

ULTRA LOW CAPACITANCE TVS ARRAY



DFN-10 PACKAGE

DESCRIPTION

The PLR05214LC is an ultra-low capacitance transient voltage suppressor array, designed to protect computing and networking applications from the damaging effects of Electrostatic Discharge and Electrical Fast Transients.

The PLR05214LC meets and exceeds IEC 61000-4-2 (ESD) and IEC 61000-4-4 (EFT) requirements and protects 4 data lines. This device provides an integrated solution at higher data transmission rates, with a minimum insertion loss while maintaining signal integrity.

This device offers a maximum power dissipation of 100W for an 8/20 μ s surge pulse as well as ultra-low maximum capacitance of 0.35pF and low leakage current in a miniature DFN-10 package, where the need for space on PCB area is a premium.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Contact ± 8 kV, Air ± 15 kV
- Compatible with IEC 61000-4-4 (EFT)
- Compatible with IEC 61000-4-5 (Surge)
- 100 Watts Peak Pulse Power per Line (tp = 8/20 μ s)
- ESD Protection
- Low Clamping Voltage
- Protects 4 Bidirectional Lines
- Ultra Low Capacitance: 0.35pF Max.
- RoHS Compliant
- REACH Compliant

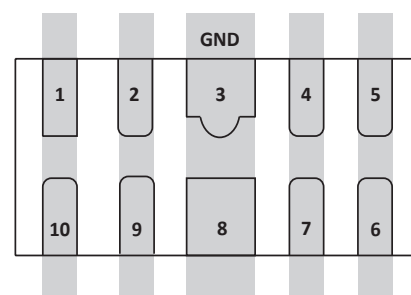
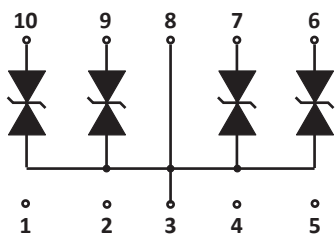
APPLICATIONS

- Gigabit Ethernet
- FireWire
- Wireless Communications
- USB 3.0
- HDMI 2.0 Interfaces
- Type-C Connector

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

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
MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

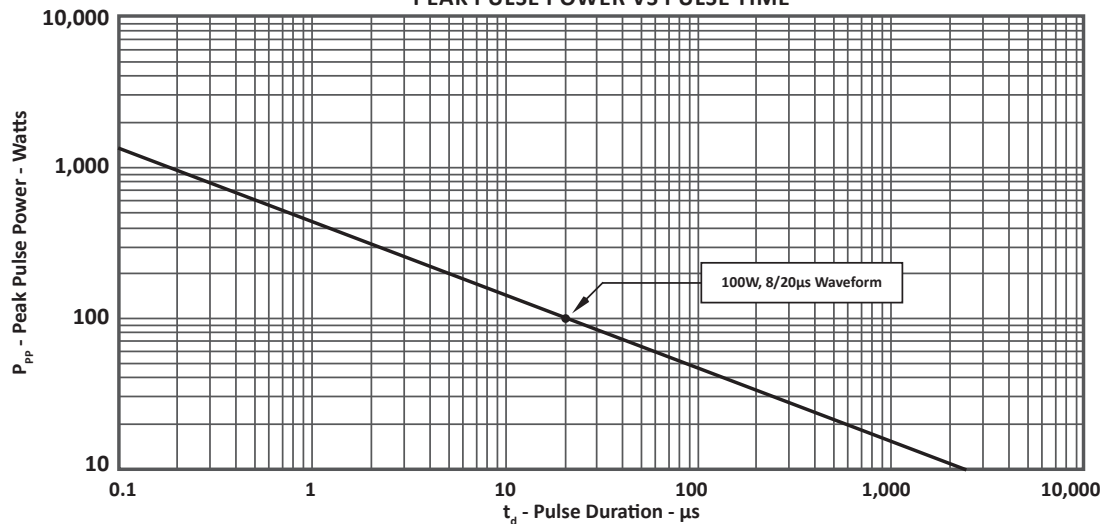
PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	T_L	-55 to 150	°C
Storage Temperature	T_L	-55 to 150	°C
Peak Pulse Power ($t_p = 8/20\mu s$) - See Figure 1	P_{PP}	100	W

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE (Note 1) V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE (Note 1) @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (Note 1) (Fig. 2) @ $I_p = 1A$ V_c VOLTS	MAXIMUM CLAMPING VOLTAGE (Note 1) (Fig. 2) @ $I_p = 5A$ V_c VOLTS	MAXIMUM LEAKAGE CURRENT (Note 1) @ V_{WM} I_D μA	MAXIMUM CAPACITANCE (Note 1) @ 0V, 1MHz C pF
PLR05214LC	214C	5.0	6.0	13.0	20.0	0.5	0.35

NOTES

1. I/O to ground.

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


TYPICAL DEVICE CHARACTERISTICS

FIGURE 2
PULSE WAVE FORM

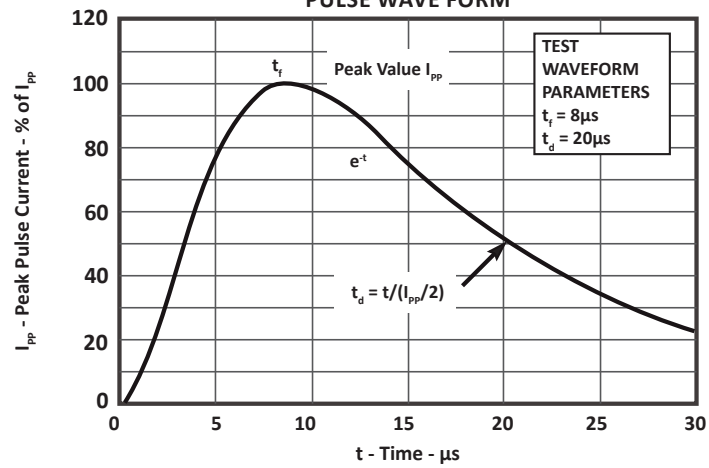
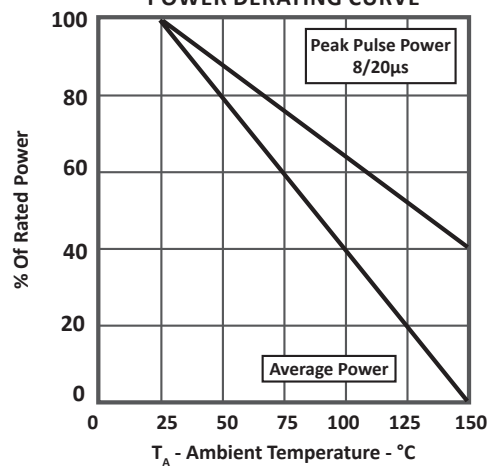


FIGURE 3
POWER DERATING CURVE



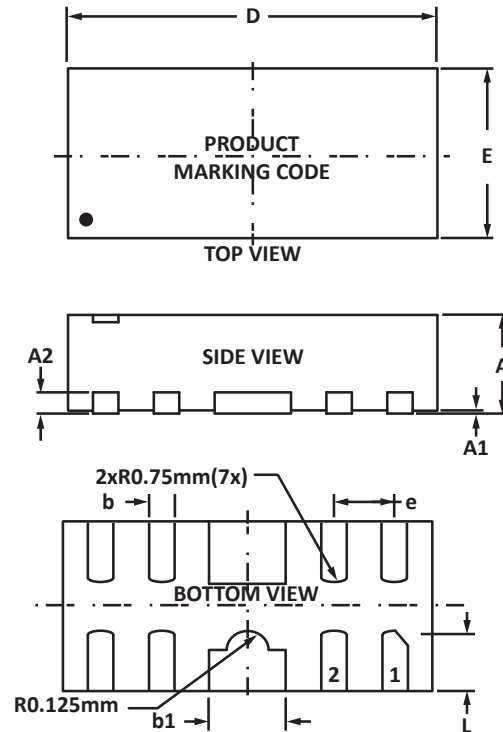
PACKAGE INFORMATION

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.

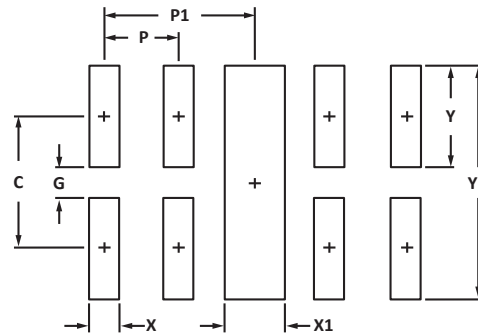


PAD LAYOUT

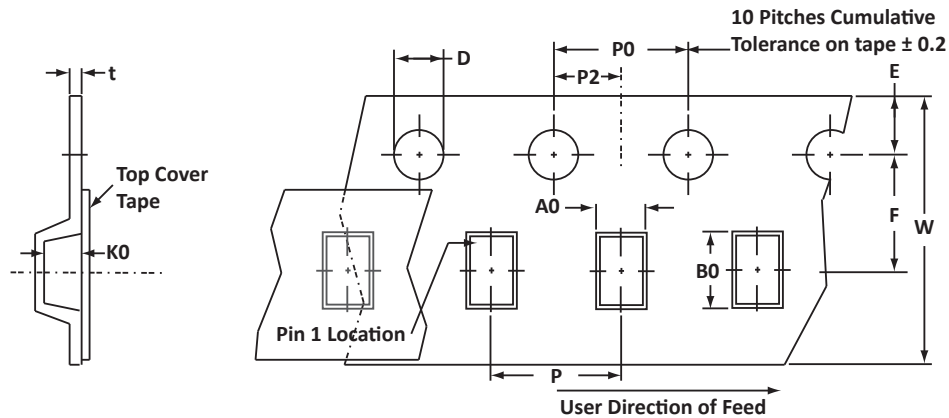
DIM	MILLIMETERS	INCHES
	NOMINAL	NOMINAL
C	0.875	0.34
G	0.20	0.008
P	0.50	0.020
P1	1.00	0.039
X	0.25	0.010
X1	0.46	0.018
Y	0.675	0.027
Y1	1.55	0.061

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 - 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
PLR05214LC	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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