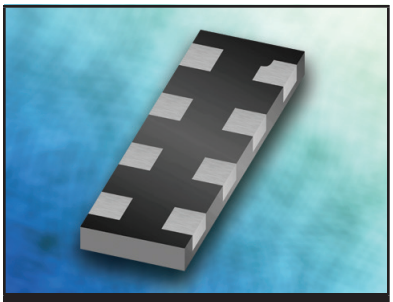
ULTRA LOW CAPACITANCE TVS ARRAY



DFN-8 PACKAGE

DESCRIPTION

The PLRxx12 are ultra low capacitance TVS arrays designed to protect high speed applications such as Gigabit Ethernet and other computer interfaces. This series is available in the space-saving DFN-8 package configuration, which minimizes lead inductance to prevent overshoot voltages during high ESD current events. The PLRxx12 meets the IEC 61000-4-2 and 61000-4-4 requirements.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air 15kV, Contact 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- 100 Watts Peak Pulse Power per Line(tp = 8/20µs)
- ESD Protection > 25 kilovolts
- Protects Two Line Pairs
- Low Leakage Current: 10nA
- Ultra Low Capacitance: 3pF Typical
- Low Stand-Off Voltage: 2.5V & 3.3V
- RoHS Compliant
- REACH Compliant

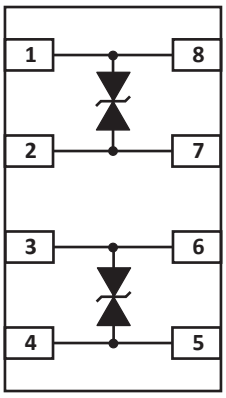
APPLICATIONS

- 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}	10	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	2512	2.5	2.7	4.6	2.8	10.2	4.8	0.05	3.0
PLR3312	3312	3.3	3.5	5.5	3.6	11.0	5.6	0.05	3.0

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

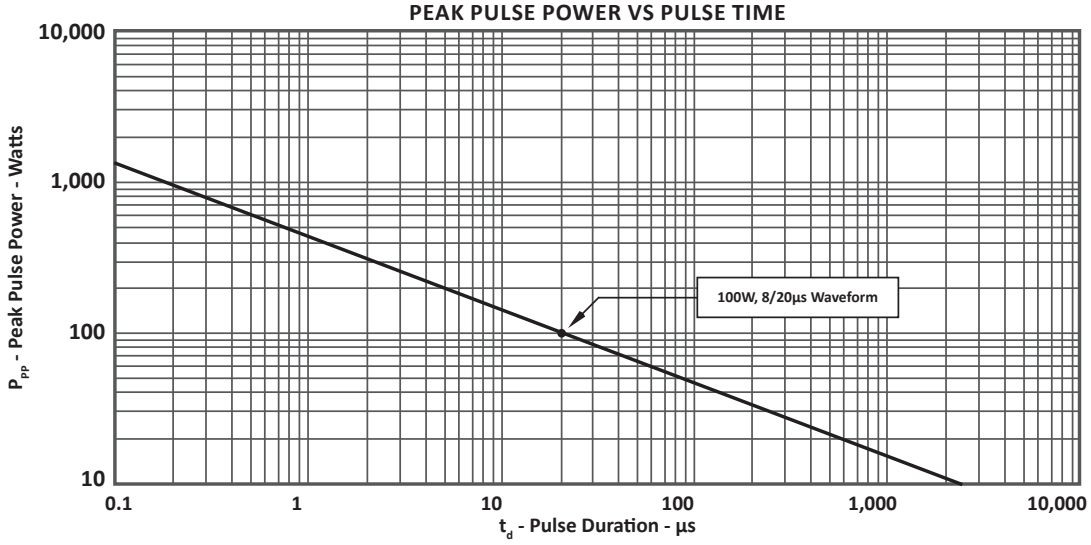


FIGURE 2
PULSE WAVE FORM

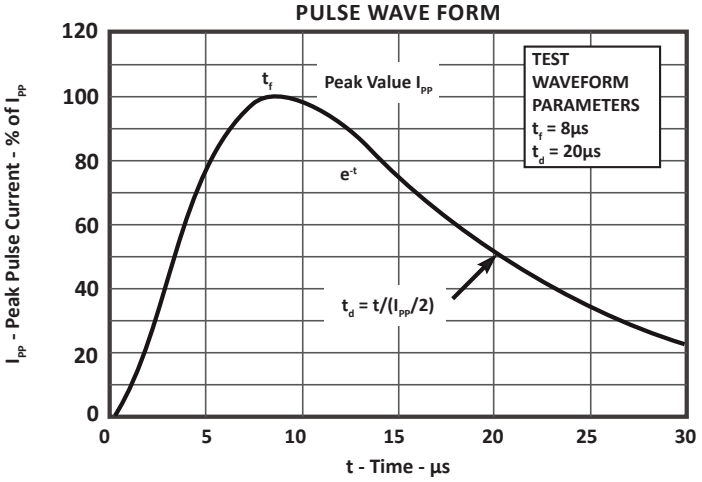
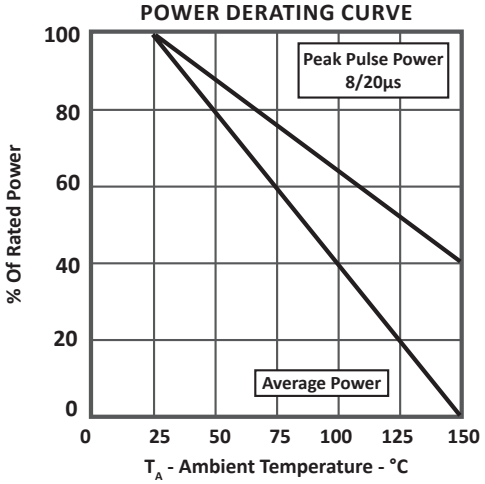


FIGURE 3
POWER DERATING CURVE



SPICE MODEL

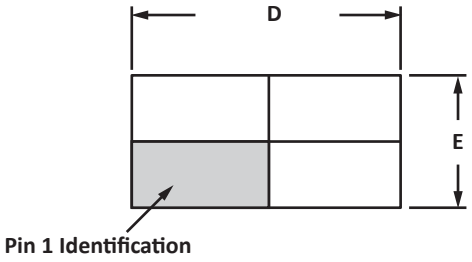
FIGURE 1
SPICE MODEL

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
Vj	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

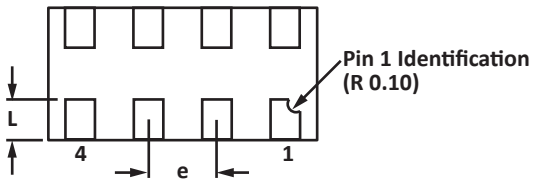
DFN-8 PACKAGE INFORMATION

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	0.12	0.21	0.005	0.008
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

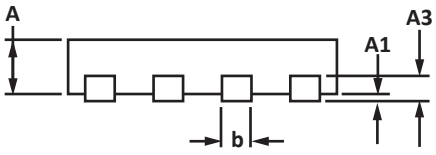
NOTES
1. Controlling dimension: millimeters.
2. Dimensioning and tolerances per ANSI Y14.M, 1985.



TOP VIEW

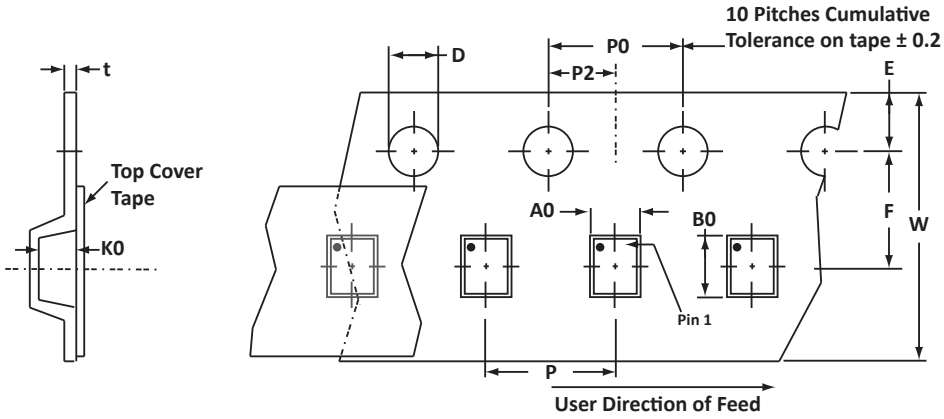


BOTTOM VIEW



SIDE VIEW

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 - T7 = 7" Reel - 5,000 pieces per 8mm tape.
4. Marking on Part - marking code (see page 2).

ORDERING INFORMATION					
BASE PART NUMBER (xx=Voltage)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PLRxx12	N/A	-T7	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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