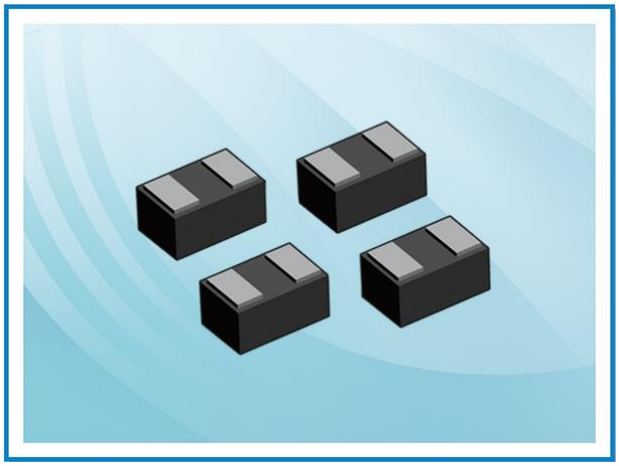
# PT2421NT – ESD Protection Diode

## Feature

- 240 Watts peak pulse power (8/20μs)
- Bidirectional configurations
- Solid state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Protection one data line
- IEC61000-4-2 (ESD) ±25kV (Air), ±25kV (Contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning): 6A (8/20μs)



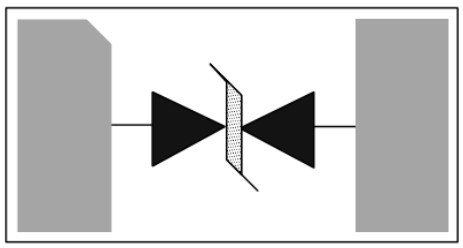
## Applications

- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops and Servers
- Portable Instrumentation

## Mechanical Data

- DFN1006 package
- Molding compound flammability rating: UL94 V-0
- Tape and Reel Packaging
- RoHS/WEEE Compliant

## Schematic and PIN Configuration



DFN1006

## Maximum Rating

| Parameter | Symbol | Limit | Unit |
|---|---|---|---|
| IEC61000-4-2 ESD Voltage – Air Mode | $V_{ESD}$(1) | ±25 | kV |
| IEC61000-4-2 ESD Voltage – Contact Mode | | ±25 | |
| Peak Pulse Power | $P_{PP}$(2) | 240 | W |
| Peak Pulse Current | $I_{PP}$(2) | 6 | A |
| Maximum Lead Solder Temperature (10 seconds duration) | $T_L$ | 260 | °C |
| Junction Temperature | $T_J$ | -55~125 | °C |
| Storage Temperature Range | $T_{stg}$ | -55~125 | °C |

Note:

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

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## Electrical Characteristics

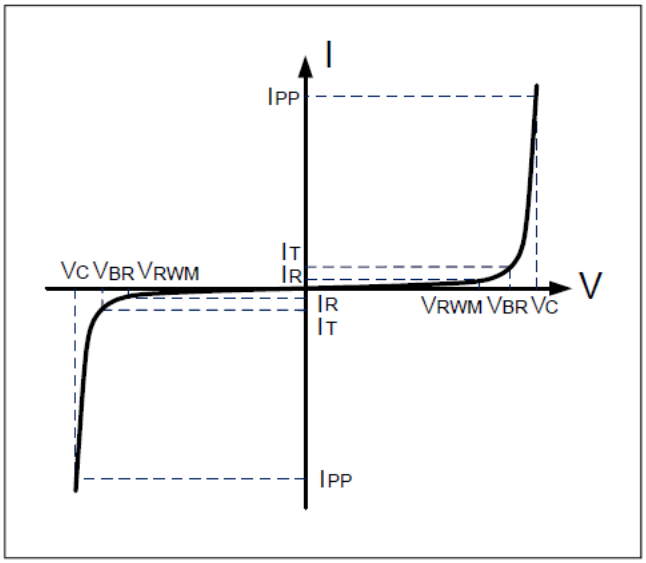
| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Reverse Stand-off Voltage | $V_{RWM}$(1) | | | | 24 | V |
| Reverse Breakdown Voltage | $V_{BR}$ | $I_T$ = 1mA | 26.7 | | | V |
| Reverse Leakage Current | $I_R$ | $V_{RWM}$ = 24V | | 0.1 | 0.5 | μA |
| Peak Pulse Current | $I_{PP}$ | | | | 6.0 | A |
| Clamping Voltage | $V_C$(2) | $I_{PP}$ = 6A | | | 44 | V |
| Junction Capacitance | $C_J$ | $V_R$ = 0V, f = 1MHz | | 15 | 20 | pF |

Note:

1. Other voltages available upon request.
2. Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5.
3. All ratings are measured at environmental temperature of $T_A$ = 25°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 |



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## Typical Characteristics

**Fig.1 Peak Pulse Power Rating Curve**

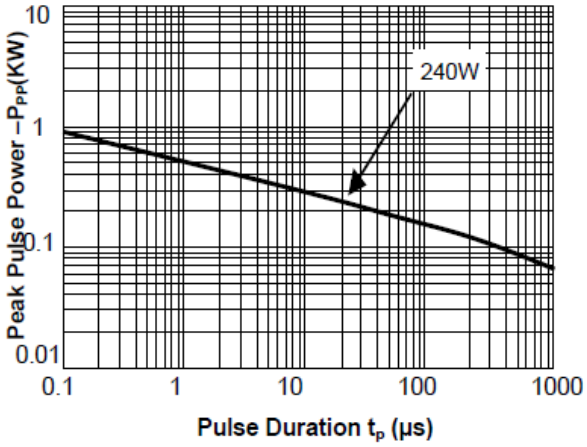



**Fig.2 Pulse Derating Curve**

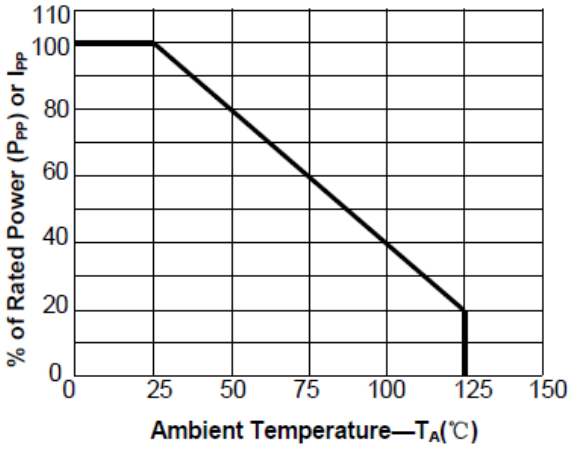



**Fig.3 Pulse Waveform-8/20μs**

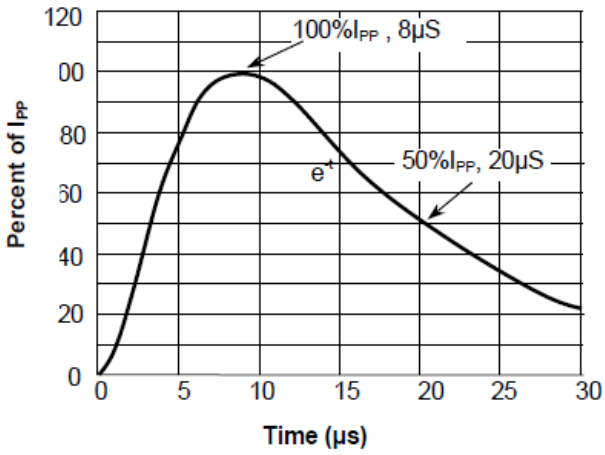



**Fig.4 Pulse Waveform-ESD(IEC61000-4-2)**

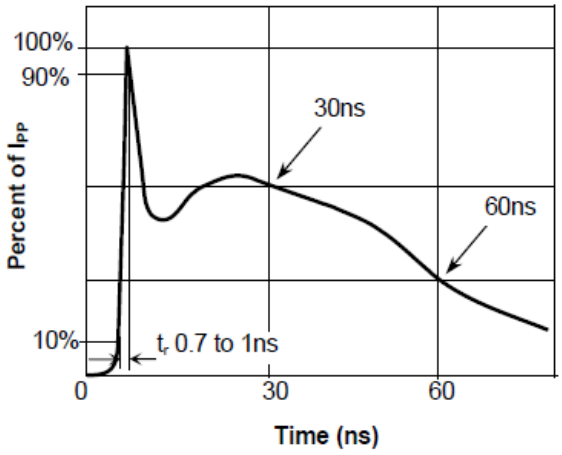
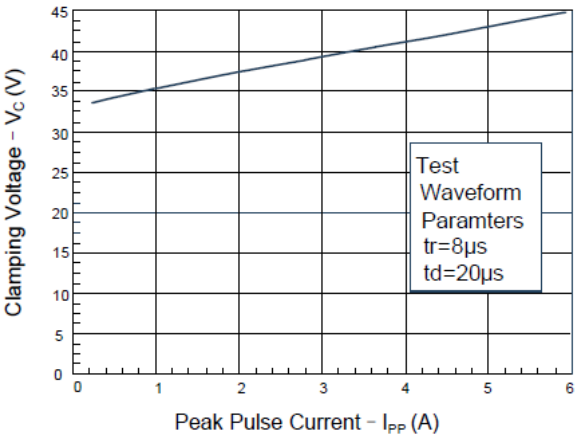
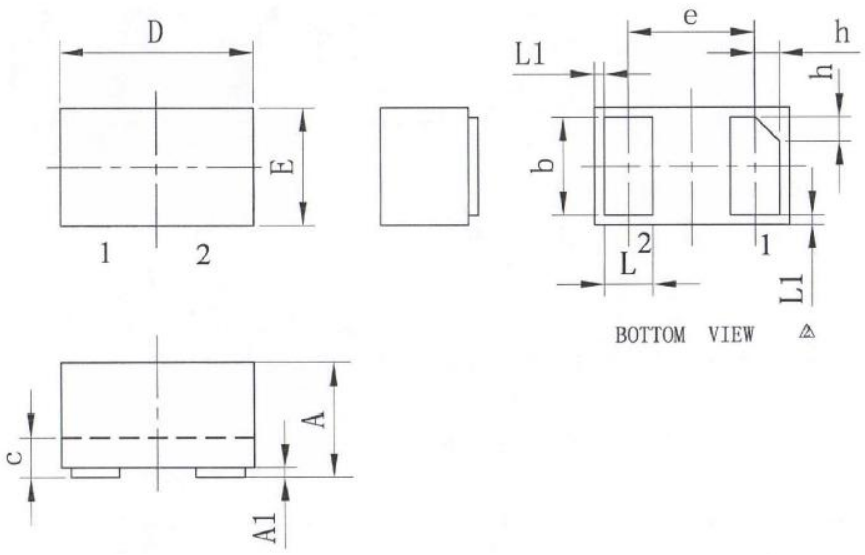



**Fig.5 Clamping Voltage vs.Ipp**



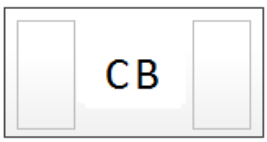
# PT2421NT – ESD Protection Diode

## DFN1006 Package Outline Dimensions




| Symbol | Dimensions (mm) | | |
|---|---|---|---|
| | Min | Typ | Max |
| A | 0.45 | 0.50 | 0.55 |
| A1 | 0.00 | 0.02 | 0.05 |
| b | 0.45 | 0.50 | 0.55 |
| c | 0.12 | 0.15 | 0.18 |
| D | 0.95 | 1.00 | 1.05 |
| e | | 0.65 BSC | |
| E | 0.55 | 0.60 | 0.65 |
| L | 0.20 | 0.25 | 0.30 |
| L1 | | 0.05 REF | |
| h | 0.07 | 0.12 | 0.17 |

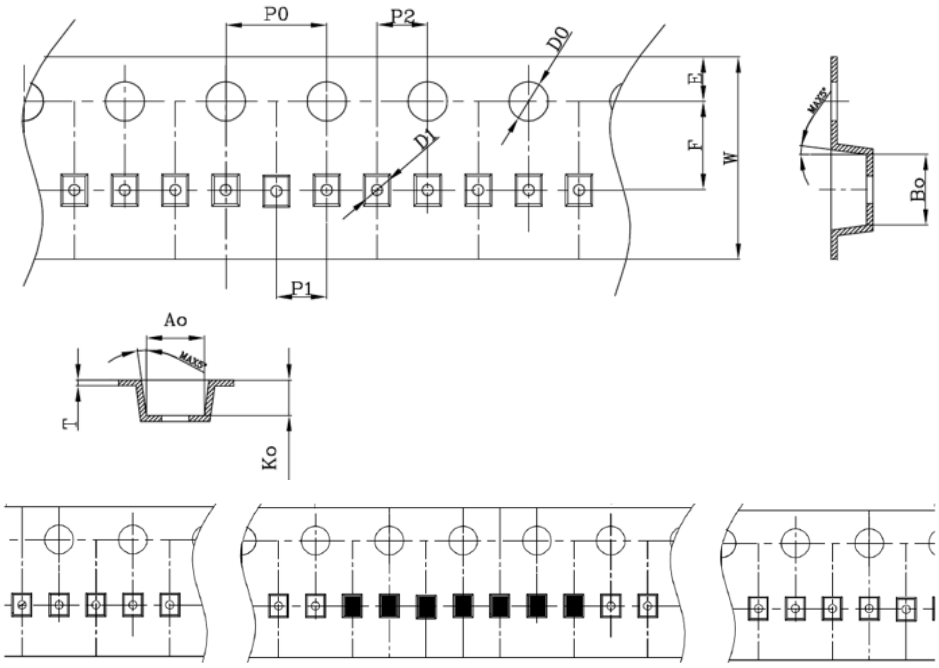
## Marking



# PT2421NT – ESD Protection Diode

## Packaging Information

| Order Code | Packaging | Reel Size | PCS/Reel |
|---|---|---|---|
| PT2421NT | DFN1006 | 7 inch | 10,000 |




| Symbol | Dimension (mm) |
|---|---|
| A0 | 0.69±0.05 |
| B0 | 1.19±0.05 |
| K0 | 0.66±0.05 |
| P0 | 4.00±0.10 |
| P1 | 2.00±0.05 |
| P2 | 2.00±0.05 |
| T | 0.20±0.02 |
| E | 1.75±0.10 |
| F | 3.50±0.05 |
| D0 | 1.55±0.05 |
| D1 | 0.50±0.10 |
| W | 8.00±0.10 |