

## STEERING DIODE/TVS ARRAY

### DESCRIPTION

The PLR0522 is an ultra low capacitance steering diode/TVS array. This device is designed to protect computing applications such as gigabit Ethernet, HDMI, USB and DVI interfaces as well as telecommunication equipment and systems. The PLR0522 is available in the space-saving DFN-6 package configuration and is rated at 200 Watts peak pulse current (8/20 $\mu$ s waveshape).

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): 5A - 8/20 $\mu$ s
- 200 Watts Peak Pulse Power per Line(tp = 8/20 $\mu$ s)
- ESD Protection > 25 kilovolts
- Low Clamping Voltage
- Protects 2 Lines
- Ultra Low Capacitance : 0.8pF Typical(I/O to GND)
- RoHS Compliant
- REACH Compliant

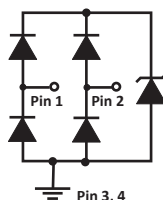
### APPLICATIONS

- Display Port Interface
- Ethernet 10/100/1000 Base T
- Portable Electronics
- Graphic Card
- USB 2.0 Interface
- HDMI 1.4 & 2.0 Interfaces

### MECHANICAL CHARACTERISTICS

- Molded DFN-6 Package
- Approximate Weight: 7 milligrams
- Lead-Free Nickel Paladium Gold Plating
- Solder Reflow Temperature - 260-270°C
- 8mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

## CIRCUIT DIAGRAM



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

PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp = 8/20μs) - See Figure 1	$P_{PP}$	60	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**

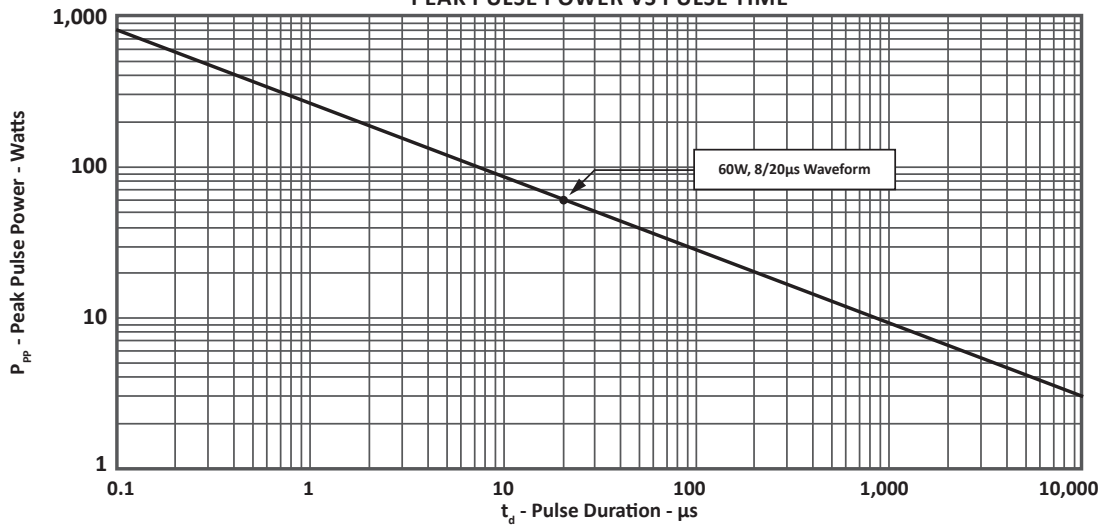
PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE (Note 1) $V_{WM}$ VOLTS	MINIMUM BREAKDOWN VOLTAGE (Note 1) @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) (Note 1) @ $I_p = 1A$ $V_C$ VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) (Note 1) @ $I_p = 4A$ $V_C$ VOLTS	MAXIMUM LEAKAGE CURRENT (Note 1) @ $V_{WM}$ $I_D$ μA	TYPICAL CAPACITANCE (Note 1) @ 0V, 1MHz $C_{J(SD)}$ pF
PLR0522	52	5.0	6.0	12.5	16.5	0.5	0.8

**NOTE**

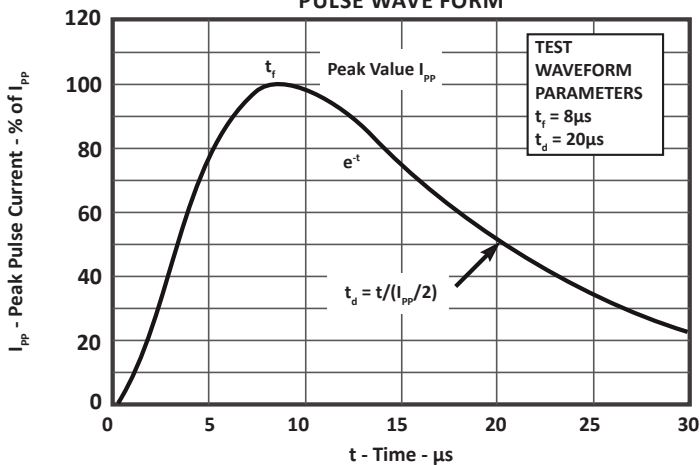
1. From I/O Pin to ground.

TYPICAL DEVICE CHARACTERISTICS

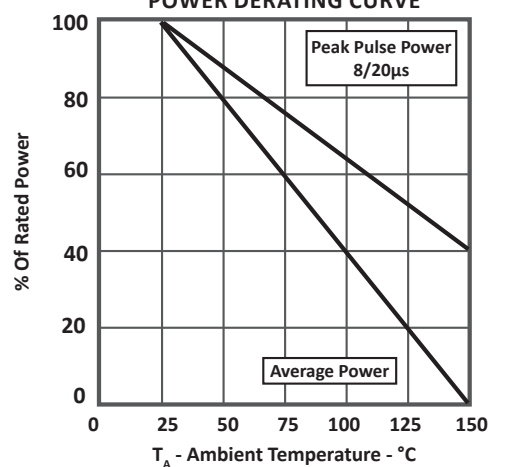
**FIGURE 1**  
PEAK PULSE POWER VS PULSE TIME



**FIGURE 2**  
PULSE WAVE FORM

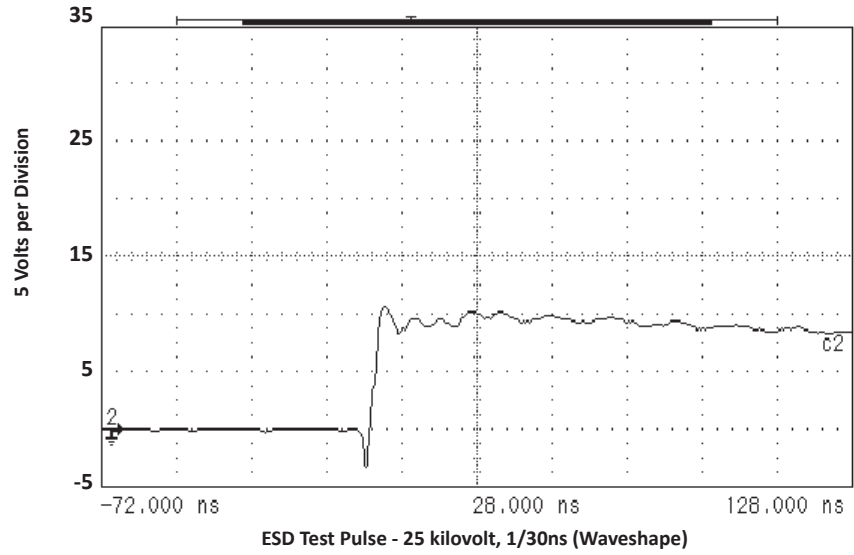


**FIGURE 3**  
POWER DERATING CURVE



TYPICAL DEVICE CHARACTERISTICS

**FIGURE 4**  
**OVERSHOOT & CLAMPING VOLTAGE**



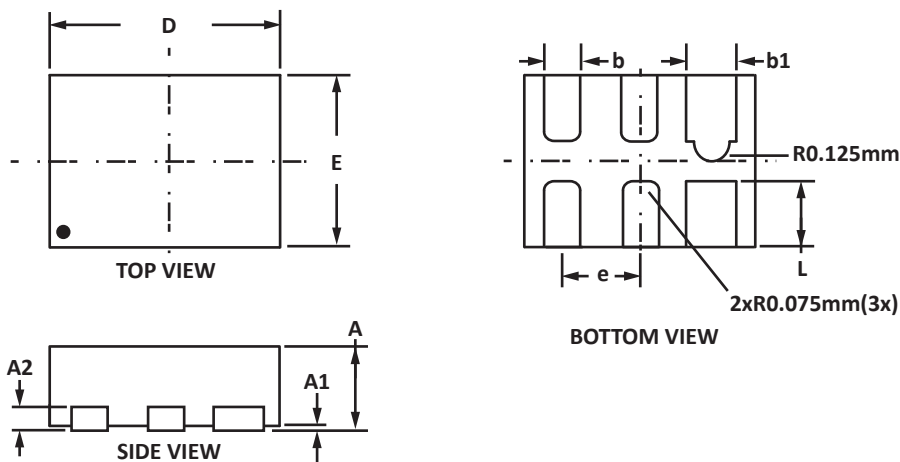
## DFN-6S1 PACKAGE INFORMATION

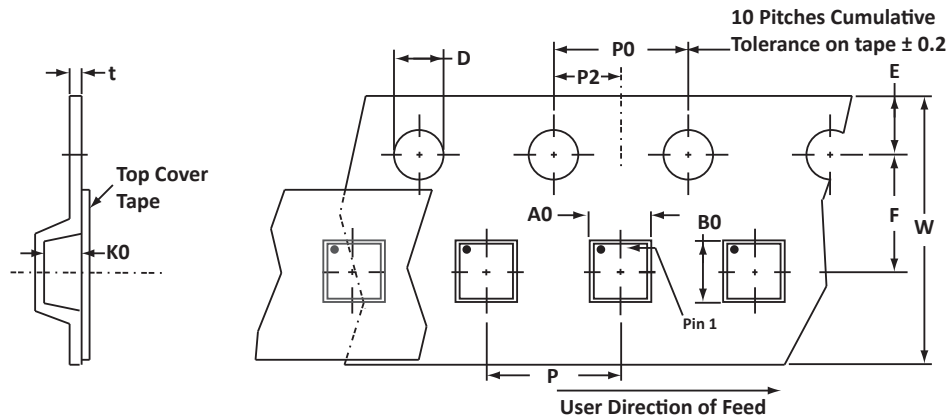
### OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.50	0.65	0.020	0.026
A1	0.00	0.05	0.000	0.002
A2	0.13		0.005	
b	0.15	0.25	0.006	0.010
b1	0.35	0.45	0.014	0.018
D	1.50	1.70	0.059	0.067
E	0.90	1.10	0.035	0.043
e	0.50 BSC		0.020 BSC	
L	0.30	0.43	0.012	0.017

#### NOTES

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



**TAPE AND REEL**

**SPECIFICATIONS**

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	1.30 ± 0.10	1.90 ± 0.10	0.70 ± 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) and polarity dot.

**ORDERING INFORMATION**

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PLR0522	n/a	-T7	3,000	7"	n/a

This device is only available in a Lead-Free configuration.

## COMPANY INFORMATION

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### 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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