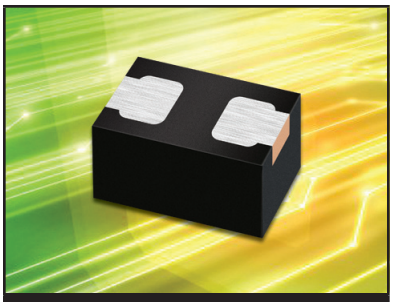
MINIATURE TVS ARRAY



DFN-2 PACKAGE

DESCRIPTION

The PLW0501P is a transient voltage suppressor array (TVS) designed to protect applications such as wireless telecommunication devices and portable electronics. The PLW0501P is available in a unidirectional configuration with a working voltage of 5.0V and a minimum breakdown voltage of 6.0V. This device is rated for 250 Watt peak pulse power using the 8/20µs waveform, which is sufficient protection for tertiary type lightning threats at key interface locations.

The PLW0501P is also suited to protect data lines against ESD and EFT. This device meets the IEC 61000-4-2 and IEC 61000-4 requirements. At higher operating frequencies or faster edge rates, insertion loss and signal integrity are a major concern. This device in conjunction with passive components integrated into a TVS/filter network can be used for EMI/RFI protection.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air 15kV, Contact 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- 250 Watts Peak Pulse Power per Line (tp = 8/20µs)
- ESD Protection > 25 kilovolts
- Cable Discharge Event (CDE) Protection
- Unidirectional Configuration
- Provides 1 Line of Protection
- RoHS Compliant
- REACH Compliant

APPLICATIONS

- Ethernet 10/100/1000 Base T
- VoIP Phones
- Portable Electronics
- USB Interfaces

MECHANICAL CHARACTERISTICS

- Molded JEDEC DFN-2-0402 Package
- Approximate Weight: 0.8 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
Peak Pulse Power (tp = 8/20µs) - See Figure 1	P_{PP}	250	Watts
Peak Pulse Current (tp = 8/20µs)	I_{PP}	16	A
Soldering Temperature for 10 seconds	T_L	265	°C

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	TYPICAL FORWARD VOLTAGE @10mA V_F VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @I_P = 5A V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @I_P = 16A V_C VOLTS	MAXIMUM LEAKAGE CURRENT @V_{WM} I_D µA	TYPICAL CAPACITANCE @0V, 1MHz C pF
PLW0501P	K	5.0	6.0	0.8	9.8	12.5	5	120

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

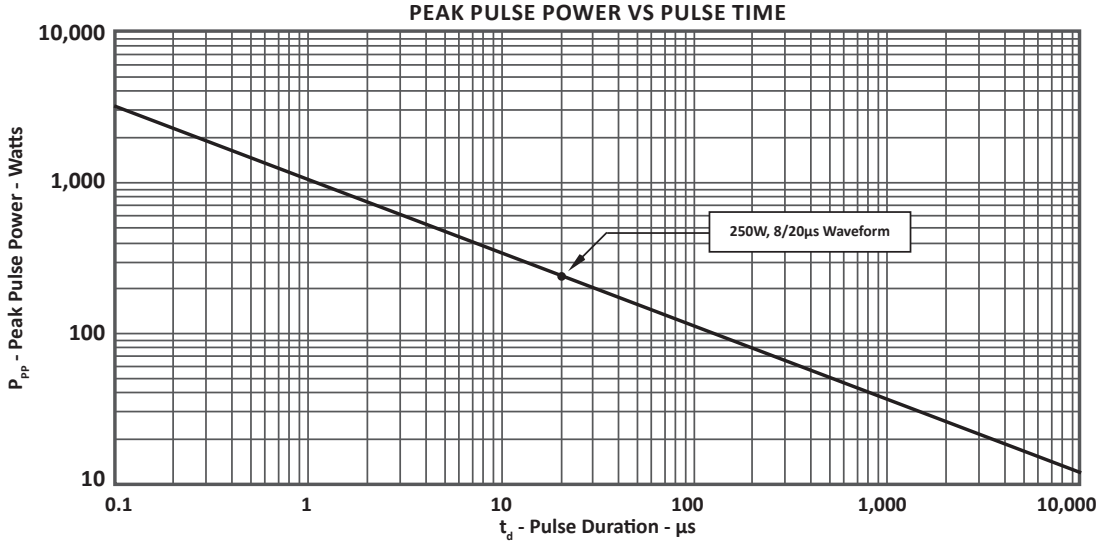
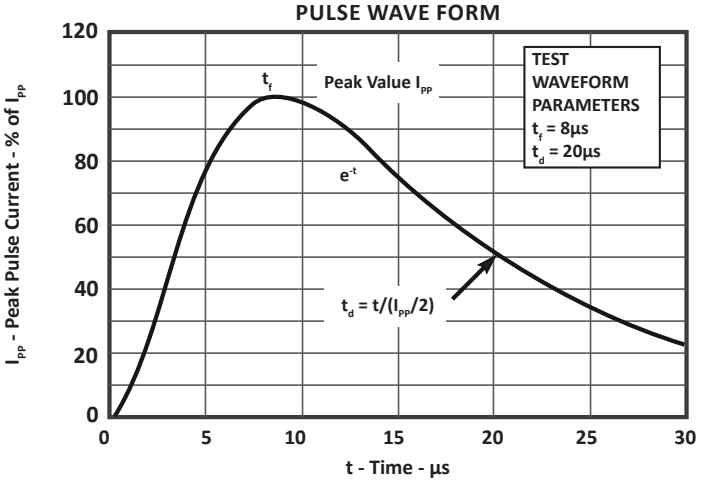


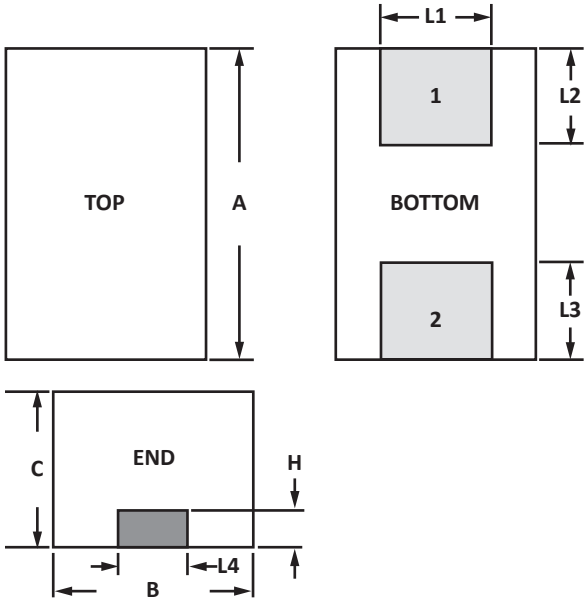
FIGURE 2
PULSE WAVE FORM



DFN-2-0402 PACKAGE INFORMATION

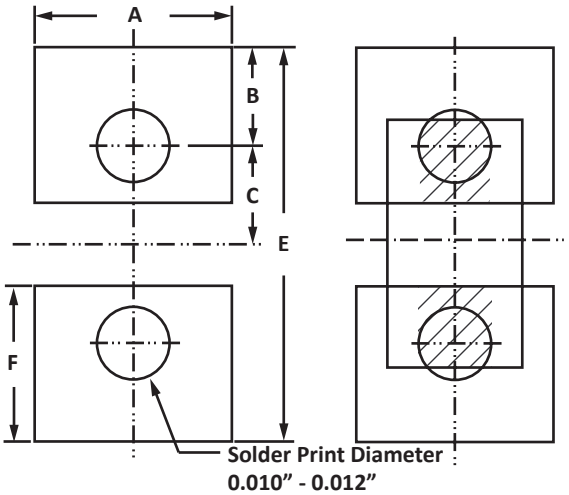
OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.99	1.04	0.039	0.041
B	0.58	0.64	0.023	0.025
C	0.43	0.48	0.017	0.019
H	0.13	0.18	0.005	0.007
L1	0.28	0.33	0.011	0.013
L2	0.23	0.28	0.009	0.011
L3	0.23	0.28	0.009	0.011
L4	0.18	0.23	0.007	0.009

NOTES
1. Dimensioning and tolerances per ANSI Y14.M, 1985.
2. Controlling dimension: inches.

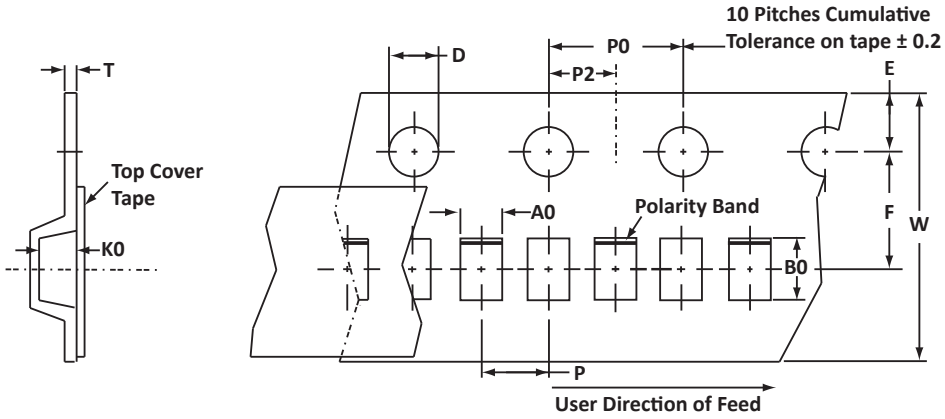


PAD LAYOUT DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.737	0.787	0.029	0.031
B	0.331	0.381	0.013	0.015
C	0.356	0.406	0.014	0.016
E	1.423	1.523	0.056	0.060
F	0.534	0.584	0.021	0.023

NOTES
1. Controlling dimension: inches.
2. Decimal tolerances for mounting pad: ±0.003" (±0.08 mm).



TAPE AND REEL



SPECIFICATIONS												
REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	0.70 ± 0.05	1.15 ± 0.05	0.60 ± 0.003	1.55 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.05	2.00 ± 0.05	0.25

NOTES
1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Empty pocket beneath sprocket holes.
4. Polarity Band on unidirectional devices only.
5. Suffix - T73 = 7" Reel - 3,000 pieces per 8mm tape (sprocket hole skipped).
6. Marking on Part - marking code (see page 2) and polarity band.

Package outline, pad layout and tape specifications per document number 06094.R1 3/11 - Option 1.

ORDERING INFORMATION					
BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PLW0501P	-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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