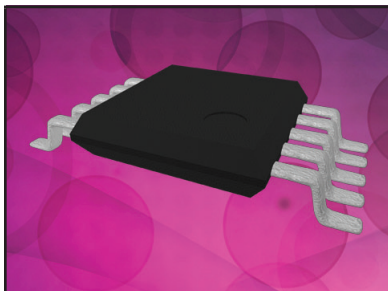


ULTRA LOW CAPACITANCE STEERING DIODE/TVS ARRAY



MSOP-10 PACKAGE

DESCRIPTION

The PLR4045 is an ultra low capacitance steering diode/TVS array. This device is designed to protect networking applications such as 2.5GBASE-T, T3/E3 chip-side protection as well as DVI and USB interfaces. The PLR4045 is available in a MSOP-10 package configuration and is rated at 600 Watts peak pulse power (8/20 μ s waveform).

The PLR4045 meets and exceeds the IEC 61000-4-2, 61000-4-4 and IEC 61000-4-5 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 \pm 15kV, Contact \pm 8kV
- Compatible with IEC 61000-4-4 (EFT)
- Compatible with IEC 61000-4-5 (Surge)
- 600 Watts Peak Pulse Power per Line ($t_p = 8/20\mu s$)
- ESD Protection > 25 kilovolts
- Unidirectional Configuration
- Low Clamping Voltage: 20V (Max.) @ $I_{PPM} = 30A$
- Protects 4 I/O ports & Power Supply
- Ultra Low Capacitance: 1.6pF (Typ.)
- RoHS Compliant
- REACH Compliant

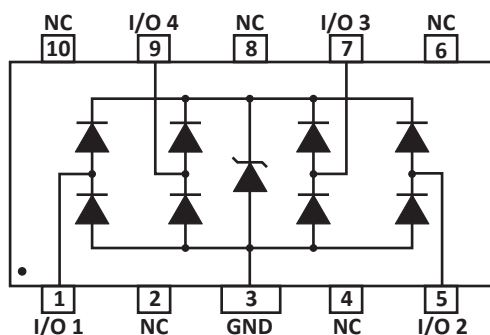
APPLICATIONS

- 2.5GBASE-T
- T1/E1 & T3/E3 Chip-side Protection
- DVI Interface
- USB 2.0 Interface

MECHANICAL CHARACTERISTICS

- Molded JEDEC MSOP-10 Package
- Approximate Weight: 24 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- 12mm 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
Operating Temperature	T_L	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C
Peak Pulse Power ($t_p = 8/20\mu s$) - See Figure 1	P_{PP}	600	Watts
Peak Pulse Current (8/20 μs)	I_{PP}	24	A

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ $I_p = 1A$ V_c VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ $I_p = 30A$ V_c VOLTS	MAXIMUM LEAKAGE CURRENT @ V_{WM} I_D μA	TYPICAL CAPACITANCE I/O - GND @0V, 1MHz C pF	MAXIMUM CAPACITANCE I/O - GND @0V, 1MHz C pF
PLR4045	3.3	4	6.2	20	0.1	1.6	2.0

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

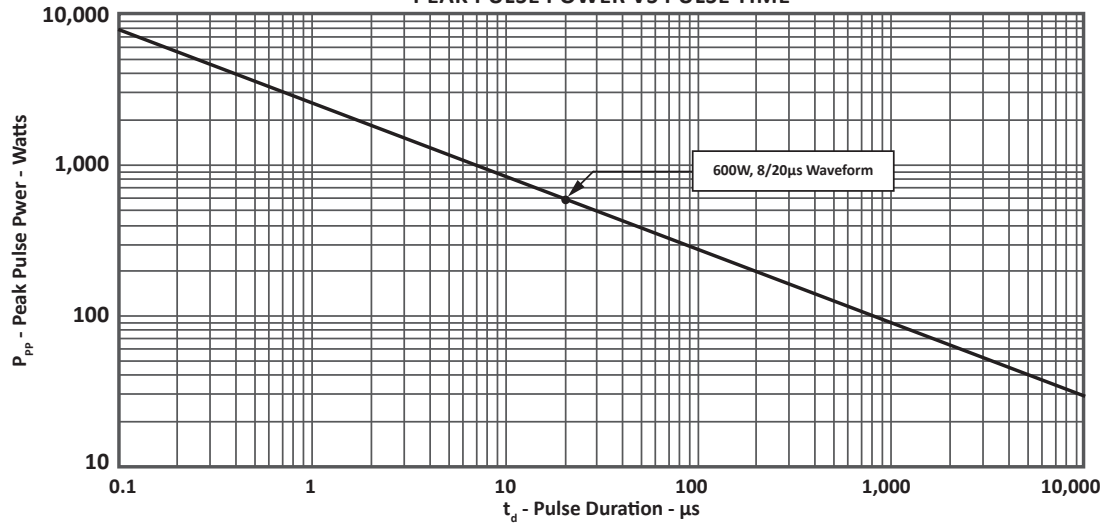


FIGURE 2
PULSE WAVE FORM

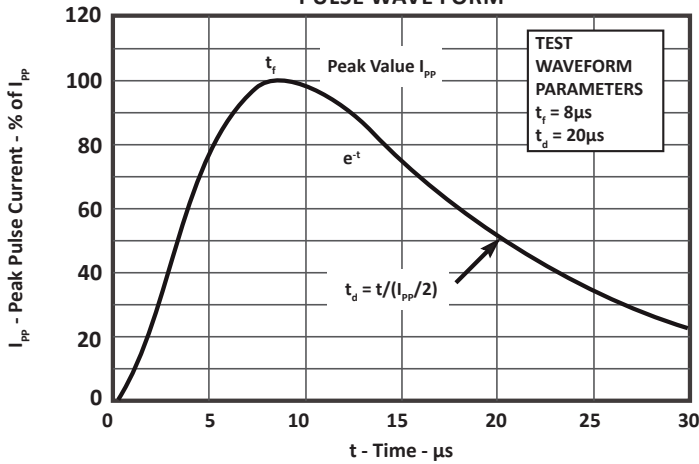
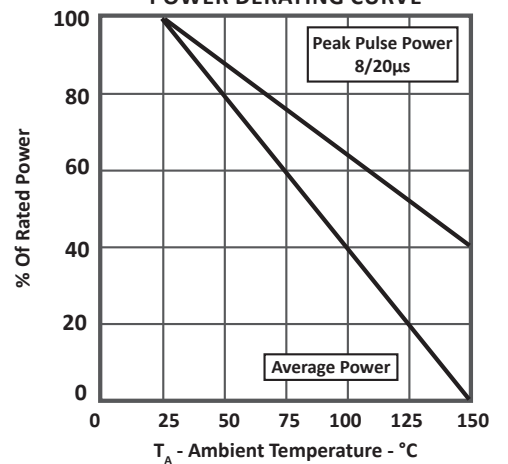


FIGURE 3
POWER DERATING CURVE



TYPICAL DEVICE CHARACTERISTICS

FIGURE 4
TYPICAL CLAMPING VOLTAGE - 8/20 μ s

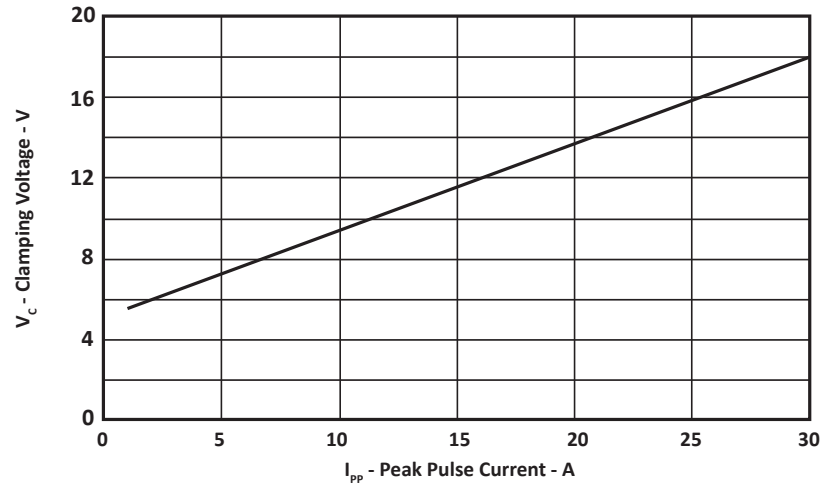
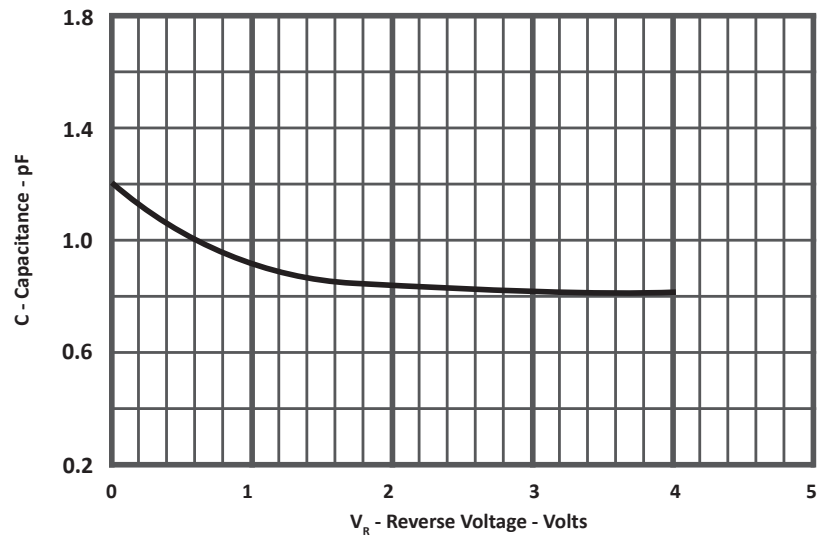


FIGURE 5
TYPICAL REVERSE VOLTAGE VS CAPACITANCE

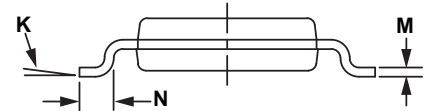
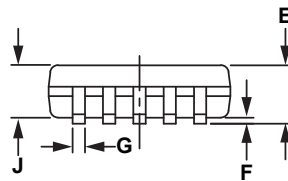
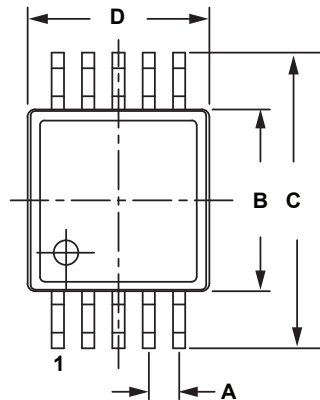


PACKAGE INFORMATION
OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.500		0.0197	
B	2.90	3.10	0.114	0.122
C	4.67	5.08	0.184	0.200
D	2.90	3.10	0.114	0.122
E	0.81	0.91	0.032	0.036
F	0.15		0.006	
G	0.18	0.28	0.007	0.011
J	0.71		0.028	
K	0°	6°	0°	6°
M	0.09	0.20	0.004	0.008
N	0.43	0.64	0.017	0.025

NOTES

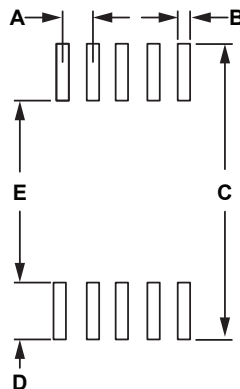
1. Dimensions are exclusive of mold flash and metal burrs.


PAD LAYOUT DIMENSIONS

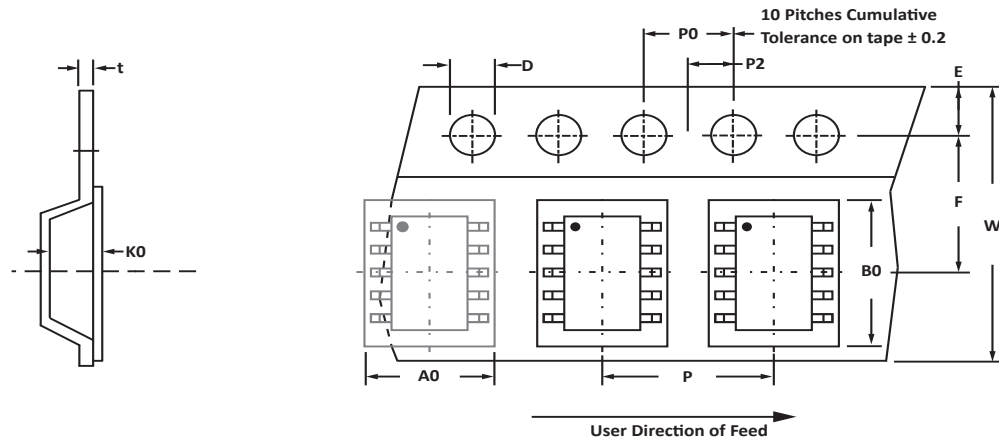
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.66 BSC		0.026 BSC	
B	0.41	0.51	0.016	0.020
C	5.84	-	0.230	-
D	1.02	1.27	0.040	0.050
E	3.56	-	0.140	-

NOTES

1. Controlling dimension: inches.



TAPE AND REEL



SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	12mm	5.30 ± 0.20	3.40 ± 0.10	1.40 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	5.50 ± 0.05	12.00 ± 0.30	4.00 ± 0.12	2.00 ± 0.10	8.00 ± 0.10	0.25

NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T71 = 7" Reel - 1,000 pieces or -T13 = 13" Reel - 2,500 pieces per 12mm tape.
- Bulk product shipped in tubes of 100 pieces per tube.
- Marking on Part - part number, date code, logo and pin one defined by dot on top of package.

ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PLR4045	N/A	-T71	1,000	7"	N/A
PLR4045	N/A	-T13	2,500	13"	N/A

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

COMPANY INFORMATION

COMPANY PROFILE

In business more than 20 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.

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