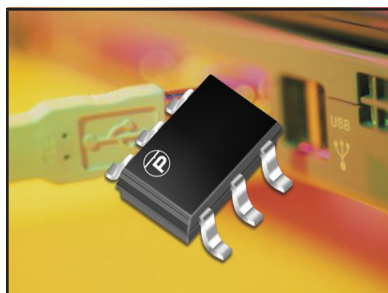


## ULTRA LOW CAPACITANCE STEERING DIODE/THYRISTOR ARRAY


**SOT-23-6 PACKAGE**

### DESCRIPTION

The TRVxx-2LC Series provides ESD, EFT and surge protection for high speed data interfaces. The 15V or 24V thyristor array and steering diode combination device meets IEC 61000-4-2, IEC 61000-4-5 and GR-1089-CORE requirements. The device can protect up to 2 data lines and is offered in the SOT-23-6 package configuration.

### FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air  $\pm 15\text{kV}$ , Contact  $\pm 8\text{kV}$
- Compatible with IEC 61000-4-5 (Surge): 35A, 8/20 $\mu\text{s}$
- Compatible with GR-1089-CORE (Surge): 50A, 2/10 $\mu\text{s}$
- ESD Protection > 25 kilovolts
- Protection for 2 Lines
- Ultra Low Capacitance: 3pF
- RoHS Compliant
- REACH Compliant

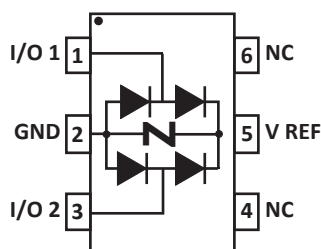
### APPLICATIONS

- Gateway
- Set-Top Boxes
- Modems/Routers
- ADSL/VDSL Interfaces

### MECHANICAL CHARACTERISTICS

- Molded JEDEC SOT-23-6 Package
- Approximate Weight: 16 milligrams
- Lead-Free Tin-Matte Plating
- Solder Reflow Temperature:  $250^{\circ}\text{C} \pm 5^{\circ}\text{C}$
- 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	$T_{STG}$	-65 to 150	°C
Peak Pulse Power ( $t_p = 8/20\mu s$ ) - Between IO and Ground	$P_{PP}$	500	Watts
Peak Pulse Power ( $t_p = 2/10\mu s$ ) - Between IO and Ground	$P_{PP}$	600	Watts

## ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Note 1)	DEVICE MARKING	MAXIMUM STAND-OFF VOLTAGE  $V_{DRM}$ VOLTS	MAXIMUM SWITCHING VOLTAGE  @ 1V/ $\mu s$ $V_S$ VOLTS	TYPICAL HOLDING CURRENT  $I_H$ mA	MINIMUM SWITCHING CURRENT  $I_S$ mA	MAXIMUM CLAMPING VOLTAGE  8/20 $\mu s$ @ $I_P = 30A$ $V_C$ VOLTS	MAXIMUM LEAKAGE CURRENT  @ $V_{WM}$ $I_D$ $\mu A$	TYPICAL CAPACITANCE  @ 2V, 1MHz C pF
TRV15-2LC	T215	15	22	10	10	20	0.01	3.0
TRV24-2LC	T224	24	29	10	10	20	0.01	3.0

## NOTES

1. All measurements made between IO and ground.

FIGURE 1  
PULSE WAVE FORM

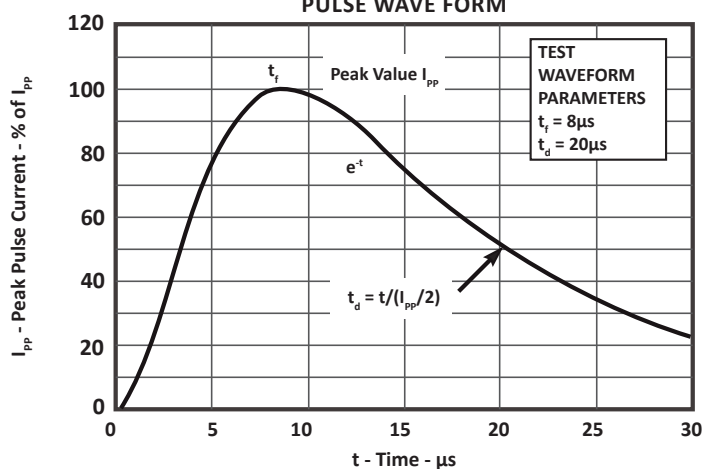
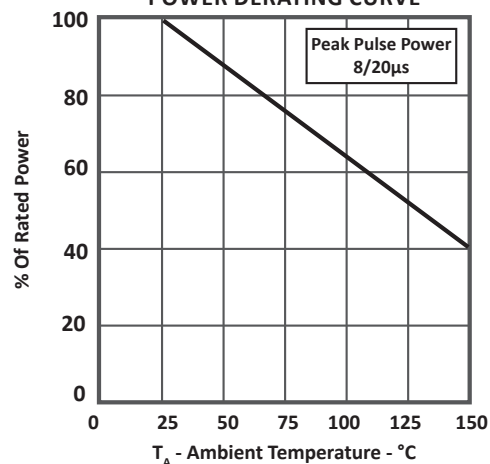
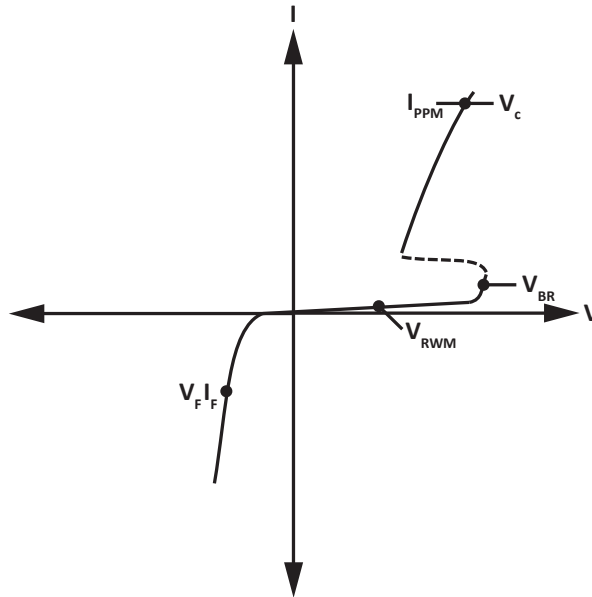
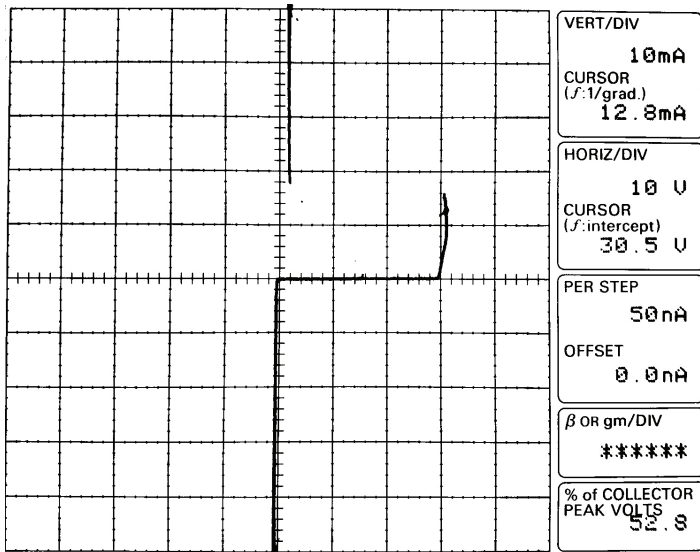
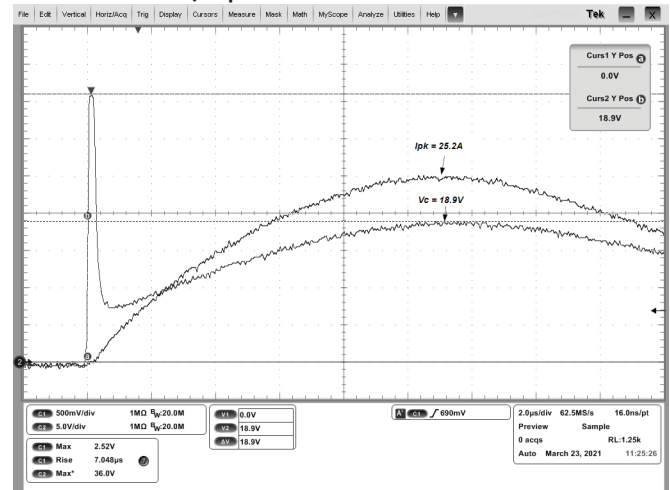


FIGURE 2  
POWER DERATING CURVE



## TYPICAL DEVICE CHARACTERISTICS

**FIGURE 3**  
**VOLTAGE AND CURRENT CHARACTERISTICS**

**FIGURE 4**  
**TRV24-2LC V-I CHARACTERISTICS IO TO GND**

**FIGURE 5**  
**TRV24-2LC 8/20μs SURGE PERFORMANCE IO TO GND**


## TYPICAL DEVICE CHARACTERISTICS

FIGURE 6  
TRV15-2LC V-I CHARACTERISTICS IO TO GND

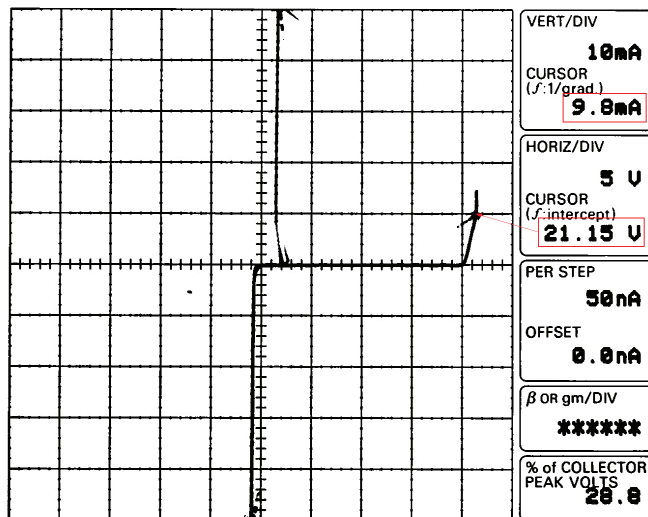
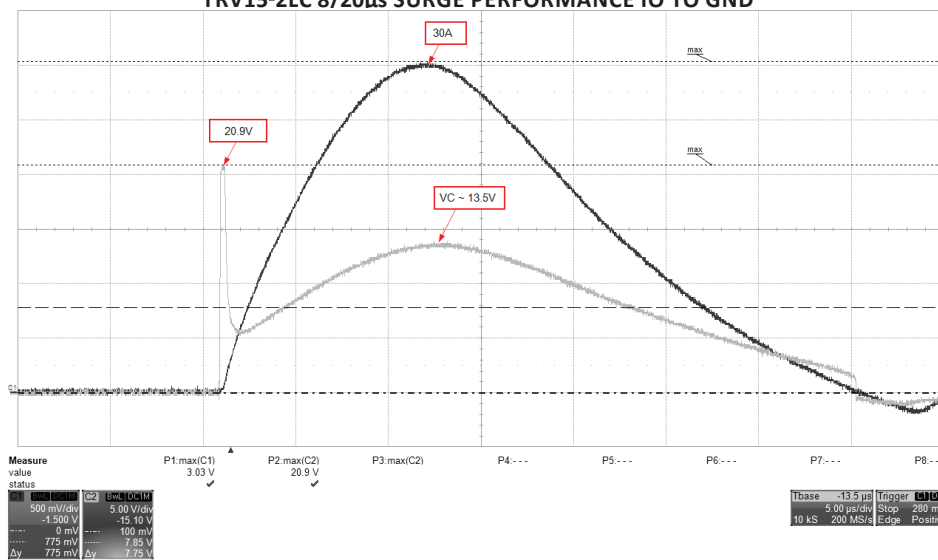


FIGURE 7  
TRV15-2LC 8/20 $\mu$ s SURGE PERFORMANCE IO TO GND

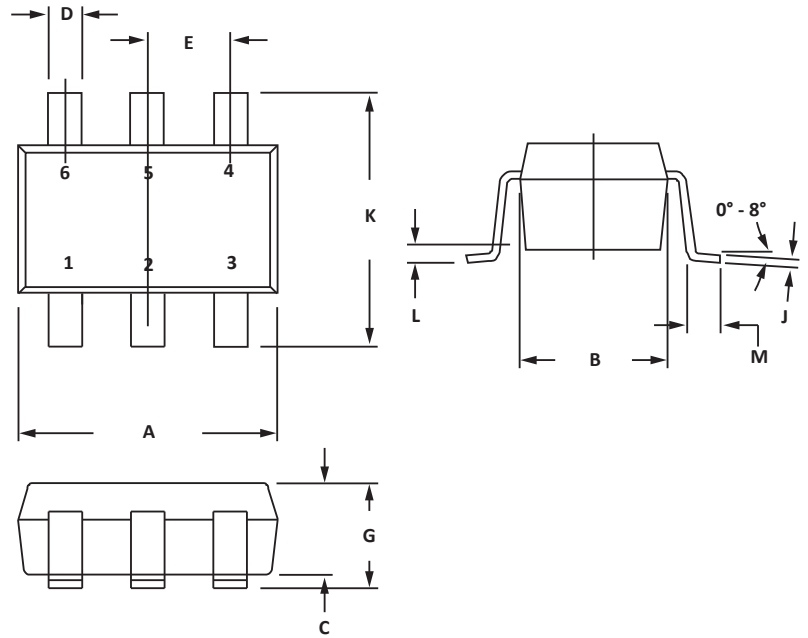


**SOT-23-6 PACKAGE INFORMATION**
**OUTLINE DIMENSIONS**

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**

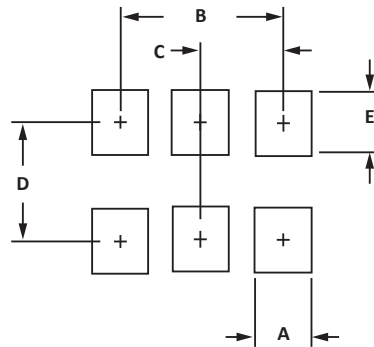
1. Controlling dimension: inches.
2. Dimensioning and tolerances per ANSI Y14.5M, 1985.
3. Dimensions are exclusive of mold flash and metal burrs.


**PAD LAYOUT DIMENSIONS**

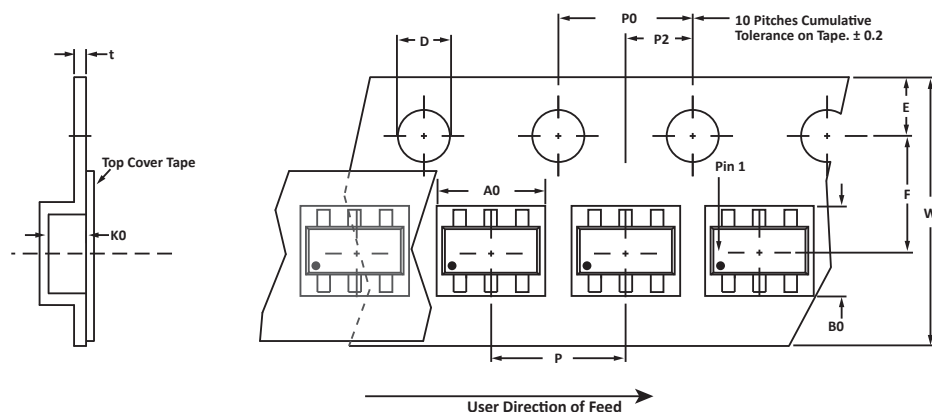
DIM	MILLIMETERS	INCHES
	NOMINAL	NOMINAL
A	0.70	0.028
B	1.90	0.074
C	0.95	0.037
D	2.40	0.094
E	1.00	0.039

**NOTES**

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")	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	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
TRVxx-2LC	n/a	-T73	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 30 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection that include Transient Voltage Suppressor (TVS) Arrays, Steering Diode Array Hybrids, High-power Components and Modules, as well as Steering Diodes, EMI Filter/TVS Arrays and Thyristor Surge Suppressors. These components deliver circuit protection in electronic systems from numerous overvoltage events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices is an ISO 9001 certified company.

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