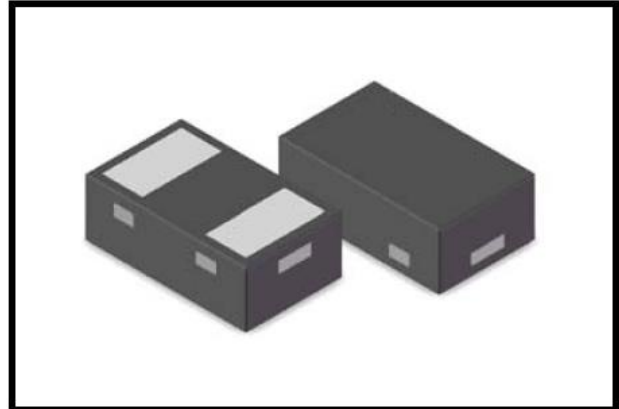


PT05EFC – ESD Protection Diode

Feature

- 80 Watts peak pulse power (8/20 μ s)
- Bidirectional configurations
- Solid state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- IEC61000-4-2 (ESD) \pm 30kV (Air), \pm 30kV (Contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning): 8A (8/20 μ s)



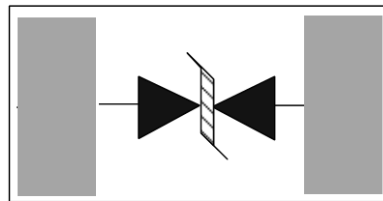
Applications

- Cell Phone Handsets and Accessories
- Micro processor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops and Servers
- Portable Instrumentation

Mechanical Data

- DFN0603 package
- Molding compound flammability rating: UL94 V-0
- Tape and Reel Packaging
- RoHS/WEEE Compliant

Schematic and PIN Configuration



DFN0603

Maximum Rating

| Parameter | Symbol | Limit | Unit |
|---|-----------------|----------|--------------|
| IEC61000-4-2 ESD Voltage – Air Mode | $V_{ESD}^{(1)}$ | \pm 30 | kV |
| IEC61000-4-2 ESD Voltage – Contact Mode | | \pm 30 | |
| Peak Pulse Power | $P_{PP}^{(2)}$ | 80 | W |
| Peak Pulse Current | $I_{PP}^{(2)}$ | 8 | A |
| Maximum Lead Solder Temperature (10 seconds duration) | T_L | 260 | $^{\circ}$ C |
| Junction Temperature | T_J | -55~125 | $^{\circ}$ C |
| Storage Temperature Range | T_{stg} | -55~125 | $^{\circ}$ C |

Note:

1. Device stressed with ten non-repetitive ESD pulses.
2. Non-repetitive current pulse 8/20 μ s exponential decay waveform according to IEC61000-4-5.
3. All ratings are measured at environmental temperature of TA = 25 $^{\circ}$ C unless otherwise noted.

PT05EFC – ESD Protection Diode

Electrical Characteristics

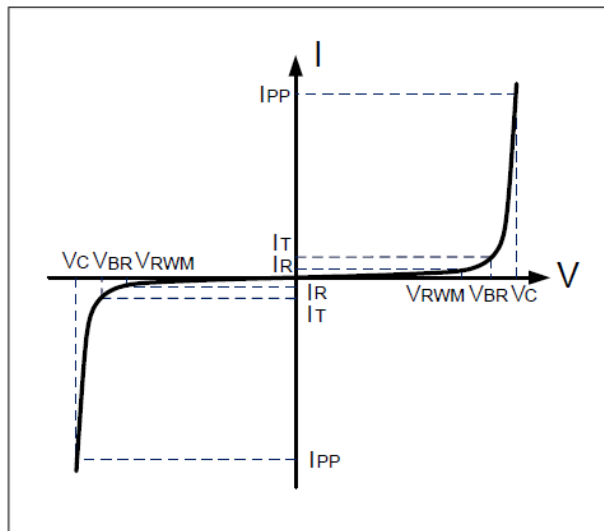
| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---------------------------|-----------------|------------------------------------|-----|-----|-----|---------------|
| Reverse Stand-off Voltage | $V_{RWM}^{(1)}$ | | | | 5.0 | V |
| Reverse Breakdown Voltage | V_{BR} | $I_T = 1\text{mA}$ | 6.5 | | | V |
| Reverse Leakage Current | I_R | $V_{RWM} = 5\text{V}$ | | | 0.5 | μA |
| Clamping Voltage | $V_C^{(2)}$ | $I_{PP} = 8\text{A}$ | | 10 | 13 | V |
| Junction Capacitance | C_J | $V_R = 0\text{V}, f = 1\text{MHz}$ | | 20 | 25 | pF |

Note:

1. Other voltages available upon request.
2. Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.
3. All ratings are measured at environmental temperature of $T_A = 25^\circ\text{C}$ unless otherwise noted.

Electrical Parameters

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



PT05EFC – ESD Protection Diode

Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

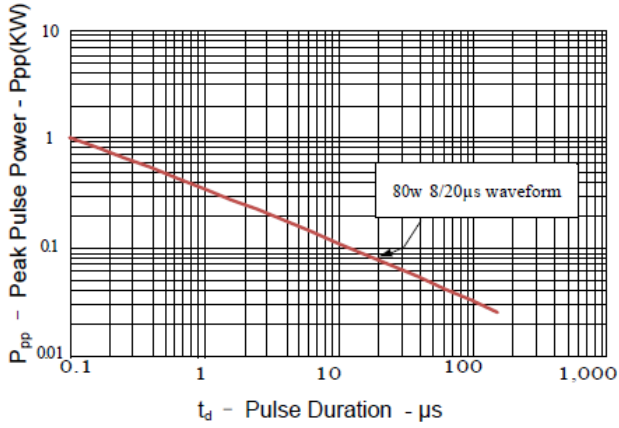


Figure 2: Power Derating Curve

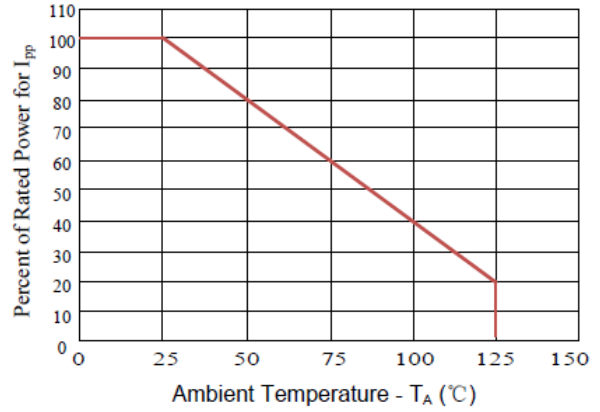


Figure 3: Pulse Waveform

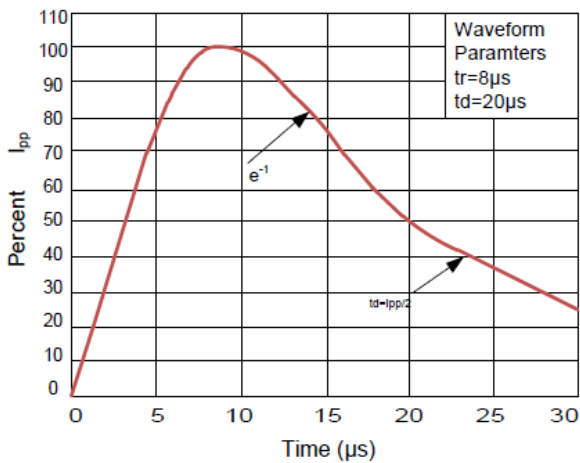
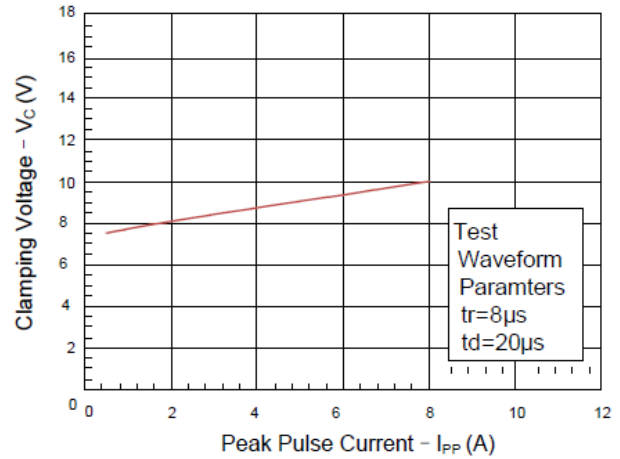
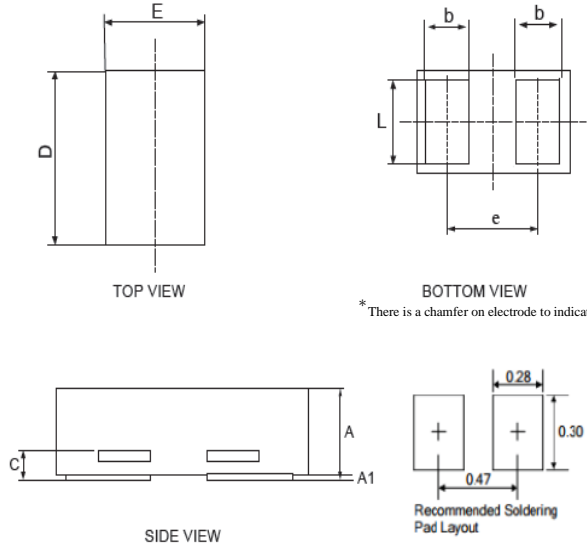


Figure 4: Clamping Voltage vs. I_pp



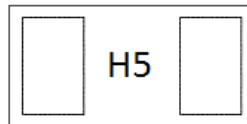
PT05EFC – ESD Protection Diode

DFN0603 Package Outline Dimensions



| Symbol | Dimensions (mm) | | |
|--------|-----------------|------|------|
| | Min | Typ | Max |
| A | 0.28 | 0.30 | 0.34 |
| 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 |
| e | 0.40 | | |
| b | 0.13 | 0.19 | 0.24 |
| L | 0.20 | 0.25 | 0.30 |

Marking



Packaging Information

| Order Code | Packaging | Reel Size | PCS/Reel |
|------------|-----------|-----------|----------|
| PT05EFC | DFN0603 | 7 inch | 10,000 |