LOW CAPACITANCE TVS ARRAY

DFN-4 PACKAGE

DESCRIPTION

The ESD4-DFN is a multi-line, low capacitance , 7pF @ 2.5V bias transient voltage suppressor array. This device is designed to protect applications such as wireless telecommunication devices, PCMCIA cards and other portable electronics from the damaging effects of ESD and EFT.

The ESD4-DFN has a working voltage of 5.0V and a minimum breakdown voltage of 6.0V. The ESD4-DFN is ideally suited to protect 5V DC lines and data I/O ports against ESD and EFT and meets IEC 61000-4-2 (ESD) and IEC 61000-4-4 (EFT) requirements. At higher operating frequencies or faster edge rates, insertion loss and signal integrity are a major concern. Packaged in the DFN-4 plastic case, the ESD4-DFN should be placed near the connector to provide maximum protection.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A - 5/50ns
- 25 Watts Peak Pulse Power per Line (tp = 8/20µs)
- ESD Protection > 25 kilovolts
- Protects up to 4 Data Lines
- RoHS Compliant
- REACH Compliant

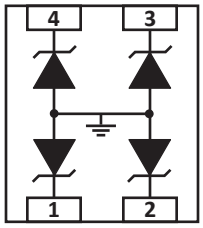
APPLICATIONS

- SMART Phones
- LCD Display Panel
- Portable Electronics
- SMART Cards

MECHANICAL CHARACTERISTICS

- Molded JEDEC DFN-4 Package
- Approximate Weight: 2 milligrams
- Lead-Free Nickel Paladium Gold
- Solder Reflow Temperature:
  Nickel-Paladium-Gold: Ni/Pd/Au, 96/3.5/0.5: 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	-40 to 85	°C
Storage Temperature	T_{STG}	-55 to 150	°C
Soldering Temperature for 10 seconds	T_L	265	°C
Typical Forward Voltage @ 10mA	V_F	1.2	V
Peak Pulse Power (tp = 8/20µs) - See Figure 1	P_{PP}	25	Watts

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified						
PART NUMBER	**DEVICE MARKING**	**RATED STAND-OFF VOLTAGE** V_{WM} **VOLTS**	**MINIMUM BREAKDOWN VOLTAGE @ 1mA** $V_{(BR)}$ **VOLTS**	**MAXIMUM CLAMPING VOLTAGE (Fig. 2)** **@** I_P **= 1A** V_C **VOLTS**	**MAXIMUM REVERSE LEAKAGE CURRENT @ 3V** I_D **µA**	**TYPICAL CAPACITANCE (Note 1) @2.5V, 1MHz** **C pF**
ESD4-DFN	4	5.0	6.0	12.0	0.1	7

NOTES
1. 10pF @ 0V, 1MHz Typical.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

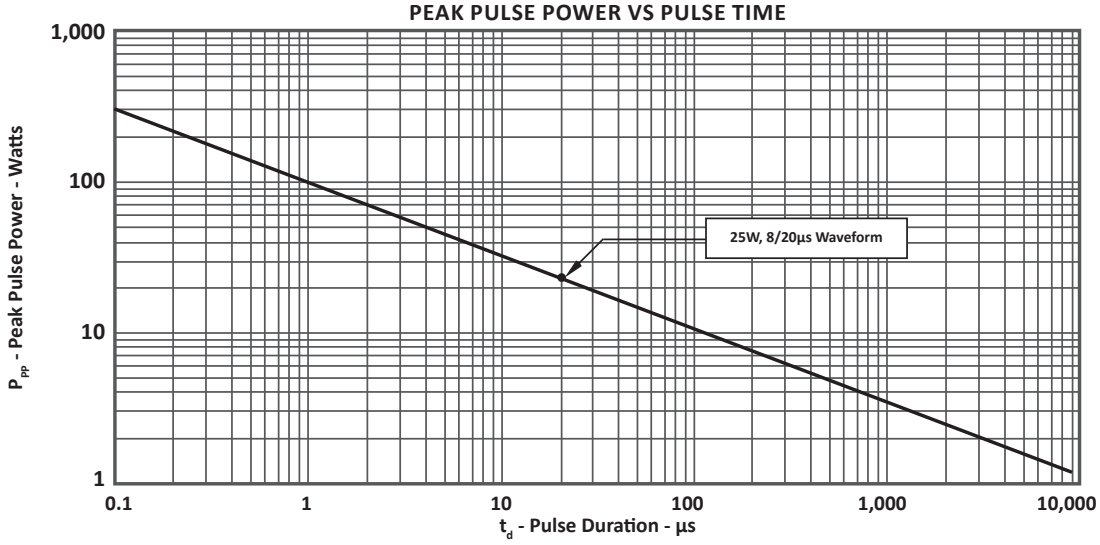
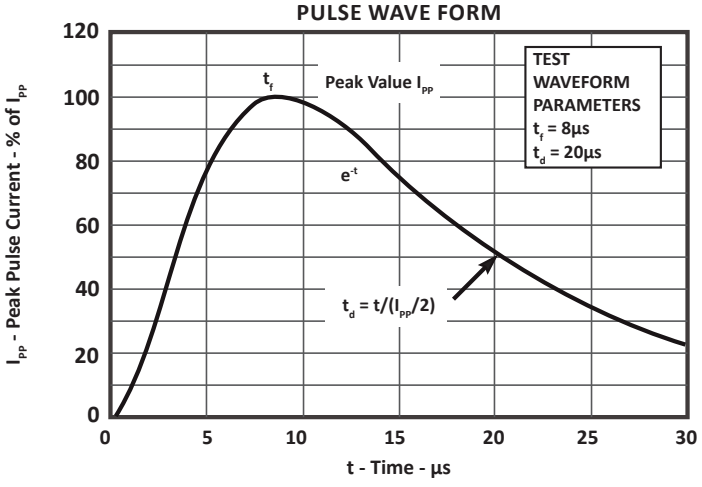


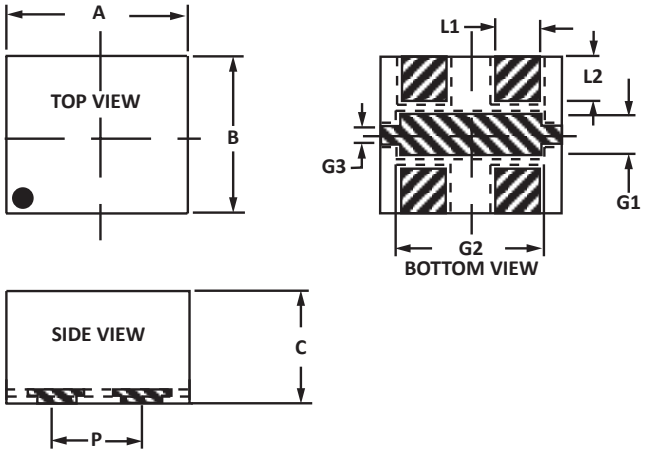
FIGURE 2
PULSE WAVE FORM



DFN-4 PACKAGE INFORMATION

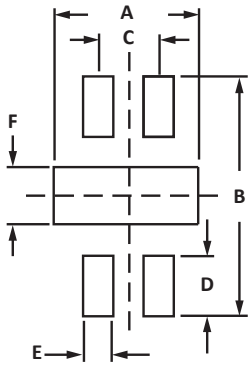
OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.95	1.05	0.038	0.042
B	0.95	1.05	0.038	0.042
C	0.45	0.55	0.018	0.022
L1	0.20	0.30	0.008	0.012
L2	0.20	0.30	0.008	0.012
G1	0.25	0.35	0.010	0.014
G2	0.60	0.70	0.023	0.028
G3	0.05	0.15	0.002	0.006
P	0.45	0.55	0.018	0.022

NOTES
1. Controlling dimension: millimeters.
2. Dimensioning and tolerances per ANSI Y14.M, 1985.
3. Dimension "B" applies to terminal and is measured between 0.25 and 0.30mm from terminal.
4. Coplanarity applies to the exposed pad as well as the terminals.
5. Dimension "P" is BSC.

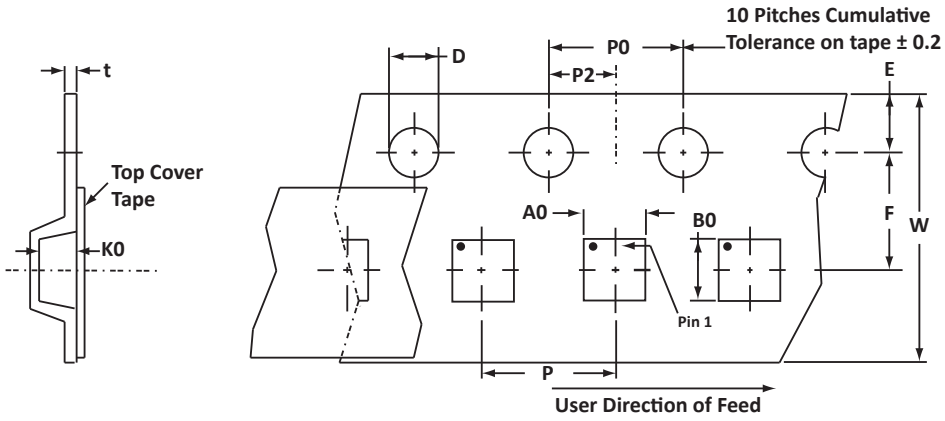


PAD LAYOUT DIMENSIONS		
DIM	MILLIMETERS	INCHES
	NOMINAL	NOMINAL
A	0.60	0.024
B	1.30	0.051
C	0.50 BSC	0.020 BSC
D	0.40	0.016
E	0.30	0.012
F	0.20	0.008

NOTES
1. Controlling dimension: millimeters.



TAPE AND REEL



SPECIFICATIONS												
REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	1.17 ± 0.10	1.17 ± 0.10	0.66 ± 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).

Package outline, pad layout and tape specifications per document number 06073.R1 3/11.

ORDERING INFORMATION					
BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
ESD4-DFN	-LF	-T73	3,000	7"	n/a

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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