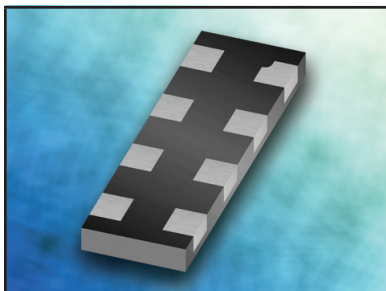


ULTRA LOW CAPACITANCE TVS ARRAY



DFN-8 PACKAGE

DESCRIPTION

The PLR2512H is an ultra low capacitance TVS array designed to protect high speed applications such as Gigabit Ethernet and other computer interfaces. The device is available in the space-saving DFN-8 package configuration, which minimizes lead inductance to prevent overshoot voltages during high ESD current events. The PLR2512H meets the IEC 61000-4-2 and 61000-4-4 requirements.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air $\pm 15\text{kV}$, Contact $\pm 8\text{kV}$
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- 100 Watts Peak Pulse Power per Line ($t_p = 8/20\mu\text{s}$)
- ESD Protection > 25 kilovolts
- Protects Two Line Pairs
- Low Leakage Current: 10nA
- Ultra Low Capacitance: 3pF Typical
- Low Stand-Off Voltage: 2.5V
- RoHS Compliant
- REACH Compliant

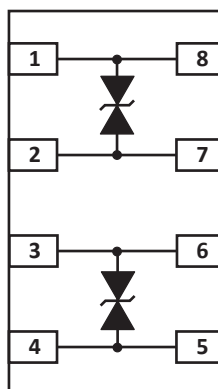
APPLICATIONS

- Gigabit Ethernet
- Integrated Magnetics/RJ-45 Connectors
- LAN/WAN Equipment
- Security Cameras
- Industrial Controls
- Notebooks and Desktop Computers

MECHANICAL CHARACTERISTICS

- Molded DFN-8 Package
- Approximate Weight: 3 milligrams
- Lead-Free Nickel Paladium Gold Plating
- Solder Reflow Temperature - 260-270°C
- Flammability Rating UL 94V-0
- 8mm Tape and Reel per EIA Standard 481

PIN CONFIGURATION



TYPICAL DEVICE CHARACTERISTICS
MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

| PARAMETER | SYMBOL | VALUE | UNITS |
|-----------------------------------------------|------------------|------------|-------|
| Peak Pulse Power (tp = 8/20μs) - See Figure 1 | P _{PP} | 100 | Watts |
| Peak Pulse Current (tp = 8/20μs) | I _{PP} | 12 | Amps |
| Operating Temperature | T _L | -55 to 150 | °C |
| Storage Temperature | T _{STG} | -55 to 150 | °C |

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

| PART NUMBER | DEVICE MARKING | RATED STAND-OFF VOLTAGE V _{WM} VOLTS | MINIMUM BREAKDOWN VOLTAGE @ 2μA V _(BR) VOLTS | MAXIMUM BREAKDOWN VOLTAGE @ 2μA V _(BR) VOLTS | MINIMUM SNAPBACK VOLTAGE I _{SB} @ 50mA V _{SB} VOLTS | MAXIMUM CLAMPING VOLTAGE @ I _P = 10A V _C VOLTS | MAXIMUM CLAMPING VOLTAGE @ I _P = 1A V _C VOLTS | MAXIMUM LEAKAGE CURRENT @ V _{WM} I _D μA | TYPICAL CAPACITANCE @ 2.5V, 1MHz C pF |
|-------------|----------------|---------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------|
| PLR2512 | 512H | 2.5 | 2.7 | 4.6 | 2.8 | 8.0 | 4.8 | 0.05 | 3.0 |

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

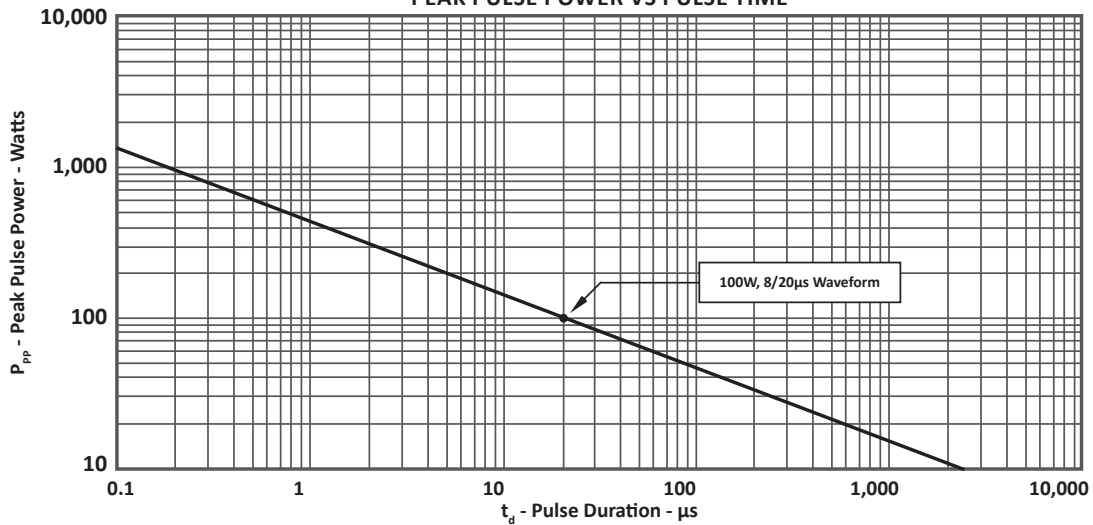


FIGURE 2
PULSE WAVE FORM

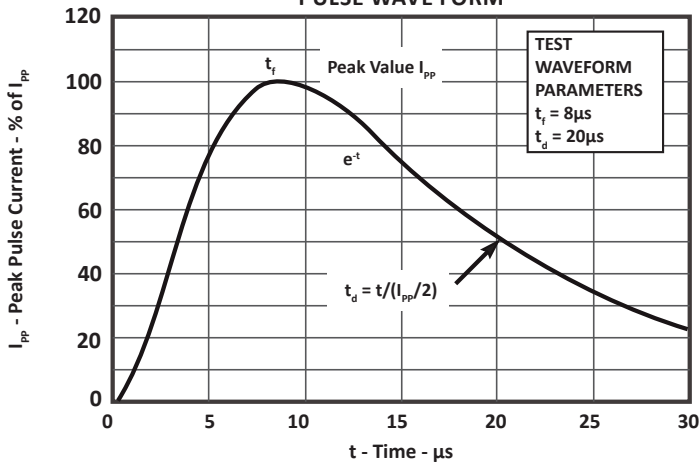
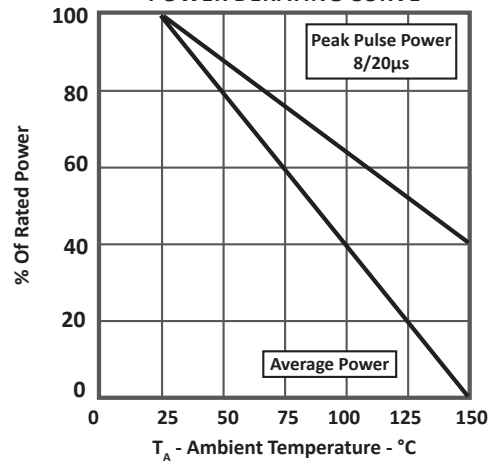


FIGURE 3
POWER DERATING CURVE



SPICE MODEL

FIGURE 1
SPICE MODEL



TABLE 1 - SPICE PARAMETERS

| PARAMETER | UNIT | D1(TVS) | D2(TVS) |
|-----------------|------|----------|----------|
| BV | V | 2.2 | 2.2 |
| IBV | A | 1E-3 | 1E-3 |
| C _{jo} | F | 12E-13 | 12E-13 |
| I _s | A | 1E-20 | 1E-20 |
| V _j | V | 0.7 | 0.7 |
| M | - | 0.05 | 0.05 |
| N | - | 1.1 | 1.1 |
| R _s | Ohms | 0.3 | 0.3 |
| TT | s | 2.541E-9 | 2.541E-9 |
| EG | eV | 1.11 | 1.11 |

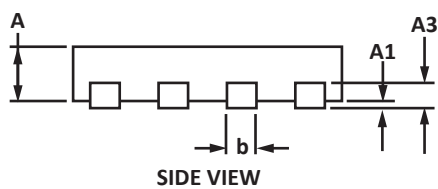
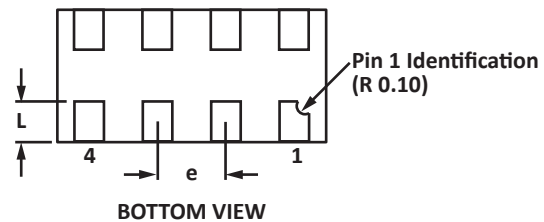
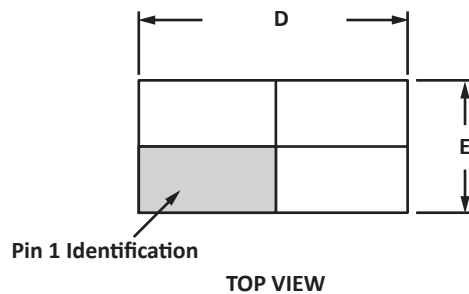
DFN-8 PACKAGE INFORMATION

OUTLINE DIMENSIONS

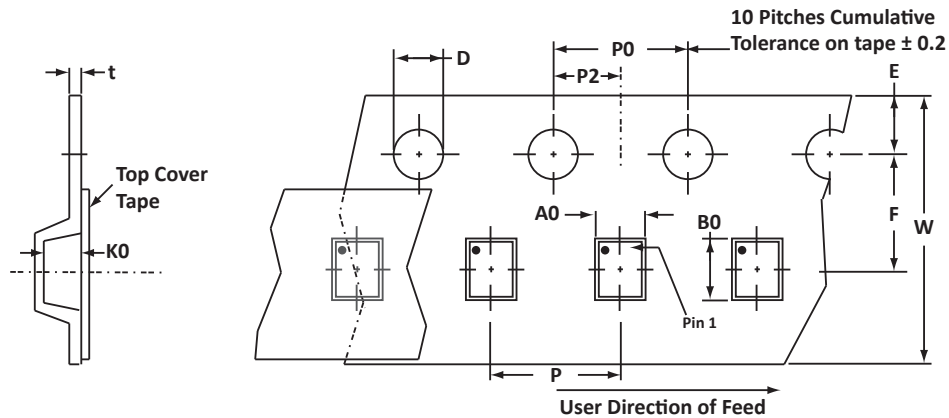
| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|-------|-----------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.36 | 0.42 | 0.014 | 0.017 |
| A1 | 0.00 | 0.05 | 0.00 | 0.002 |
| A3 | 0.127 REF | | 0.005 REF | |
| b | 0.20 | 0.30 | 0.008 | 0.012 |
| D | 1.90 | 2.10 | 0.074 | 0.082 |
| E | 0.90 | 1.10 | 0.035 | 0.043 |
| R | 0.05 | 0.015 | 0.002 | 0.006 |
| e | 0.50 BSC | | 0.020 BSC | |
| L | 0.30 | 0.40 | 0.012 | 0.016 |

NOTES

- Controlling dimension: millimeters.
- Dimensioning and tolerances per ANSI Y14.M, 1985.



TAPE AND REEL



SPECIFICATIONS

| REEL DIA. | TAPE WIDTH | A0 | B0 | K0 | D | E | F | W | P0 | P2 | P | tmax |
|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------|
| 178mm (7") | 8mm | 1.24 ± 0.01 | 2.28 ± 0.01 | 0.65 ± 0.01 | 1.55 ± 0.01 | 1.75 ± 0.01 | 3.50 ± 0.01 | 8.00 ± 0.01 | 4.00 ± 0.01 | 2.00 ± 0.01 | 4.00 ± 0.01 | 0.25 |

NOTES

1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T75 = 7" Reel - 5,000 pieces per 8mm tape.
4. Marking on Part - marking code (see page 2).

ORDERING INFORMATION

| BASE PART NUMBER | LEADFREE SUFFIX | TAPE SUFFIX | QTY/REEL | REEL SIZE | TUBE QTY |
|------------------|-----------------|-------------|----------|-----------|----------|
| PLR2512H | N/A | -T75 | 5,000 | 7" | n/a |

This device is only available in a Lead-Free configuration.

COMPANY INFORMATION

COMPANY PROFILE

In business more than 25 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection and overcurrent protection components. These include transient voltage suppressor array (TVS arrays) avalanche breakdown diode, steering diode TVS array and electronics SMD chip fuses. These components deliver circuit protection in electronic systems from numerous overvoltage and overcurrent events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices also offers LED wafer die for ESD protection and related high frequency products. ProTek Devices is ISO 9001:2015 certified.

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