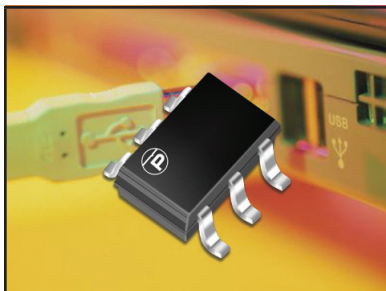


ULTRA LOW CAPACITANCE/LOW CLAMPING STEERING DIODE/THYRISTOR ARRAY



SOT-23-6 PACKAGE

DESCRIPTION

The TRVxx-4LC series are steering diode/Thyristor arrays that offer up to 4 lines of high speed data protection against voltage transients. These devices have a very low off-state capacitance and very low clamping voltage due to its fold back characteristics, which significantly reduces its power dissipation - maximum of 300 Watts (8/20 μ s). The TRVxx-4LC series meets and exceeds IEC 61000-4-2, IEC 6100-4-4 and IEC 61000-4-5 standards. These devices are offered in a SOT-23-6 package configuration and is compatible with 2.5V and 3.3V operating systems.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air \pm 15kV, Contact \pm 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 25A, 8/20 μ s
- 300 Watts Power Dissipation (tp = 8/20 μ s)
- ESD Protection > 25 kilovolts
- Low Clamping Voltage - 12V Max at 25A (tp = 8/20 μ s)
- Protection for 4 Lines
- Ultra Low Capacitance: 0.7pF Max (IO to IO) & 1.4pF Max (IO to GND)
- RoHS Compliant
- REACH Compliant

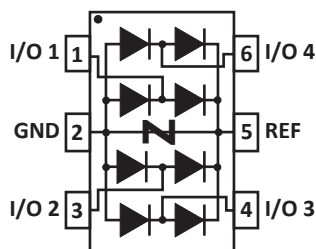
APPLICATIONS

- Gigabit Ethernet
- SMART Phones
- Portable Electronics
- Video Card Interface
- Up to USB 3.0
- DVI Interfaces

MECHANICAL CHARACTERISTICS

- Molded JEDEC SOT-23-6 Package
- Approximate Weight: 16 milligrams
- Lead-Free Nickel Paladium Gold Plating
- Solder Reflow Temperature: Ni/Pd/Au, 96/3.5/0.5: 260-270°C
- Flammability Rating UL 94V-0
- 8mm Tape and Reel per EIA Standard 481

PIN CONFIGURATION



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

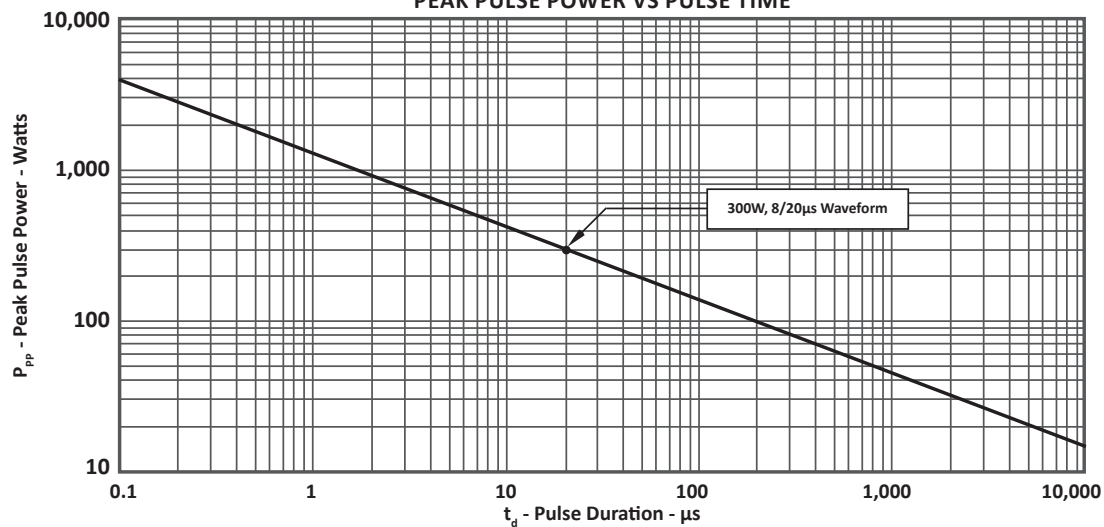
PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	T_L	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C
Peak Pulse Power ($t_p = 8/20\mu s$) - Figure 1	P_{PP}	300	Watts
Steering Diode Forward On-State Voltage ($I_F = 10mA$)	V_F	1.2	Volts

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

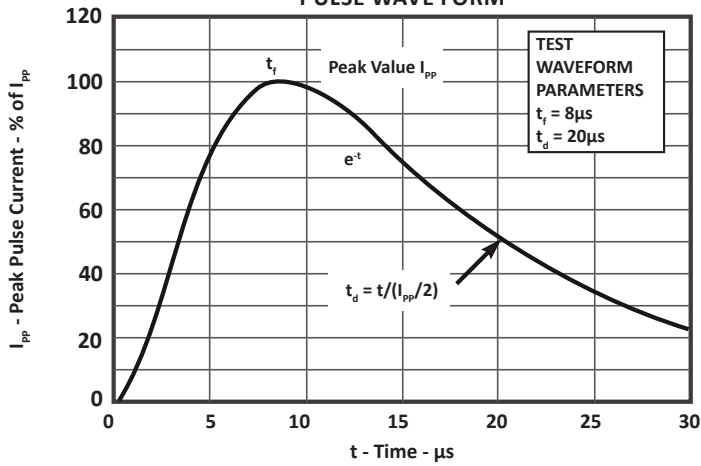
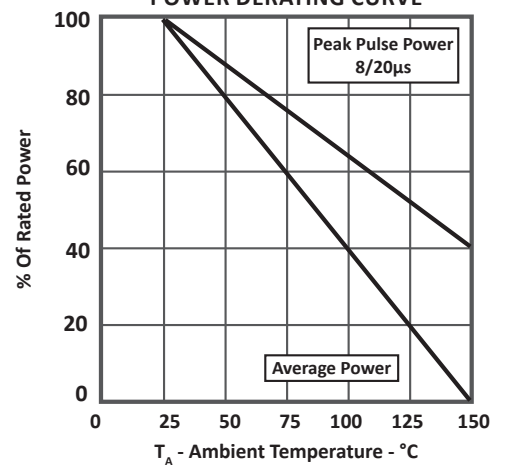
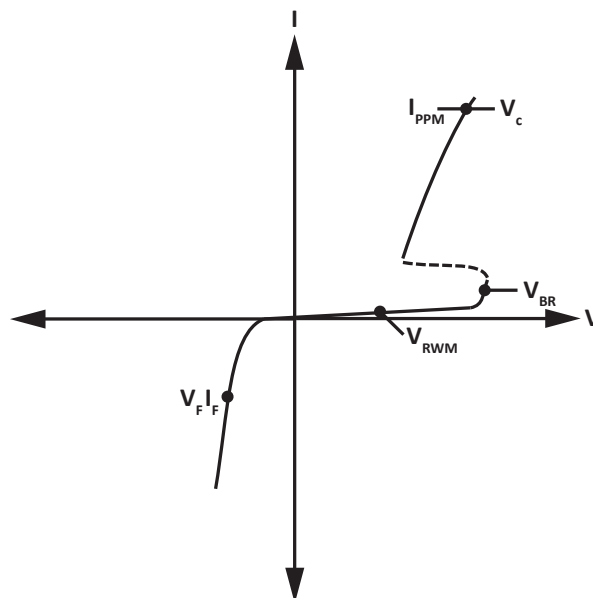
PART NUMBER (Note 1)	DEVICE MARKING	RATED STAND-OFF VOLTAGE (Note 1)	MINIMUM BREAKDOWN VOLTAGE (Note 1)	MAXIMUM CLAMPING VOLTAGE (Fig. 2)	MAXIMUM CLAMPING VOLTAGE (Fig. 2)	MAXIMUM LEAKAGE CURRENT (Note 1)	TYPICAL CAPACITANCE IO - GND	MAXIMUM CAPACITANCE IO - GND	MAXIMUM CAPACITANCE IO - IO
		V_{WM} VOLTS	@ 100 μA $V_{(BR)}$ VOLTS	@ $I_p = 5A$ V_C VOLTS	@ $I_p = 25A$ V_C VOLTS	@ V_{WM} I_D μA	@ 0V, 1MHz C_J pF	@ 0V, 1MHz C_J pF	@ 0V, 1MHz C_J pF
TRV03-4LC	TT3	3.3	6.0	5.0	12.0	1.0	1.1	1.4	0.7
TRV05-4LC	TT5	5.0	6.0	5.0	12.0	1.0	1.1	1.4	0.7

NOTES

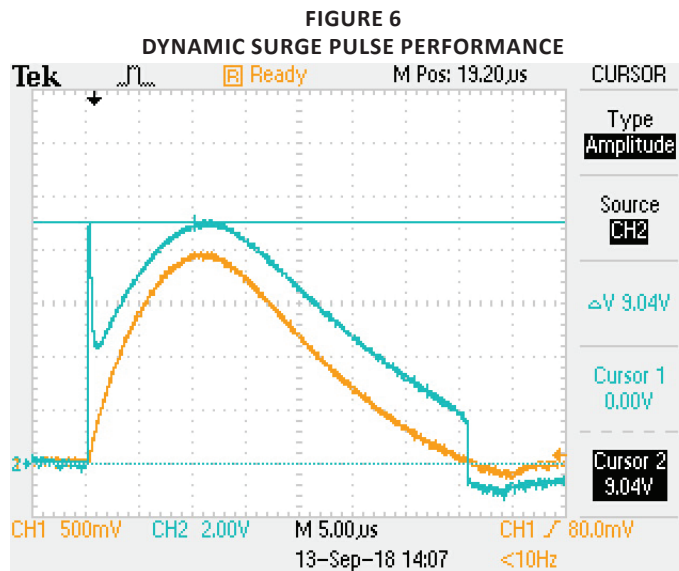
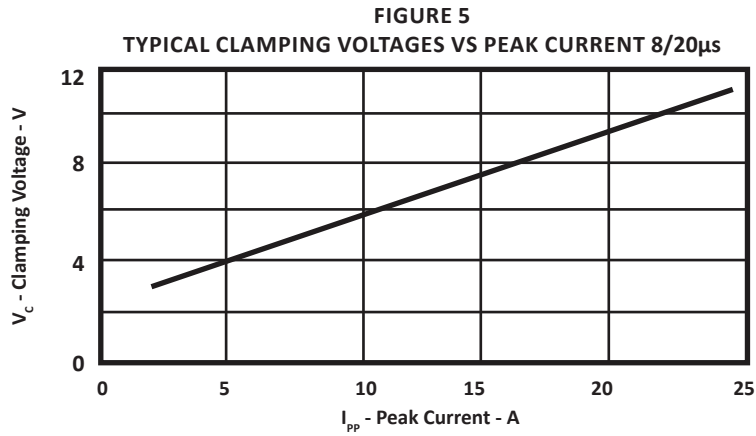
1. Measured from IO pins to ground.

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


TYPICAL DEVICE CHARACTERISTICS

FIGURE 2
PULSE WAVE FORM

FIGURE 3
POWER DERATING CURVE

FIGURE 4
VOLTAGE AND CURRENT CHARACTERISTICS


TYPICAL DEVICE CHARACTERISTICS



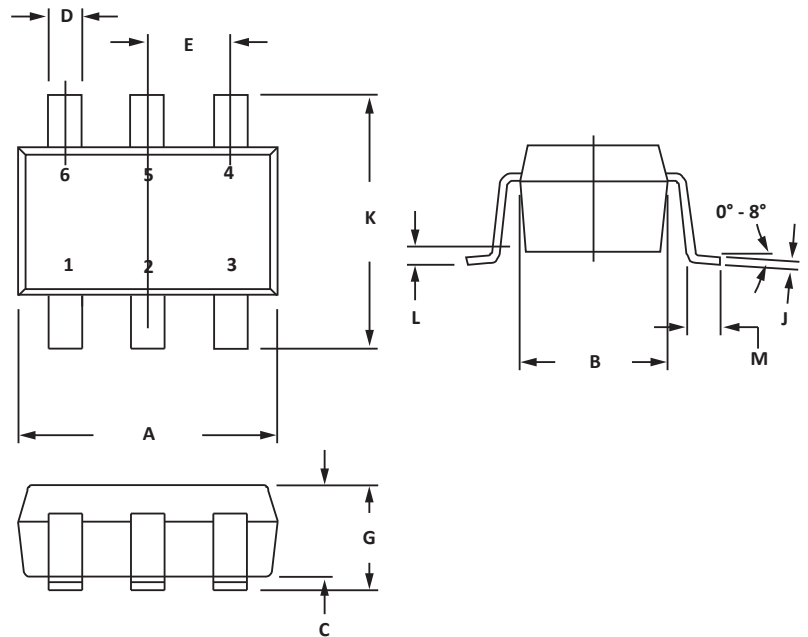
SOT-23-6 PACKAGE INFORMATION

OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.80	3.05	0.110	0.120
B	1.50	1.75	0.059	0.070
C	0.90	1.30	0.036	0.051
D	0.30	0.40	0.012	0.016
E	0.85	1.05	0.033	0.040
G	0.90	1.45	0.036	0.057
J	0.09	0.20	0.003	0.008
K	2.60	3.00	0.102	0.118
L	0.0	0.15	0.0	0.006
M	0.30	0.60	0.012	0.024

NOTES

- Controlling dimension: inches.
- Dimensioning and tolerances per ANSI Y14.5M, 1985.
- Dimensions are exclusive of mold flash and metal burrs.

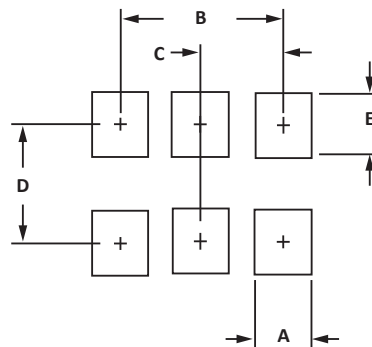


PAD LAYOUT DIMENSIONS

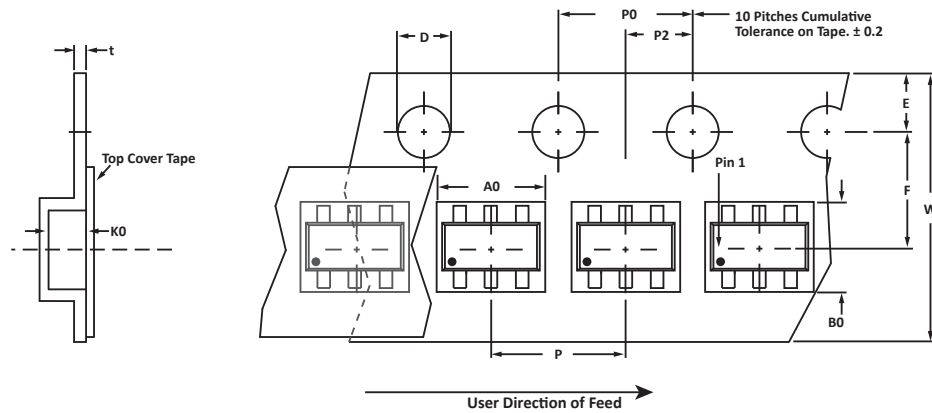
DIM	MILLIMETERS	INCHES
	NOMINAL	NOMINAL
A	0.70	0.028
B	1.90	0.074
C	0.95	0.037
D	2.40	0.094
E	1.00	0.039

NOTES

- Controlling dimension: inches.



TAPE AND REEL



SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	3.20 ± 0.10	3.20 ± 0.10	1.65 ± 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. Marking on Part - marking code (see page 2) and pin one defined by dot on package.

ORDERING INFORMATION

BASE PART NUMBER (xx = VOLTAGE)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
TRVxx-4LC	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 certified company.

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