

ULTRA LOW CAPACITANCE STEERING DIODE/TVS ARRAY



DFN-10 PACKAGE

DESCRIPTION

The PLR3343 is an ultra low capacitance, 4-channel steering diode/TVS array. This device is designed to protect computing applications such as Gigabit Ethernet, HDMI (2.0 & 4K), USB(1.0-3.1) and DVI interfaces as well as telecommunication equipment and systems. The PLR3343 is available in the space-saving DFN-10 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): Contact $\pm 8\text{kV}$, Air $\pm 15\text{kV}$
- Compatible with IEC 61000-4-4 (EFT)
- Compatible with IEC 61000-4-5 (Lightning)
- Protects 4 Lines
- Ultra Low Capacitance: 0.5pF Max(I/O-GND) & 0.25pF Max(I/O-I/O)
- Low Clamping Voltage
- 3.3V Low Operating Voltage
- Optimized Package for High Speed Data Line PCB Layout
- RoHS Compliant
- REACH Compliant

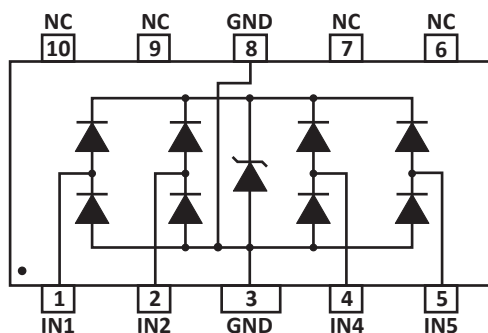
APPLICATIONS

- HDMI, HDMI 2.0, HDMI 4K
- Display Ports
- Gigabit Ethernet
- USB(1.0 - 3.1)
- VGA
- Set-top Box
- Flat Panel Monitors/Smart TV
- Laptops & Desktops
- UHD
- DVI Ports

MECHANICAL CHARACTERISTICS

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

PIN CONFIGURATION



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

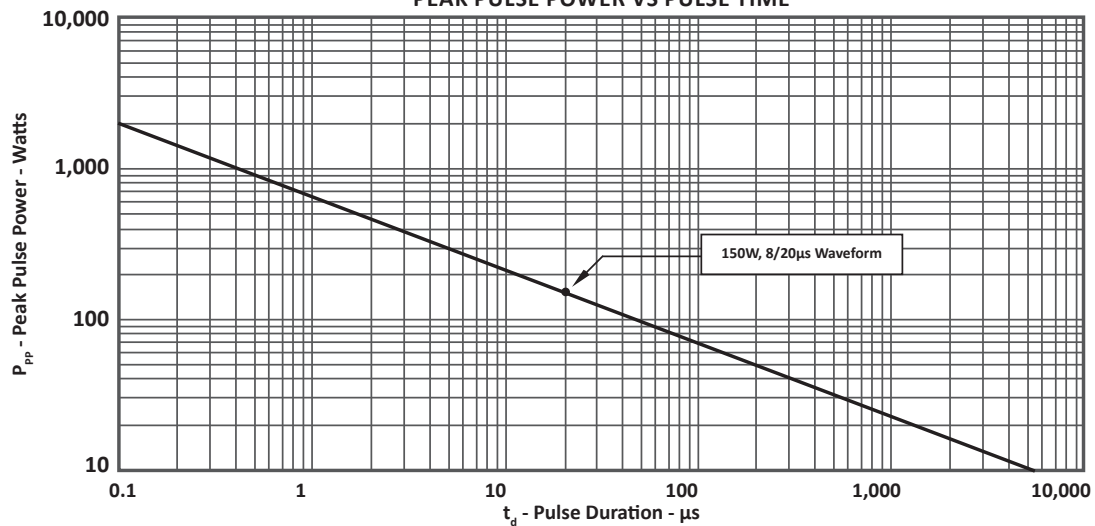
PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Current	I_{PP}	5	Amps
Operating Temperature	T_L	-55 to 125	°C
Storage Temperature	T_{STG}	-55 to 150	°C
Peak Pulse Power ($t_p = 8/20\mu s$) - See Figure 1	P_{PP}	150	Watts
ESD Pulse - Contact	-	±15	kV
ESD Pulse - Air	-	±25	kV

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 LEAKAGE CURRENT (Note 1)	TYPICAL CAPACITANCE I/O - I/O	TYPICAL CAPACITANCE I/O - GND
		V_{WM} VOLTS	@ 1mA $V_{(BR)}$ VOLTS	@ $I_p = 1A$ V_c VOLTS	@ V_{WM} I_D μA	@ 0V, 1MHz C_j pF	@ 0V, 1MHz C_j pF
PLR3343	P43	3.3	5.6	10	1.0	0.25	0.5

NOTES

1. I/O to ground.

**FIGURE 1
PEAK PULSE POWER VS PULSE TIME**


TYPICAL DEVICE CHARACTERISTICS

FIGURE 2
PULSE WAVE FORM

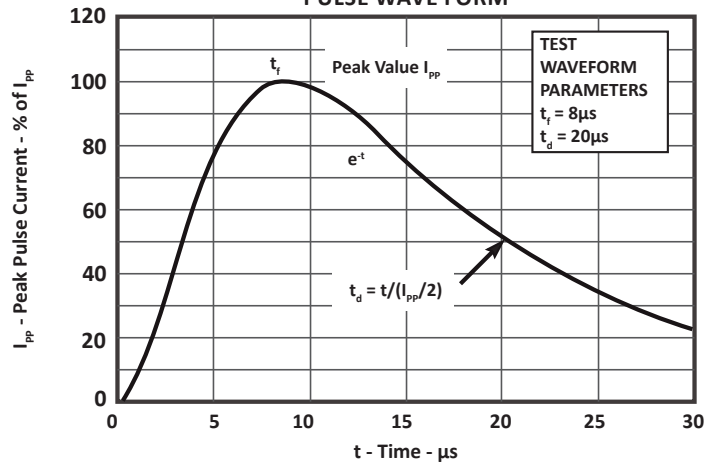


FIGURE 3
Positive I_{pp} vs. V_{CC}

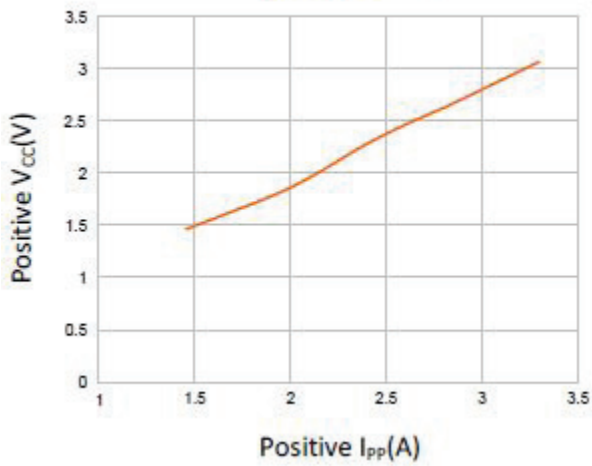
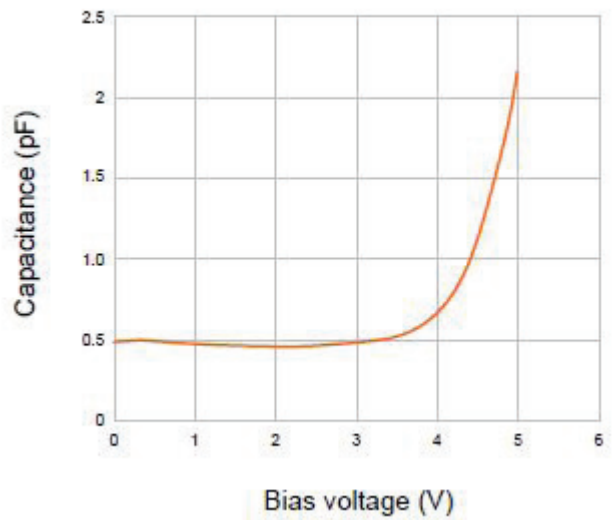


FIGURE 4
Typical curve C_{IN} vs. V_{IN}



TYPICAL DEVICE CHARACTERISTICS

FIGURE 5
TLP CURVE

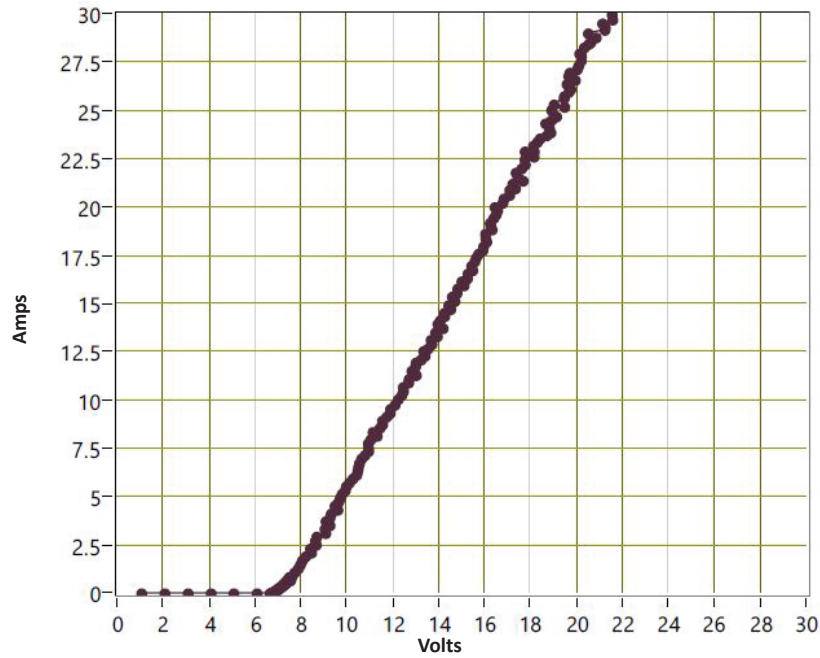
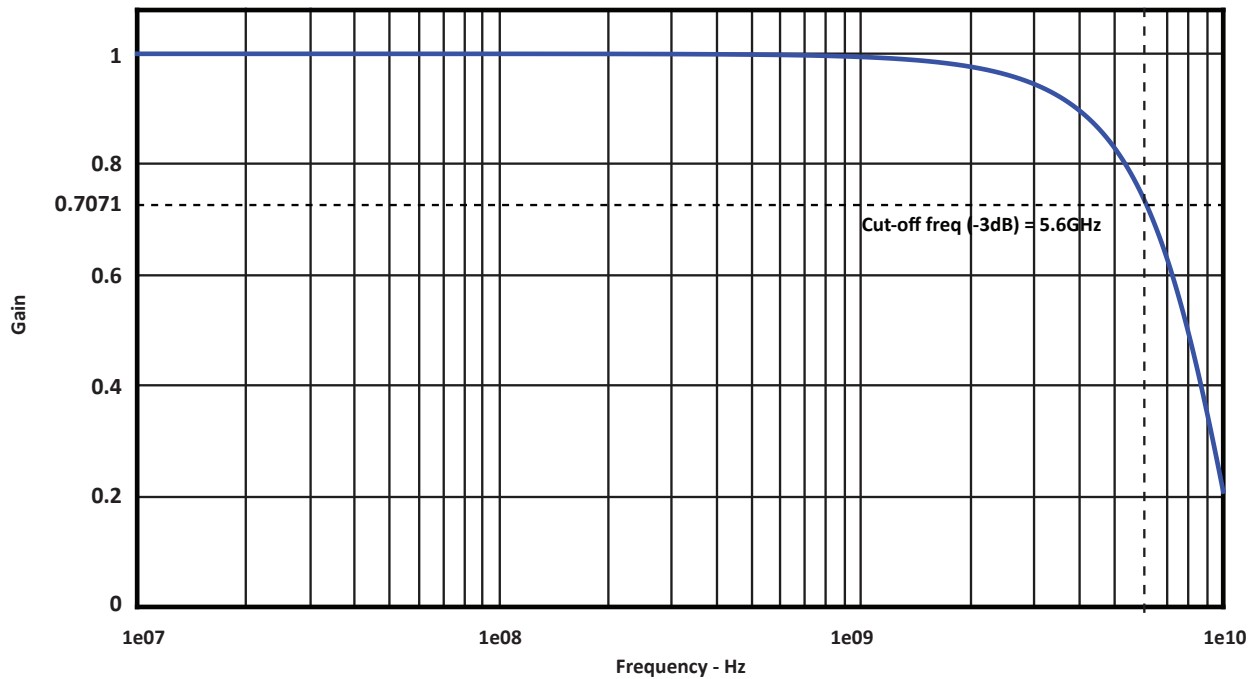


FIGURE 6
GAIN & CUT-OFF FREQUENCY (S21)



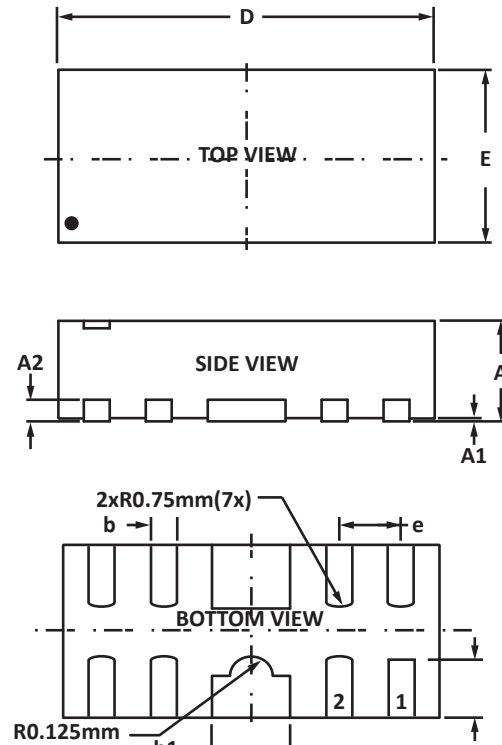
PACKAGE INFORMATION

OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	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

- Controlling dimension: millimeters.

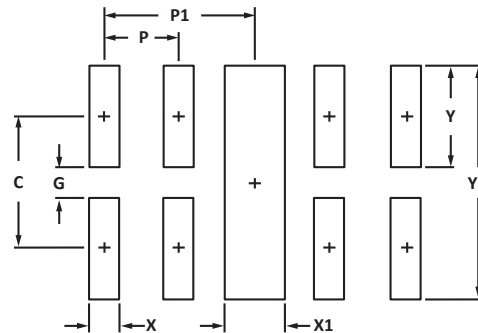


PAD LAYOUT

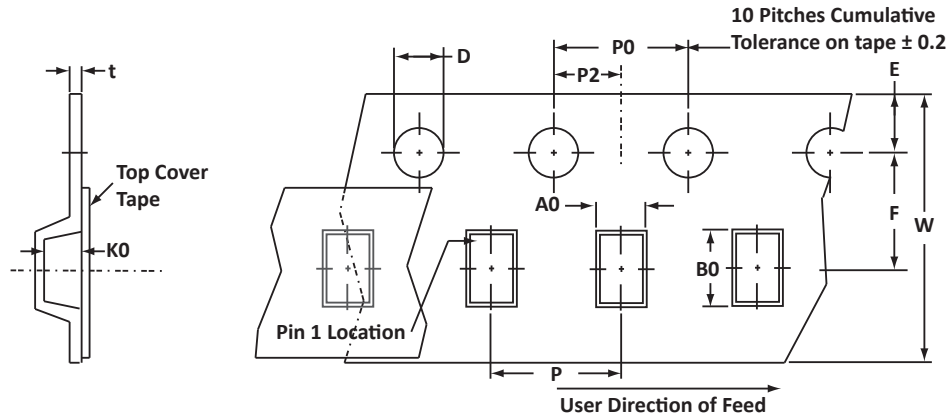
DIM	MILLIMETERS	INCHES
	NOMINAL	NOMINAL
C	0.875	0.34
G	0.20	0.008
P	0.50	0.020
P1	1.00	0.039
X	0.25	0.010
X1	0.46	0.018
Y	0.675	0.027
Y1	1.55	0.061

NOTES

- 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	1.20 ± 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 millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T7 = 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
PLR3343	n/a	-T7	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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