

ULTRA LOW CAPACITANCE STEERING DIODE ARRAY



DESCRIPTION

The ET720 is a low capacitance and low leakage steering diode array capable of protecting up to 14 high speed data lines. Its ultra low capacitance allows maintenance of signal integrity for high-speed data lines while protecting the circuit ICs from the damage of severe transients. An extremely low leakage current makes the ET720 suitable for battery powered devices.

The ET720 is available in a SO-16 package. This device meets all the applicable voltage immunity standards, including IEC 61000-4-2 (ESD), 61000-4-4 (EFT) and 61000-4-5 (Surge).

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 μ s - Level 1(Line-Gnd) & Level 2(Line-Line)
- Provides 14 Lines of Protection
- Low Leakage Current: < 20nA
- Ultra Low Capacitance: 3pF Typical
- RoHS Compliant
- REACH Compliant

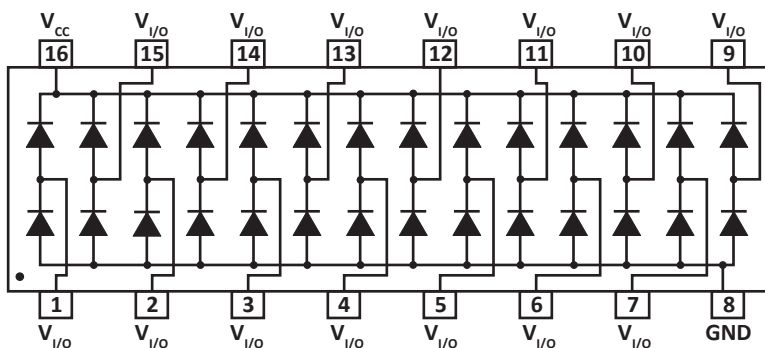
APPLICATIONS

- Ethernet 10/100/1000 Base T
- SMART Phones
- Portable Electronics
- FireWire & USB Interfaces

MECHANICAL CHARACTERISTICS

- Molded JEDEC SO-16 Package
- Approximate Weight: 0.15 grams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- 16mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

PIN CONFIGURATION



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

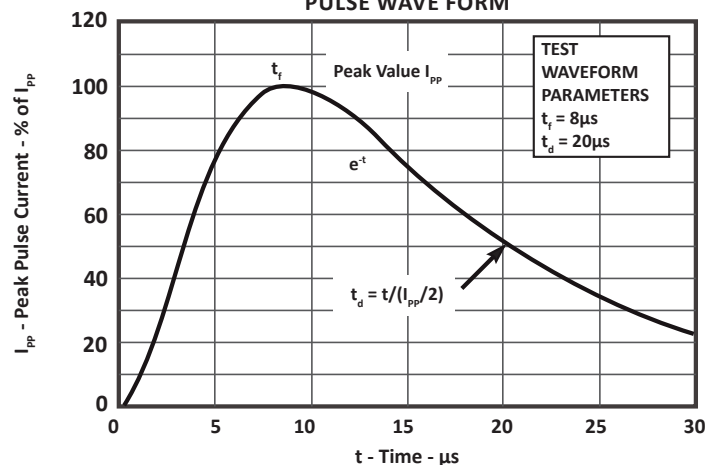
PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	T_A	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C
Continuous Power Dissipation	P_{PC}	145	mW

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER	REPETITIVE PEAK REVERSE VOLTAGE (Note 1) V_{RRM} VOLTS	TYPICAL FORWARD VOLTAGE @ 1A V_F VOLTS	MAXIMUM PEAK PULSE FORWARD CURRENT @ 8/20µs I_{FM} AMPS	MAXIMUM REVERSE LEAKAGE CURRENT V_{RRM} @ 20V I_R nA	MAXIMUM QUIESCENT SUPPLY CURRENT @ 20V I_{RQ} nA	TYPICAL CAPACITANCE (Note 2) @0V, 1MHz C_J pF
ET720	30	2	12	20	200	3

NOTE

- V_{RRM} is $+V_{CC}$ for pin 16, $-V_{EE}$ for pin 1.
- Measure C_J between any V_{IO} pins to ground and divide by 2.

**FIGURE 1
PULSE WAVEFORM**


TYPICAL DEVICE CHARACTERISTICS

FIGURE 2
NON-REPETITIVE PEAK PULSE CURRENT CAPABILITY

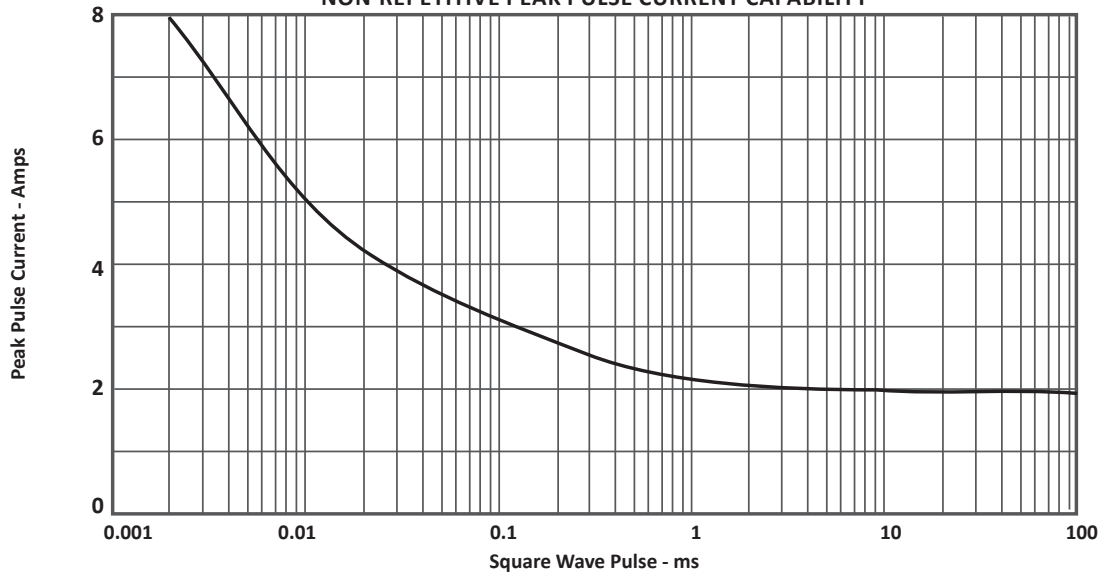


FIGURE 3
TYPICAL LOW CURRENT FORWARD VOLTAGE DROP

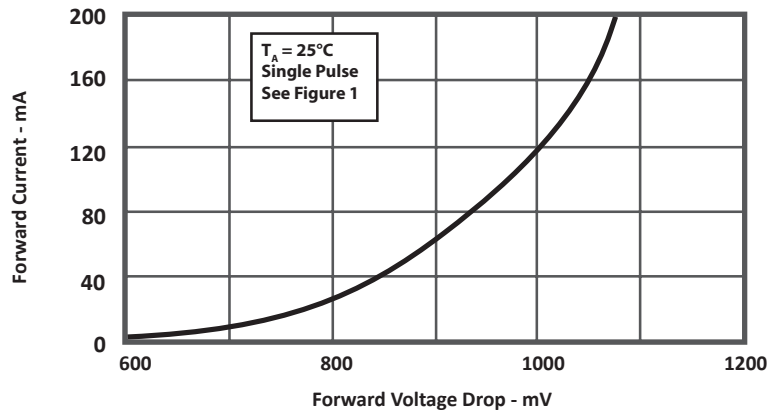
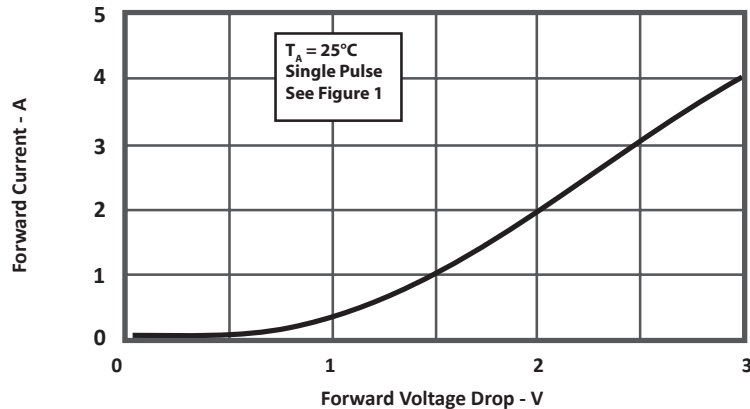


FIGURE 4
LOW FORWARD CURRENT VS FORWARD VOLTAGE



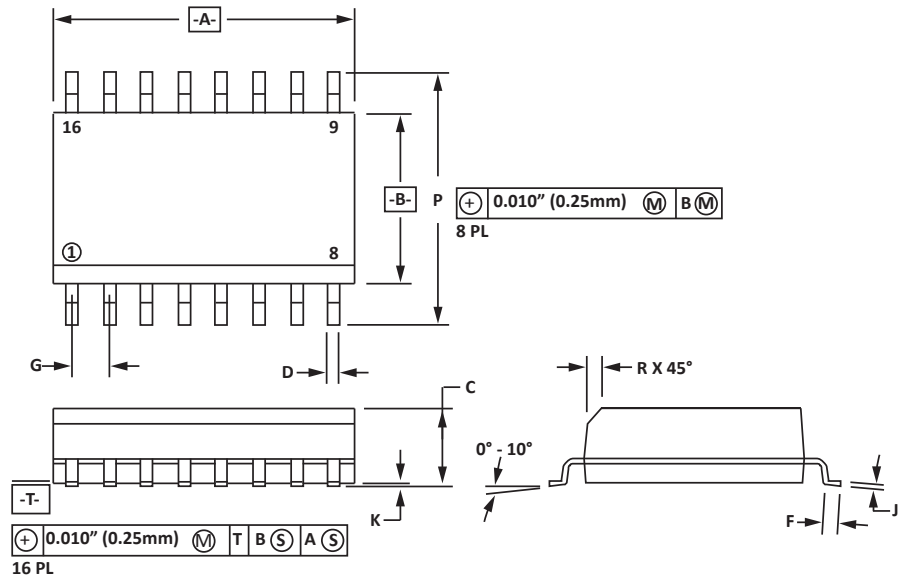
SO-16 PACKAGE INFORMATION

OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.80	10.00	0.386	0.393
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27 BSC		0.05 BSC	
J	0.18	0.25	0.007	0.009
K	0.10	0.25	0.004	0.008
P	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019

NOTES

- T = Seating plane and datum surface.
- Dimensions "A" and "B" are datum.
- Dimensions "A" and "B" do not include mold protrusion.
- Maximum mold protrusion is 0.015" (0.380mm) per side.
- Dimensioning and tolerances per ANSI Y14.5M, 1982.
- Dimensions are exclusive of mold flash and metal burrs.

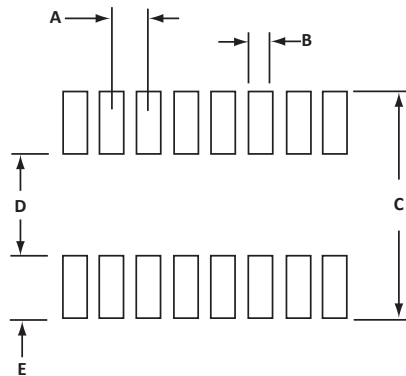


PAD LAYOUT DIMENSIONS

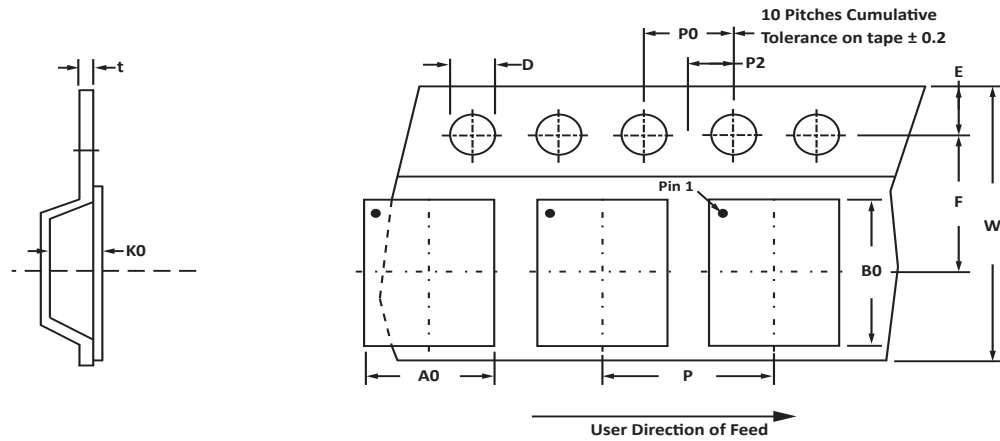
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.14	1.40	0.045	0.055
B	0.64	0.89	0.025	0.035
C	6.22	-	0.245	-
D	3.94	4.17	0.155	0.165
E	1.02	1.27	0.040	0.050

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")	16mm	6.50 ± 0.10	10.30 ± 0.10	2.10 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	16.00 ± 0.30	4.00 ± 0.12	2.00 ± 0.10	4.00 ± 0.10	0.25

NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T7 = 7" Reel - 1,000 pieces per 16mm tape.
- Suffix - T13 = 13" Reel - 2,500 pieces per 16mm tape.
- Bulk product shipped in tubes of 48 pieces per tube.
- Marking on Part - part number, date code, logo and pin one defined by dot on top of package.

Package outline per document number 06007.R3 1/11.

ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
ET720	-LF	-T7	1,000	7"	48
ET720	-LF	-T13	2,500	13"	48

COMPANY INFORMATION

COMPANY PROFILE

ProTek Devices, based in Tempe, Arizona USA, is a manufacturer of Transient Voltage Suppression (TVS) products designed specifically for the protection of electronic systems from the effects of lightning, Electrostatic Discharge (ESD), Nuclear Electromagnetic Pulse (NEMP), inductive switching and EMI/RFI. With over 25 years of engineering and manufacturing experience, ProTek designs TVS devices that provide application specific protection solutions for all electronic equipment/systems.

ProTek Devices Analog Products Division, also manufactures analog interface, control, RF and power management products.

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