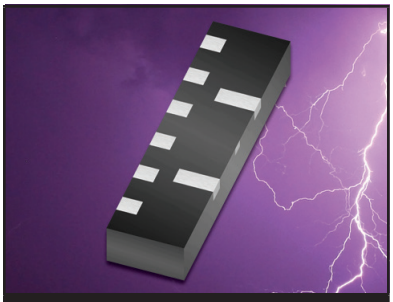
ULTRA LOW CAPACITANCE STEERING DIODE/TVS ARRAY



DFN-8 PACKAGE

DESCRIPTION

The PLR0506LP is an ultra low capacitance steering diode/TVS array. This device is designed to protect computing applications such as gigabit Ethernet, HDMI, USB(1.0-3.0) and DVI interfaces as well as telecommunication equipment and systems. The PLR0506LP is available in the space-saving DFN-8 package configuration.

This device meets the IEC 61000-4-2 (ESD), 61000-4-2 (EFT) and 61000-4-4 (Surge) requirements. At higher operating frequencies or faster edge rates, insertion loss and signal integrity are a major concern. This device in conjunction with passive components integrated into a TVS/filter network can be used for EMI/RFI protection.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A - 5/50ns
- Compatible with IEC 61000-4-5 (Lightning): 4A - 8/20µs
- ESD Protection > 25 kilovolts
- Low Clamping Voltage
- Low Profile
- Protects 6 Lines
- Ultra Low Capacitance : 0.4pF Typical(I/O to I/O)
- RoHS Compliant
- REACH Compliant

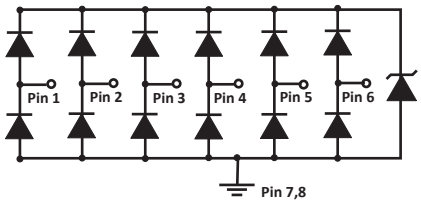
APPLICATIONS

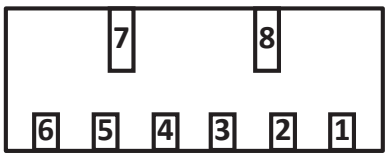
- Gigabit Ethernet
- DVI and HDMI Interfaces
- High-Speed Data Line ESD Protection
- FireWire, SATA & PCIe Interfaces
- USB 1.0, USB 2.0 & USB 3.0

MECHANICAL CHARACTERISTICS

- Molded JEDEC DFN-8 Package
- Approximate Weight: 7 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
  Pure-Tin - Sn, 100: 260-270°C
- 8mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

CIRCUIT DIAGRAM & PIN CONFIGURATION





BOTTOM VIEW

TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp = 8/20µs)	P_{PP}	72	Watts
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 (Note 1) @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 1) (Note 1) @ I_P = 1A V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 1) (Note 1) @ I_P = 4A V_C VOLTS	MAXIMUM LEAKAGE CURRENT (Note 1) @V_{WM} I_D µA	TYPICAL CAPACITANCE (Note 1) @0V, 1MHz $C_{J(SD)}$ pF
PLR0506LP	506LP	5.0	6.0	15.0	18.0	3	0.8

NOTE
1. From I/O Pin to ground.

FIGURE 1
PULSE WAVE FORM

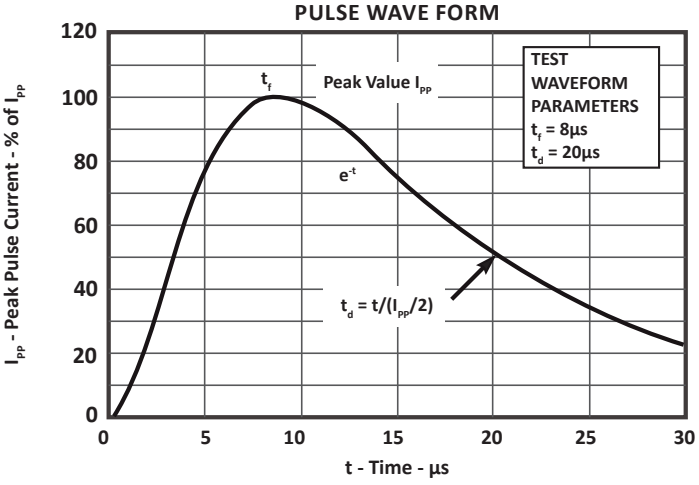
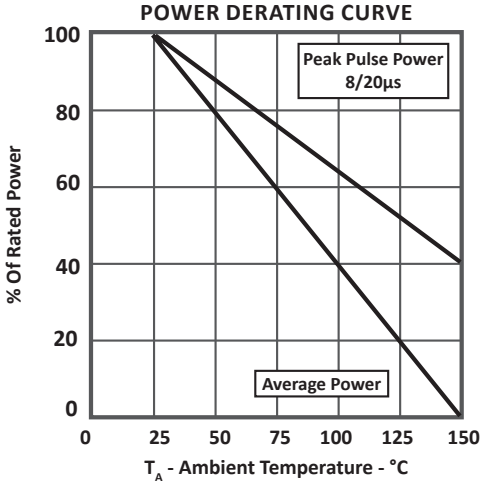


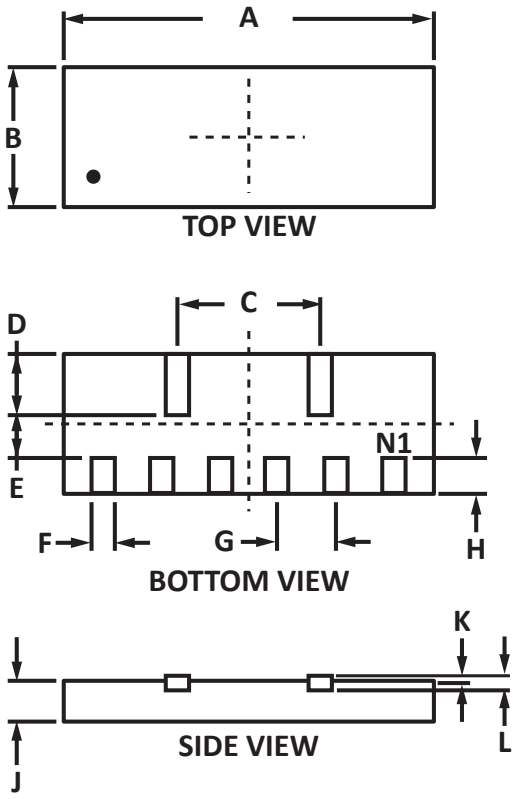
FIGURE 2
POWER DERATING CURVE



DFN-8 PACKAGE INFORMATION

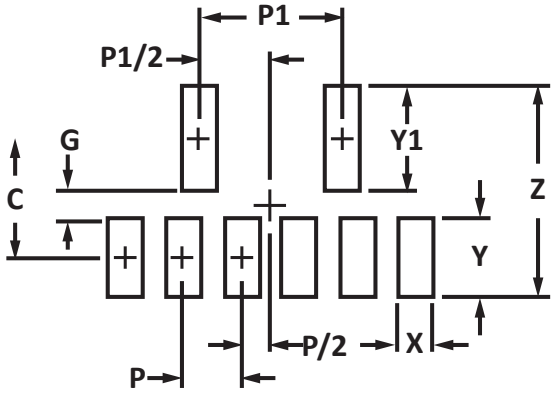
OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	3.224	3.376	0.127	0.133
B	1.224	1.376	0.048	0.054
C	1.250		0.049	
D	0.544	0.696	0.021	0.133
E	0.200	-	0.008	-
F	0.200	0.300	0.008	0.012
G	0.500		0.020	
H	0.304	0.456	0.012	0.018
J	0.381	0.457	0.015	0.018
K	0.000	0.050	0.000	0.002
L	0.127		0.005	

NOTES
1. Controlling dimension: millimeters.

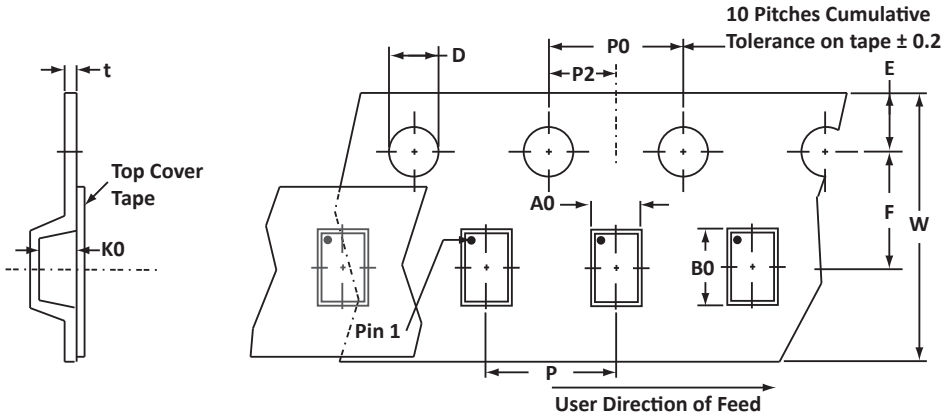


PAD LAYOUT DIMENSIONS		
DIM	MILLIMETERS	INCHES
	NOMINAL	NOMINAL
C	1.05	0.041
G	0.25	0.010
P	0.50	0.020
P1	1.25	0.049
X	0.30	0.012
Y	0.68	0.027
Y1	0.92	0.036
Z	1.85	0.073

NOTES
1. Controlling dimension: millimeters.



TAPE AND REEL



SPECIFICATIONS												
REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	1.81 ± 0.10	3.51 ± 0.10	0.55 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	0.25

NOTES
1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T73 = 7" Reel - 3,000 pieces per 8mm tape.
4. Marking on Part - marking code (see page 2) and pin 1 dot.

ORDERING INFORMATION					
BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PLR0506LP	n/a	-T73	3,000	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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