ULTRA LOW CAPACITANCE STEERING DIODE/TVS ARRAY



DESCRIPTION

The PLR0504PLCN is an ultra low capacitance steering diode/TVS array for 5.0V systems. The 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 PLR0504PLCN is available in the space-saving DFN-10 package configuration and is rated at 250 Watts peak pulse power per line for an 8/20µs waveshape.

The device meets and/or exceed the IEC 61000-4-2 (ESD), 61000-4-4 (EFT) and 61000-4-5 (Surge) requirements. At higher operating frequencies or faster edge rates, insertion loss and signal integrity are a major concern. The PLR-0504PLCN, 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): Contact ±8kV, Air ±15kV
- Compatible with IEC 61000-4-4 (EFT): 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 16A 8/20μs
- 250 Watts Peak Pulse Power per Line (tp = 8/20μs)
- ESD Protection > 25 kilovolts
- Low Leakage Current < 0.5μA
- Protects 4 Lines
- Ultra Low Capacitance: 1.5pF Max (I/O to GND), 1.37pF Typ 0Vdc
- RoHS Compliant
- REACH Compliant

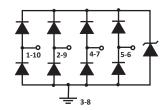
MECHANICAL CHARACTERISTICS

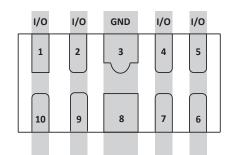
- Molded DFN-10 Package
- Approximate Weight: 7 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
 - Pure-Tin Sn, 100: 260-270°C
- 8mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

APPLICATIONS

- Gigabit Ethernet
- DVI Interface
- High-Speed Data Line ESD Protection
- FireWire, SATA & PCIe Interfaces
- IEEE 1394 to 3.2Gbps
- USB 1.0 3.0 Interfaces
- HDMI 1.4 & 2.0 Interfaces

PIN CONFIGURATION





Note: Pin pairs 1-10, 2-9, 3-8, 4-7 and 5-6 must be connected via their PCB lines for full function/operation, as shown.

TYPICAL DEVICE CHARACTERISTICS

05547

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified							
PARAMETER SYMBOL VALUE UNI							
Operating Temperature	TL	-55 to 150	°C				
Storage Temperature	T,	-55 to 150	°C				
Peak Pulse Power (tp = 8/20µs) - See Figure 1	P _{pp}	250	W				

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified								
PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE (Note 1)	MINIMUM BREAKDOWN VOLTAGE (Note 1)	MAXIMUM CLAMPING VOLTAGE (Note 1) (Fig. 2)	MAXIMUM CLAMPING VOLTAGE (Note 1) (Fig. 2)	MAXIMUM LEAKAGE CURRENT (Note 1)	MAXIMUM CAPACITANCE (Note 1)	
		V _{wm} VOLTS	@ 1mA V _(BR) VOLTS	@ I _p = 1A V _c VOLTS	@ I _p = 16A V _c VOLTS	@V _{wM} Ι _D μΑ	@0V, 1MHz C pF	
PLR0504PLCN	504N	5.0	6.0	8.0	15.6	0.5	1.5	
NOTES 1. I/O to ground.								

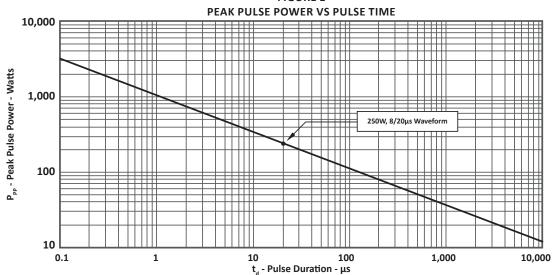
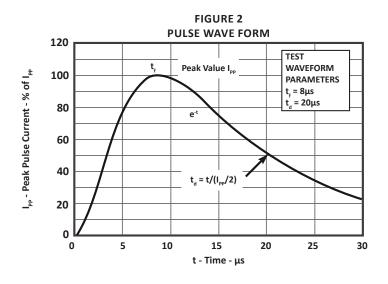
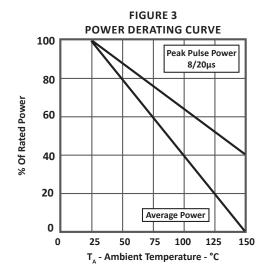
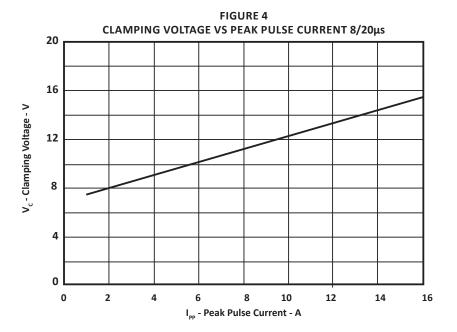


FIGURE 1

TYPICAL DEVICE CHARACTERISTICS



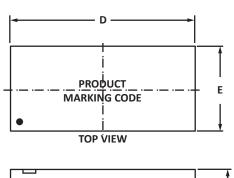


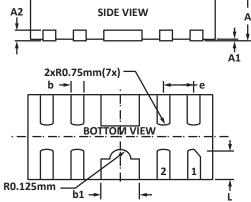


PACKAGE INFORMATION

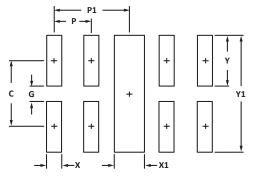
05547

OUTLINE DIMENSIONS							
DIM	MILLIN	IETERS	INCHES				
DIN	MIN	MAX	MIN	MAX			
А	0.47	0.60	0.019	0.024			
A1	0.00	0.05	0.000	0.002			
A2	0.13	0.21	0.005	0.008			
b	0.15	0.25	0.006	0.010			
b1	0.35	0.45	0.014	0.018			
D	2.40	2.60	0.094	0.102			
E	0.90	1.10	0.035	0.043			
e 0.50 Nominal 0.020 Nominal							
L	0.35	0.43	0.014	0.017			
	NOTES 1. Controlling dimension: millimeters.						



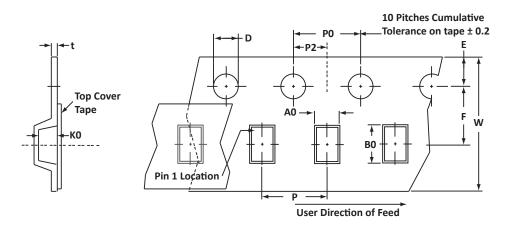


PAD LAYOUT						
DIM	MILLIMETERS	INCHES				
DIIVI	NOMINAL	NOMINAL				
с	0.875	0.34				
G	0.20	0.008				
Р	0.50	0.020				
P1	1.00	0.039				
х	0.25	0.010				
X1	0.46	0.018				
Y	0.675	0.027				
Y1	1.55	0.061				
	NOTES 1. Controlling dimension: millimeters.					



TAPE AND REEL

05547



SPECIFICATIONS												
REEL DIA.	TAPE WIDTH	A0	В0	ко	D	E	F	W	PO	P2	Р	tmax
178mm (7")	8mm	1.20 ± 0.10	2.70 ± 0.10	0.75 ± 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	n millimeters	5.										

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).

ORDERING INFORMATION							
BASE PART NUMBER LEADFREE SUFFIX TAPE SUFFIX QTY/REEL REEL SIZE TUBE QTY							
PLR0504PLCN	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.

CONTACT US

Corporate Headquarters

2929 South Fair Lane Tempe, Arizona 85282 USA

By Telephone

General: 602-431-8101 Sales: & Marketing: 602-414-5109 Customer Service: 602-414-5114 Product Technical Support: 602-414-5107

By Fax

General: 602-431-2288

By E-mail:

Asia Sales: <u>asiasales@protekdevices.com</u> Europe Sales: <u>europesales@protekdevices.com</u> U.S. Sales: <u>ussales@protekdevices.com</u> Distributor Sales: <u>distysales@protekdevices.com</u> Customer Service: <u>service@protekdevices.com</u> Technical Support: <u>support@protekdevices.com</u>

ProTek Devices (Asia Pacific) Pte. Ltd.

8 Ubi Road 2, #06-19 Zervex Singapore - 408538 Tel: +65-67488312 Fax: +65-67488313

Web

www.protekdevices.com

COPYRIGHT © ProTek Devices 2017 - This literature is subject to all applicable copyright laws and is not for resale in any manner.

SPECIFICATIONS: ProTek reserves the right to change the electrical and or mechanical characteristics described herein without notice.

DESIGN CHANGES: ProTek reserves the right to discontinue product lines without notice and that the final judgement concerning selection and specifications is the buyer's and that in furnishing engineering and technical assistance. ProTek assumes no responsibility with respect to the selection or specifications of such products. ProTek makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ProTek assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability without limitation special, consequential or incidental damages.

LIFE SUPPORT POLICY: ProTek Devices products are not authorized for use in life support systems without written consent from the factory.