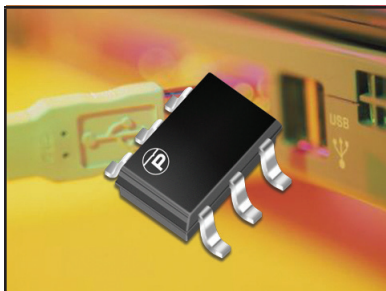


## ULTRA LOW CAPACITANCE STEERING DIODE ARRAY



**SOT-23-6 PACKAGE**

### DESCRIPTION

The ET724 is an ultra low capacitance steering diode array. This device provides circuit protection for interfaces and wireless bus applications and portable electronics. The ET724 is ideally suited to protect USB data I/O ports against the effects of ESD and EFT.

The ET724 meets the requirements of IEC 61000-4-2 (ESD) and IEC 61000-4-4 (EFT). At higher operating frequencies or faster edge rates, insertion loss and signal integrity are a major concern. The ET724 offers an ultra low capacitance and low leakage current in a SOT-23-6 package.

### 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 (Surge): 12A, 8/20 $\mu$ s - Level 1(Line-Gnd) & Level 2(Line-Line)
- ESD Protection > 25 kilovolts
- Low Clamping Voltage
- Protection for 4 Lines
- Low Leakage Current < 100nA
- Ultra Low Capacitance: 3pF Typical
- RoHS Compliant
- REACH Compliant

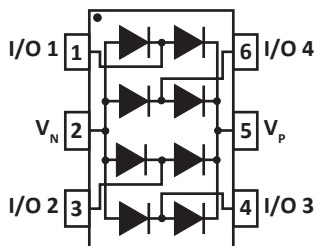
### APPLICATIONS

- USB & FireWire Interface Ports
- SMART Phones
- Gigabit Ethernet
- Sensor Interfaces
- Set-Top Box Interfaces

### MECHANICAL CHARACTERISTICS

- Molded JEDEC SOT-23-6 Package
- Approximate Weight: 16 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:  
Pure-Tin - Sn, 100: 260-270°C
- 8mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

### PIN CONFIGURATION



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

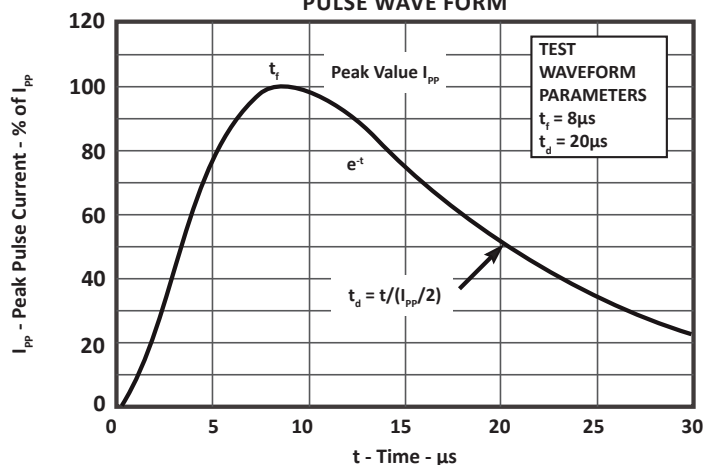
PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	$T_A$	-55 to 150	°C
Storage Temperature	$T_{STG}$	-55 to 150	°C
Continuous Power Dissipation	$P_{PC}$	125	mW

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

PART NUMBER	DEVICE MARKING	REPETITIVE PEAK REVERSE VOLTAGE (Note 1) $V_{RRM}$ VOLTS	TYPICAL FORWARD VOLTAGE 8/20 $\mu$ s @ 1A $V_F$ VOLTS	MAXIMUM PEAK PULSE FORWARD CURRENT @ 8/20 $\mu$ s $I_{FM}$ AMPS	MAXIMUM REVERSE LEAKAGE CURRENT (Note 2) $V_{RRM}$ $I_R$ nA	MAXIMUM QUIESCENT SUPPLY CURRENT (Note 3) @ 20V $I_{RQ}$ nA	TYPICAL CAPACITANCE @ 0V, 1MHz $C_J$ pF
ET724	724	20	2	12	10	100	3

**NOTE**

- $V_{RRM}$  is  $+V_{CC}$  for pin 5,  $-V_{EE}$  for pin 2. Pin 2 also represents ground for unidirectional applications.
- +20V from pin 5 to 1, 5 to 4, 5 to 3 and 5 to 6. -20V from pin 2 to 1, 2 to 3, 2 to 4 and 2 to 6.
- +20V from pin 5 to 2.

**FIGURE 1  
PULSE WAVE FORM**


## TYPICAL DEVICE CHARACTERISTICS

FIGURE 2  
NON-REPETITIVE PEAK PULSE CURRENT CAPABILITY

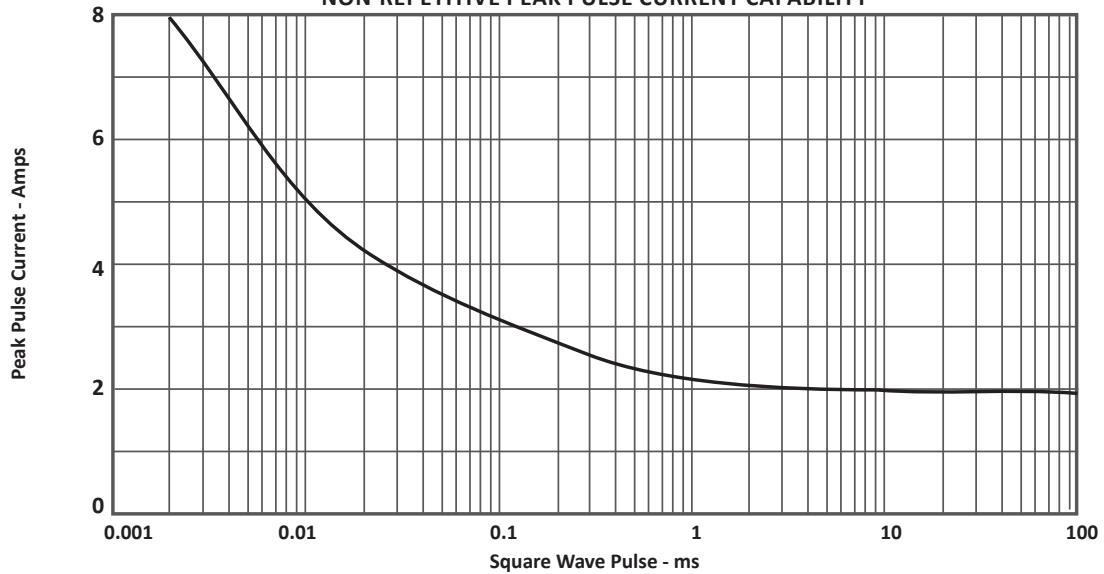


FIGURE 3  
TYPICAL LOW CURRENT FORWARD VOLTAGE DROP

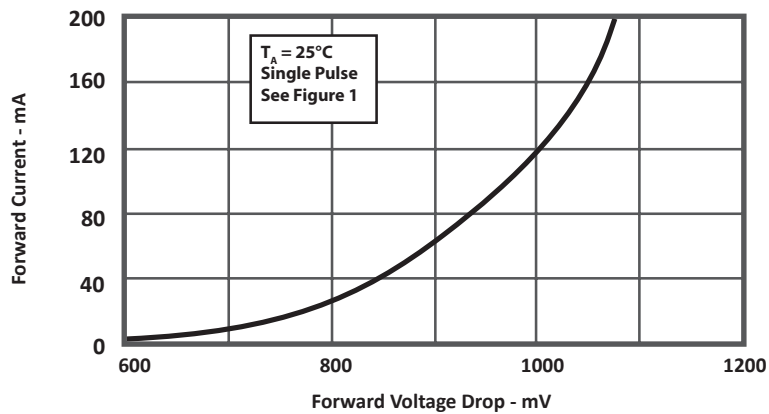
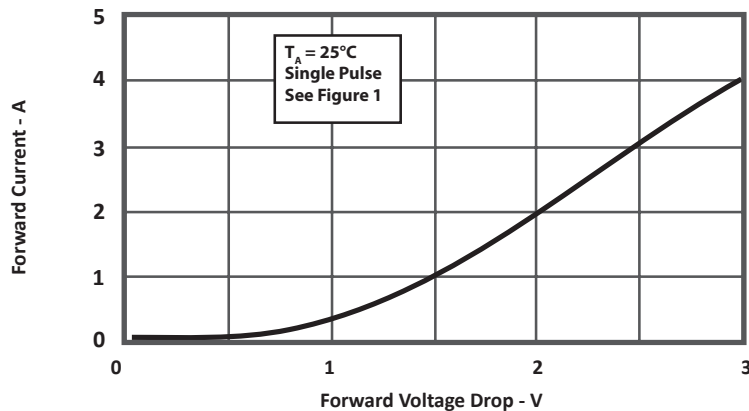


FIGURE 4  
LOW FORWARD CURRENT VS FORWARD VOLTAGE



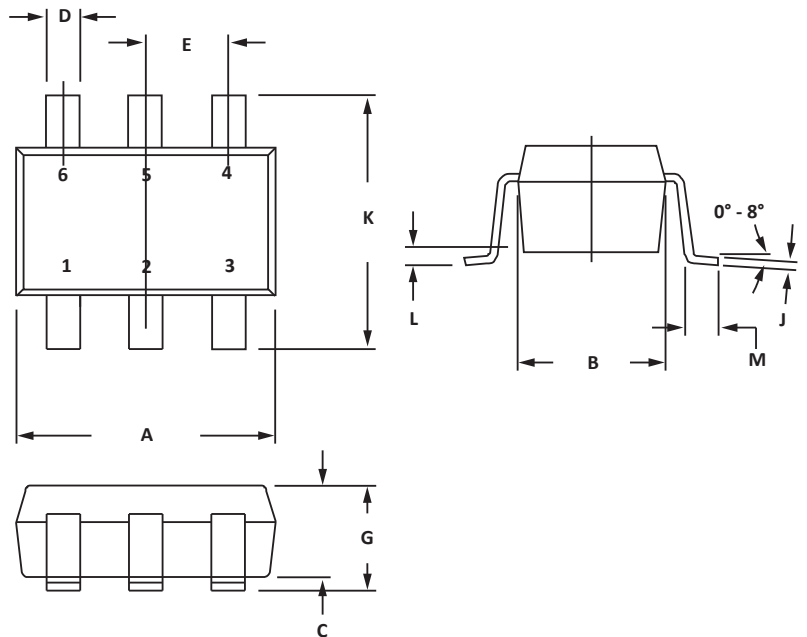
## SOT-23-6 PACKAGE INFORMATION

### 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.

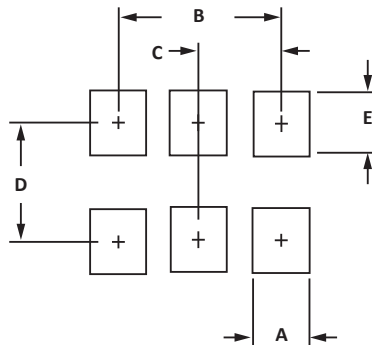


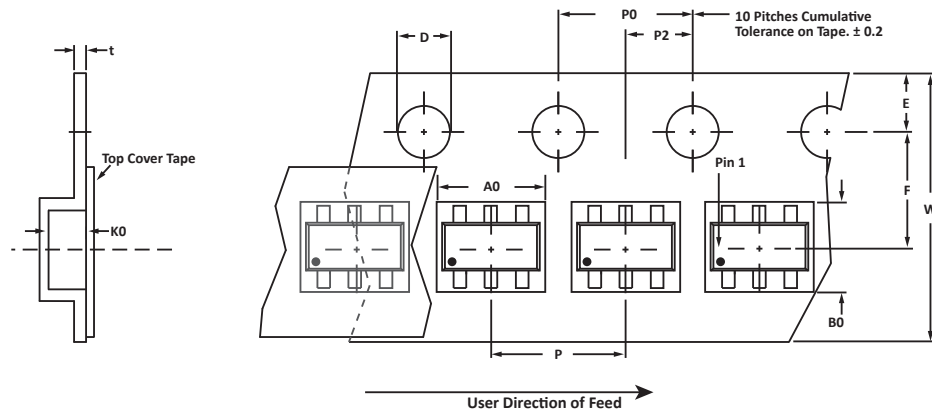
### PAD LAYOUT DIMENSIONS

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 - T7 = 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.

Package outline, pad layout and tape specifications per document number 06013.R5 2/11

**ORDERING INFORMATION**

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
ET724	-LF	-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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