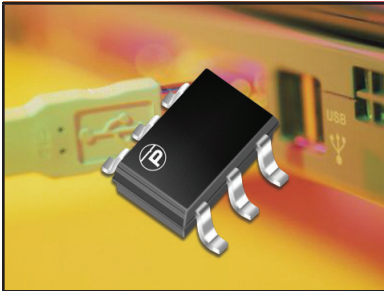


## ULTRA LOW CAPACITANCE STEERING DIODE/THYRISTOR ARRAY



**SOT-23-6 PACKAGE**

### DESCRIPTION

The TRV24-2LC provides ESD, EFT and surge protection for high speed data interfaces. The 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

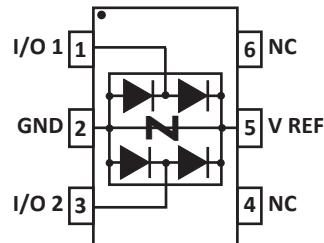
### MECHANICAL CHARACTERISTICS

- Molded JEDEC SOT-23-6 Package
- Approximate Weight: 16 milligrams
- Lead-Free Tin-Matte Plating
- Solder Reflow Temperature: 250°C  $\pm$  5°C
- Flammability Rating UL 94V-0
- 8mm Tape and Reel per EIA Standard 481



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### PIN CONFIGURATION



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

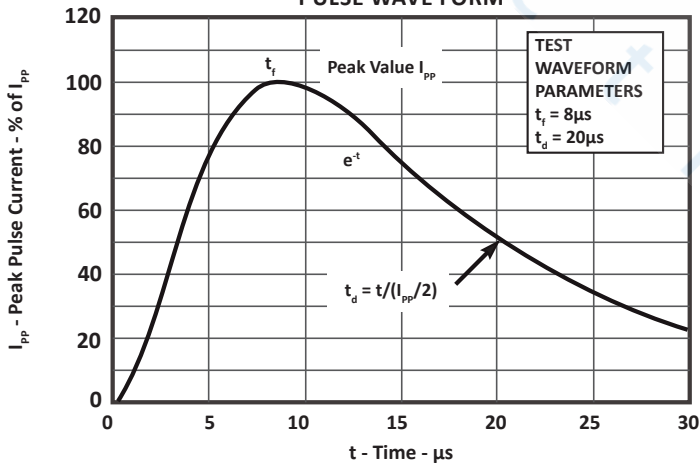
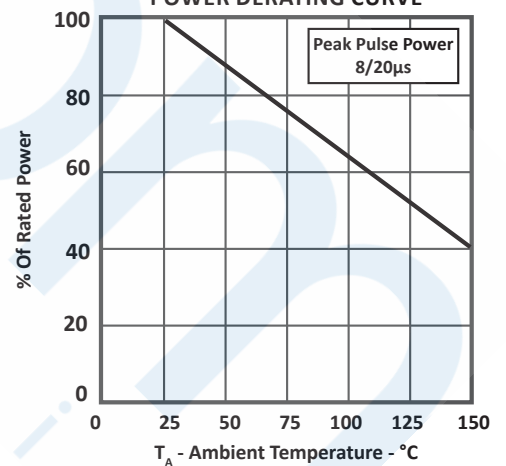
PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	$T_L$	-55 to 150	°C
Storage Temperature	$T_{STG}$	-65 to 150	°C
Peak Pulse Power ( $t_p = 8/20\mu s$ ) - Between IO and Ground	$P_{PP}$	500	Watts
Peak Pulse Power ( $t_p = 2/10\mu s$ ) - Between IO and Ground	$P_{PP}$	600	Watts

**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 $\mu s$ @ IP = 25A $V_C$ VOLTS	MAXIMUM LEAKAGE CURRENT @ $V_{WM}$ $I_D$ $\mu A$	TYPICAL CAPACITANCE @ 2V, 1MHz C pF
TRV24-2LC	2LC	24	29	10	10	20	0.01	3.0

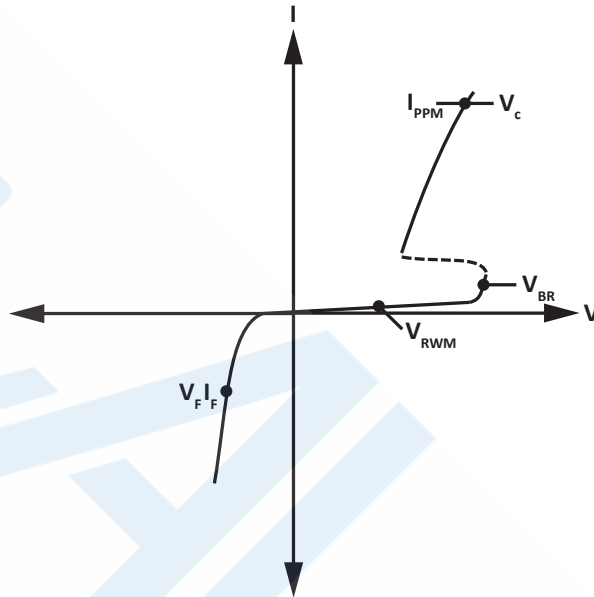
**NOTES**

- All measurements made between IO and ground.

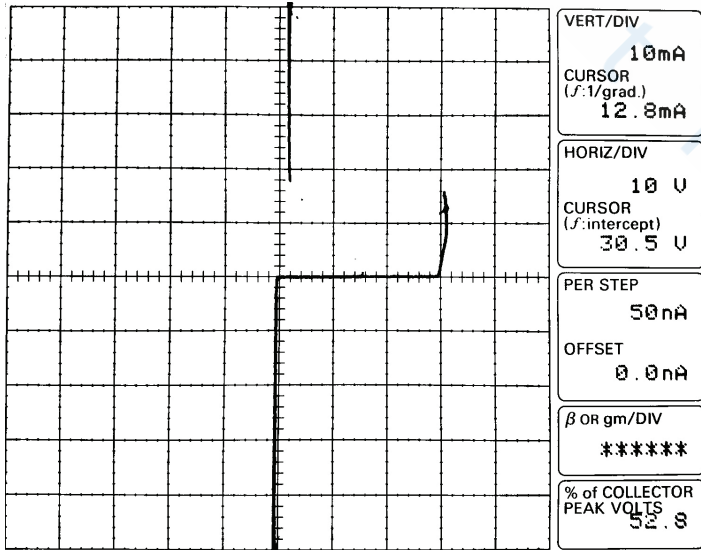
**FIGURE 1  
PULSE WAVE FORM**

**FIGURE 2  
POWER DERATING CURVE**


**TYPICAL DEVICE CHARACTERISTICS**

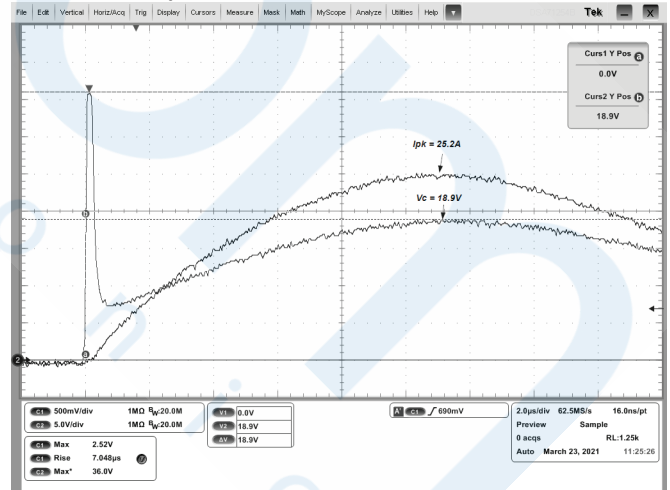
**FIGURE 3**  
**VOLTAGE AND CURRENT CHARACTERISTICS**



**FIGURE 4**  
**V-I CHARACTERISTICS IO TO GND**



**FIGURE 5**  
**8/20μs SURGE PERFORMANCE IO TO GND**



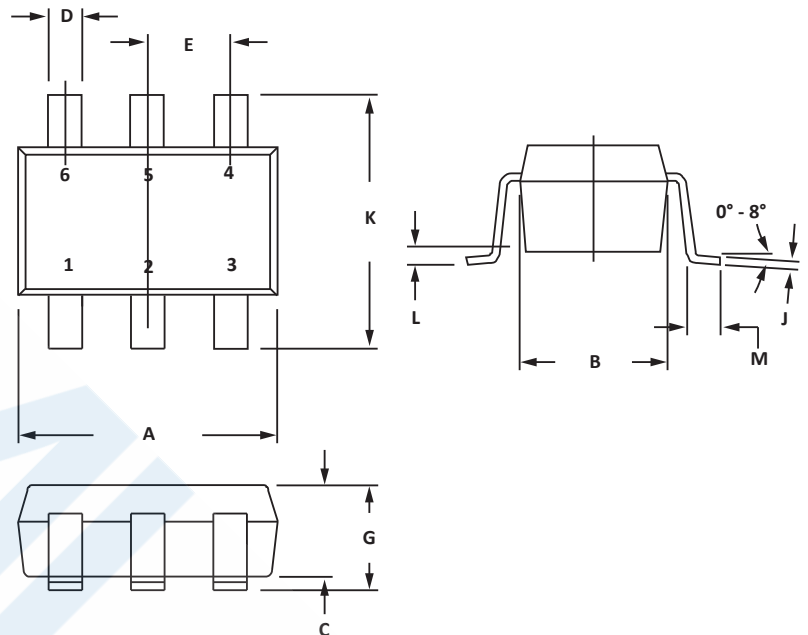
## SOT-23-6 PACKAGE INFORMATION

## 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

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

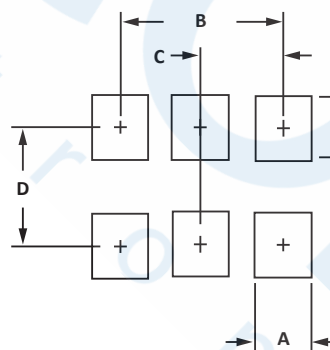


## PAD LAYOUT DIMENSIONS

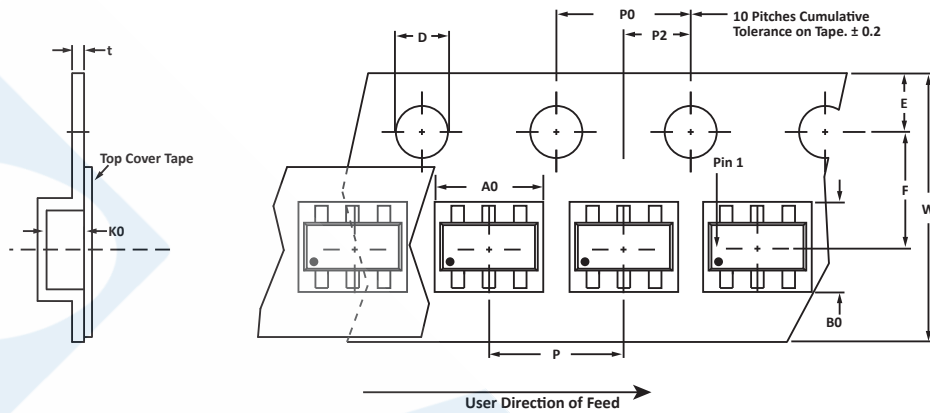
DIM	MILLIMETERS	INCHES
	NOMINAL	NOMINAL
A	0.70	0.028
B	1.90	0.074
C	0.95	0.037
D	2.40	0.094
E	1.00	0.039

## 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. Suffix - T73 = 7" Reel - 3,000 pieces per 8mm tape.
4. 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
TRV24-2LC	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 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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