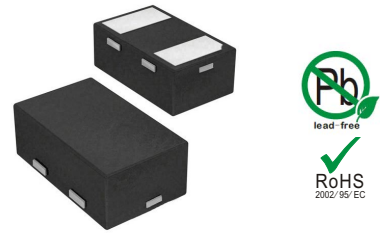


Features

- Ultra small package: 1.6x1.0x0.5mm
- Protects one data or power line
- Working voltage: 4.5V
- 2-pin leadless package
- RoHS compliant



IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 $\pm 30\text{kV}$ contact $\pm 30\text{kV}$ air
- IEC 61000-4-5 (Lightning) 135A (8/20 μs)

DFN1610

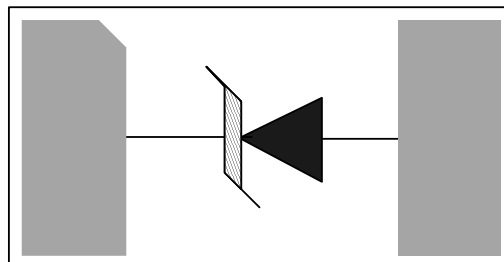
Applications

- Mobile Phones
- Battery Protection
- Power Line Protection
- Vbat pin for Mobile Devices
- Hand Held Portable Applications

Mechanical Characteristics

- Package: DFN1610-2 (1.6x1.0x0.5mm)
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below

Schematic & PIN Configuration



DFN1610

Absolute Maximum Rating (TA=25°C, RH=45%-75%, unless otherwise noted)

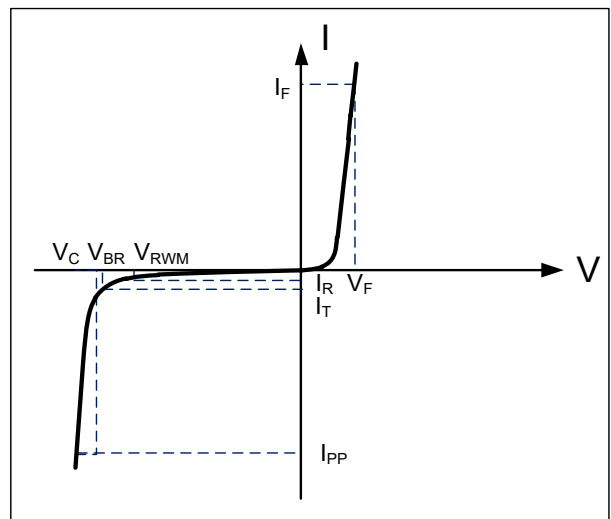
| Parameter | Symbol | Value | Unit |
|---------------------------------------|------------------|-------------|------|
| Peak Pulse Power (tp=8/20µs waveform) | P _{pp} | 2500 | W |
| Peak Pulse Current (8/20µs) | I _{pp} | 135 | A |
| ESD per IEC 61000-4-2 (Air) | V _{ESD} | ±30 | kV |
| ESD per IEC 61000-4-2 (Contact) | | ±30 | |
| Operating Temperature Range | T _J | -55 to +125 | °C |
| Storage Temperature Range | T _{stg} | -55 to +150 | °C |

Electrical Characteristics(TA=25°C)

| Parameter | Test Condition | Symbol | Min | Typ | Max | Unit |
|-------------------------|---|------------------|-----|-----|-----|------|
| Reverse Working Voltage | | V _{RWM} | | | 4.5 | V |
| Breakdown Voltage | I _T = 1mA | V _{BR} | 4.8 | | | V |
| Reverse Leakage Current | V _{RWM} = 4.5V | I _R | | | 0.2 | µA |
| Clamping Voltage | I _{PP} = 10A (8 x 20µs pulse) | V _C | | | 7 | V |
| Clamping Voltage | I _{PP} = 135A (8 x 20µs pulse) | V _C | | | 18 | V |
| Junction Capacitance | V _R = 0V, f = 1MHz | C _J | | | 750 | pF |

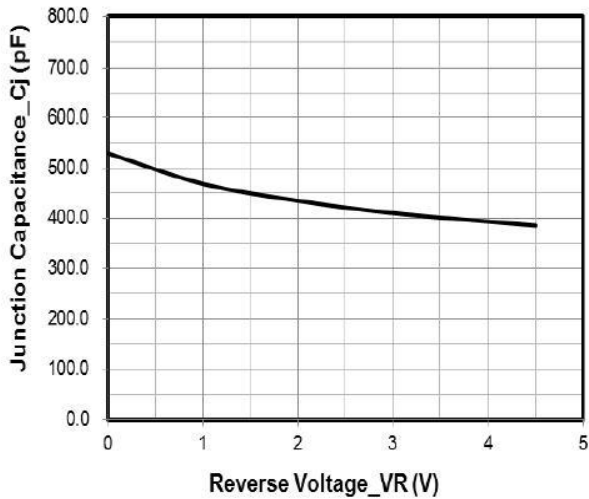
Electrical Parameters (TA = 25°C unless otherwise noted)

| 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 |

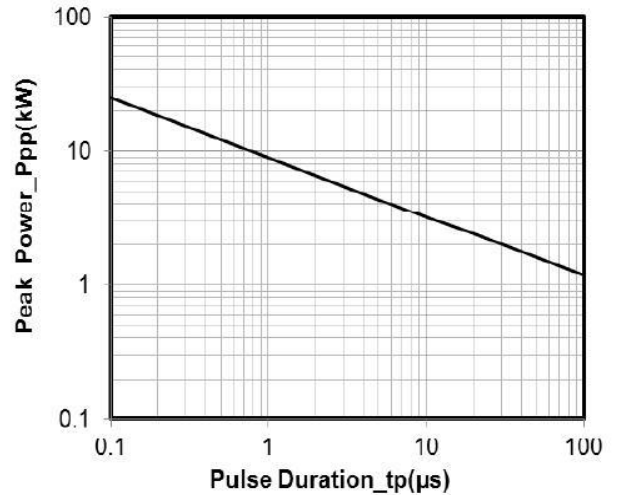


Note: 8/20µs pulse waveform.

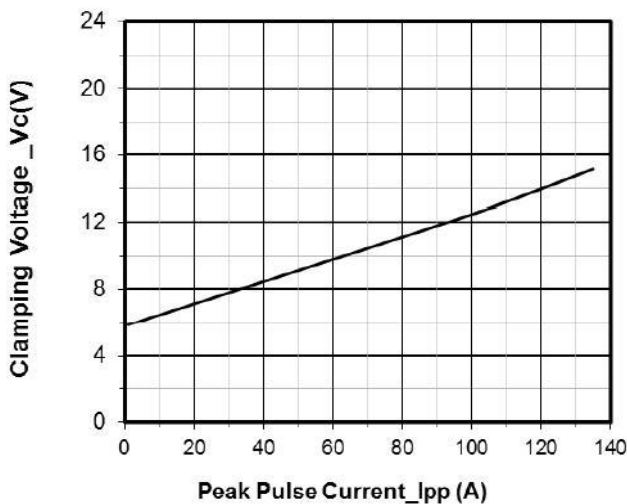
Typical Performance Characteristics(TA=25°C unless otherwise Specified)



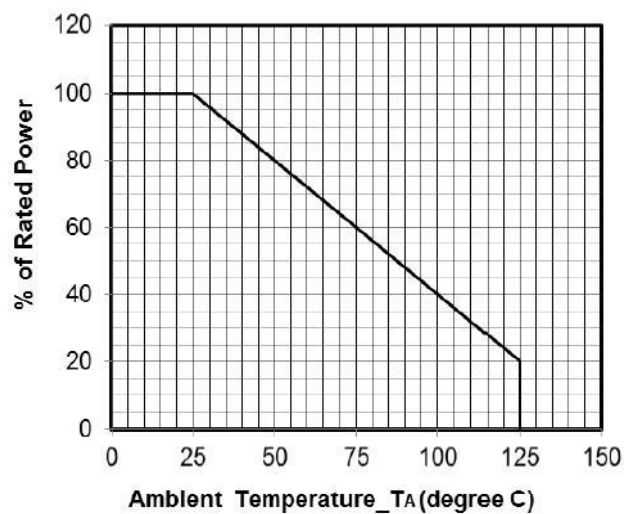
Junction Capacitance vs. Reverse Voltage



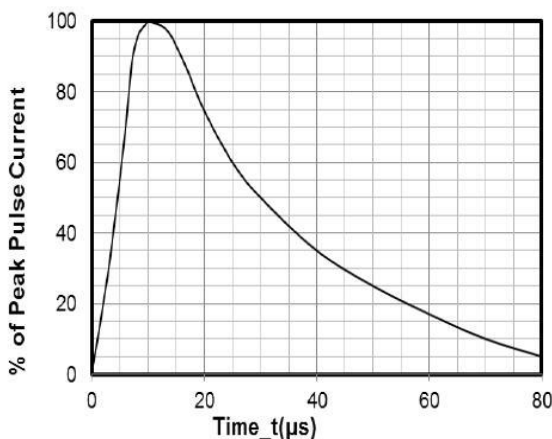
Peak Pulse Power vs. Pulse Time



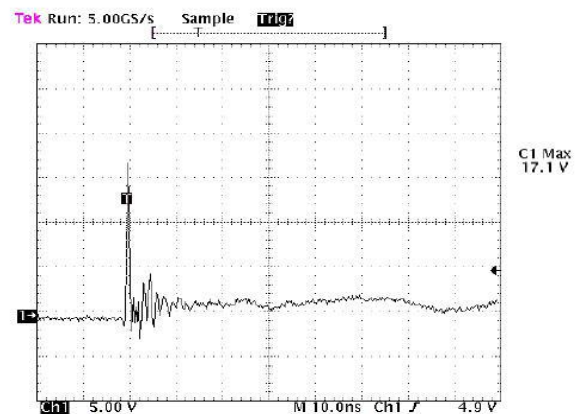
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform



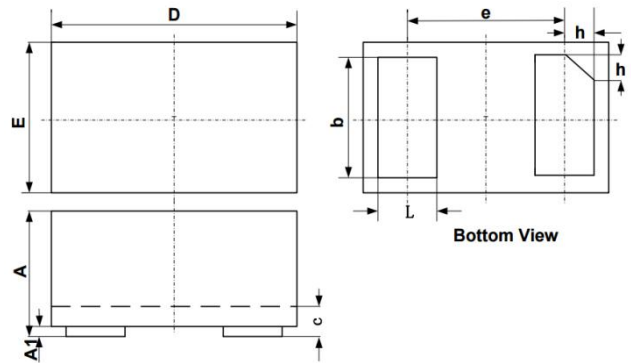
Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

+8 kV Contact per IEC61000-4-2

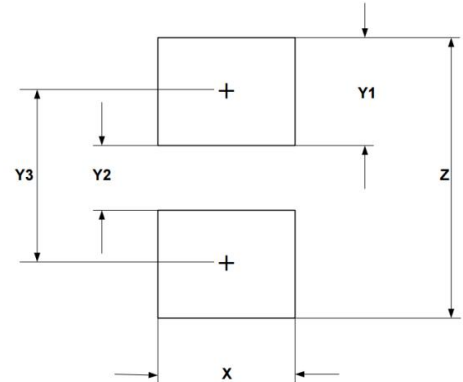
Package Mechanical Data

| SYM | DIMENSIONS | | | | | |
|-----|-------------|------|------|-----------|-------|-------|
| | MILLIMETERS | | | INCHES | | |
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.45 | 0.50 | 0.55 | 0.018 | 0.020 | 0.022 |
| A1 | 0.00 | 0.02 | 0.05 | 0.000 | 0.001 | 0.002 |
| b | 0.75 | 0.80 | 0.85 | 0.030 | 0.032 | 0.034 |
| c | 0.10 | 0.15 | 0.20 | 0.004 | 0.006 | 0.007 |
| D | 1.55 | 1.60 | 1.65 | 0.062 | 0.064 | 0.066 |
| e | 1.10 BSC | | | 0.044 BSC | | |
| E | 0.95 | 1.00 | 1.05 | 0.038 | 0.040 | 0.042 |
| L | 0.35 | 0.40 | 0.45 | 0.014 | 0.016 | 0.018 |
| h | 0.15 | 0.20 | 0.25 | 0.006 | 0.008 | 0.010 |

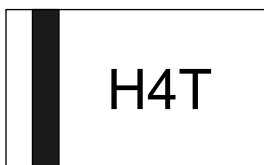


Suggested Land Pattern

| SYM | DIMENSIONS | |
|-----|-------------|--------|
| | MILLIMETERS | INCHES |
| X | 1.00 | 0.040 |
| Y1 | 0.62 | 0.025 |
| Y2 | 0.60 | 0.024 |
| Y3 | 1.22 | 0.049 |
| Z | 1.85 | 0.074 |



Marking



Pin Style: 1. Cathode 2. Anode

Ordering information

| Order code | Package | Base qty | Delivery mode |
|------------------|---------|----------|---------------|
| PTN162H750S4C250 | DFN1610 | 3k | Tape and reel |