 package
- Bidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Low capacitance ( $C_j=0.2pF$  typ.)
- Protection one data/power line
- IEC 61000-4-2  $\pm 15kV$  contact  $\pm 20kV$  air
- IEC 61000-4-4 (EFT)40A(5/50ns)
- IEC 61000-4-5 (Lightning)3.0A(8/20 $\mu s$ )



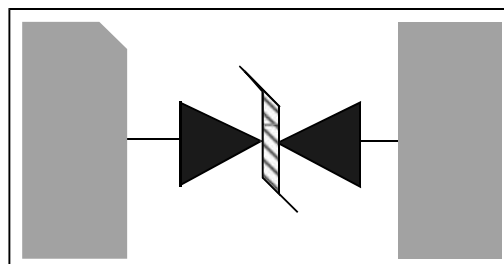
## »Applications

- USB3.0,HDMI2.0,Thunderbolt
- Notebooks, Desktops, and Servers
- Portable Instrumentation

## »Mechanical Data

- DFN0603package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

## »Schematic & PIN Configuration



**DFN0603**

»Absolute Maximum Rating

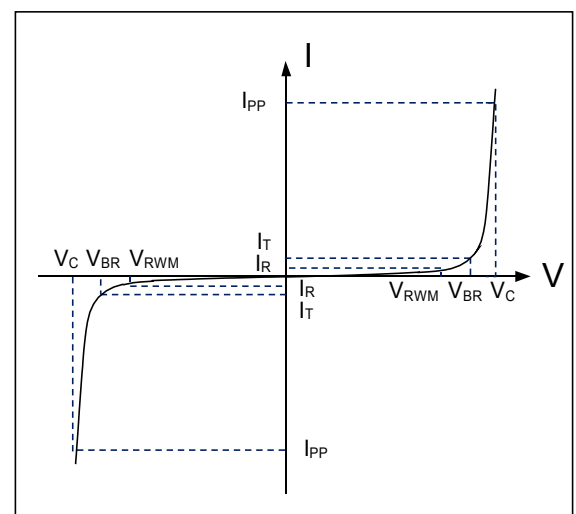
| Rating   | Symbol    | Value          | Units       |
|--|-----------|----------------|-------------|
| Peak Pulse Power ( $t_p=8/20\mu s$ )                           | $P_{PP}$  | 60             | Watts       |
| Peak Pulse Current ( $t_p=8/20\mu s$ )(note1)                  | $I_{pp}$  | 3.0            | A           |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | $V_{ESD}$ | 20<br>15       | kV          |
| Lead Soldering Temperature                                     | $T_L$     | 260(10seconds) | $^{\circ}C$ |
| Junction Temperature   | $T_J$     | -55 to + 125   | $^{\circ}C$ |
| Storage Temperature  | $T_{stg}$ | -55 to + 125   | $^{\circ}C$ |

»Electrical Characteristics

| Parameter                 | Symbol    | Conditions                   | Min | Typical | Max  | Units |
|---------------------------|-----------|------------------------------|-----|---------|------|-------|
| Reverse Stand-Off Voltage | $V_{RWM}$ |                              |     |         | 5.0  | V     |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T=1mA$                    | 5.5 | 8.5     |      | V     |
| Reverse Leakage Current   | $I_R$     | $V_{RWM}=5V, T=25^{\circ}C$  |     | 5       | 100  | nA    |
| Peak Pulse Current        | $I_{PP}$  | $t_p=8/20\mu s$              |     |         | 3.0  | A     |
| Clamping Voltage          | $V_C$     | $I_{PP}=3.0A, t_p=8/20\mu s$ |     | 20      | 25   | V     |
| Junction Capacitance      | $C_j$     | $V_R = 0V, f = 1MHz$         |     | 0.2     | 0.26 | pF    |

»Electrical Parameters (TA = 25°C unless otherwise noted)

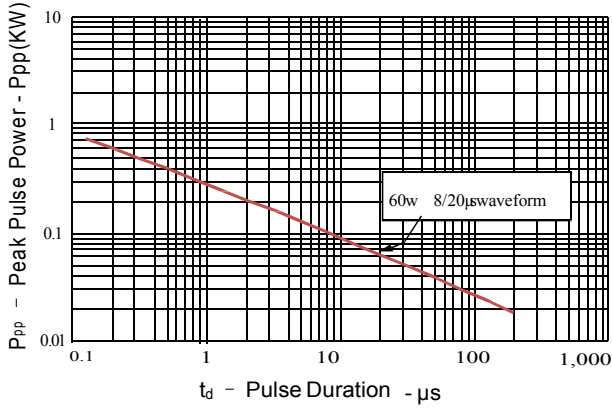
| Symbol    | Parameter                                   |
|-----------|---|
| $I_{PP}$  | Maximum Reverse Peak Pulse Current          |
| $V_C$     | Clamping Voltage @ $I_{PP}$                 |
| $V_{RWM}$ | Working Peak Reverse Voltage                |
| $I_R$     | Maximum Reverse Leakage Current @ $V_{RWM}$ |
| $V_{BR}$  | Breakdown Voltage @ $I_T$                   |
| $I_T$     | Test Current                                |
|           |   |
|           |   |



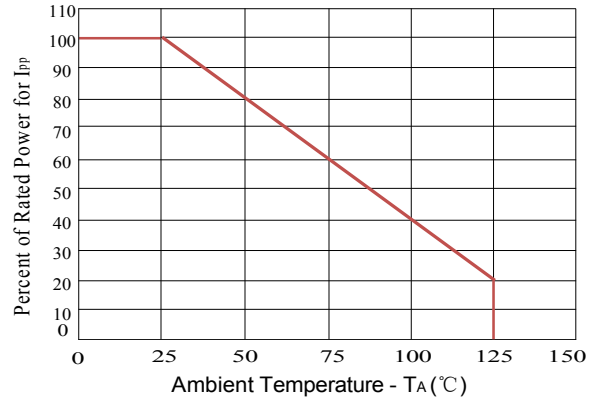
Note: 8/20μs pulsed waveform.

»Typical Characteristics

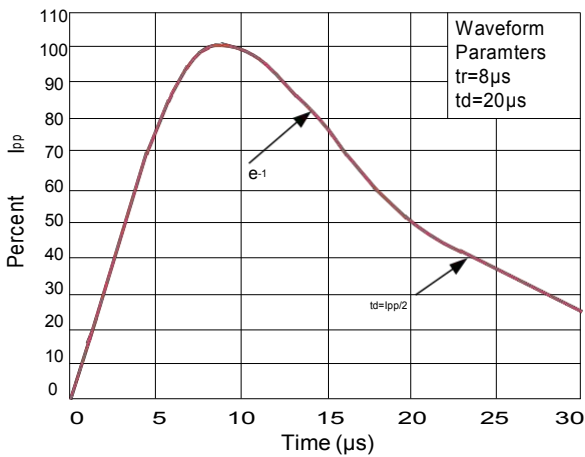
**Figure 1: Peak Pulse Power vs. Pulse Time**



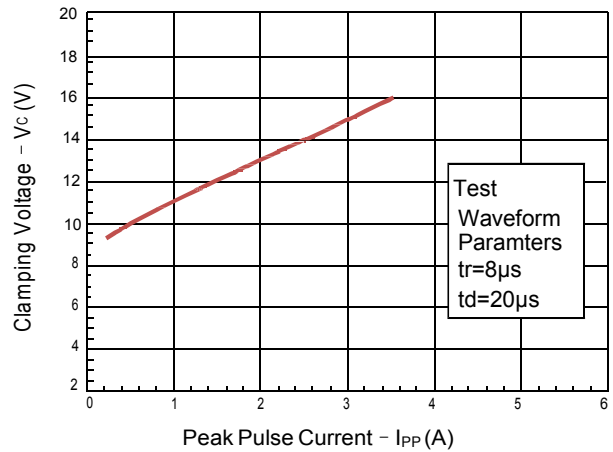
**Figure 2: Power Derating Curve**



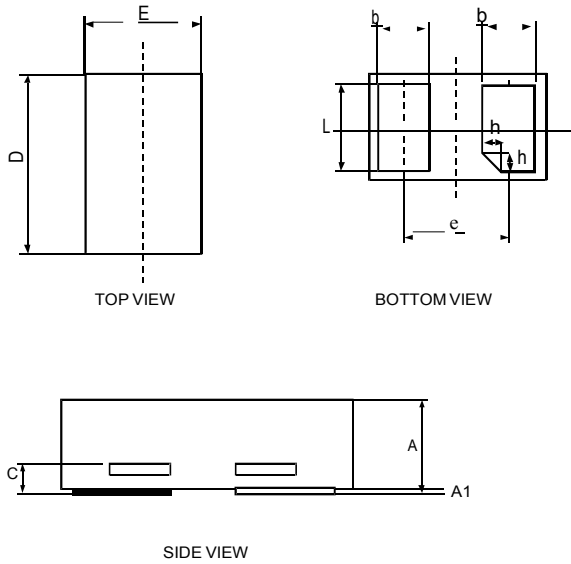
**Figure3: Pulse Waveform**



**Figure 4: Clamping Voltage vs.Ipp**

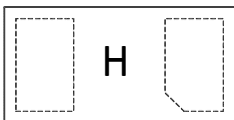


»Outline Drawing –DFN0603



| Symbol | Dimensions in millimeters |      |      |
|--------|---------------------------|------|------|
|        | Min                       | Nom  | Max  |
| A      | 0.28                      | 0.30 | 0.32 |
| A1     | 0.00                      | 0.02 | 0.05 |
| C      | 0.05                      | 0.10 | 0.15 |
| D      | 0.55                      | 0.60 | 0.65 |
| E      | 0.25                      | 0.30 | 0.35 |
| b      | 0.14                      | 0.19 | 0.24 |
| L      | 0.20                      | 0.25 | 0.30 |
| h      | 0                         | 0.05 | 0.10 |

»Marking



»Ordering information

| Order code     | Package | Base qty | Deliverymode  |
|----------------|---------|----------|---------------|
| PESD5V0F1BSF-N | DFN0603 | 10k      | Tape and reel |

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