PROTEK DEVICES
Only One Name Means ProTek'Tion™

ULTRA LOW CAPACITANCE TVS ARRAY

DFN-2 PACKAGE

DESCRIPTION

The PAM18DF2L0521 is an ultra low capacitance transient voltage suppressor array, designed to protect automotive applications from the damaging effects of Electrostatic Discharge and Electrical Fast Transients.

The PAM18DF2L0521 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. This device offers an ultra low capacitance and low leakage current in a miniature DFN-2-0402 package.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air 15kV, Contact 8kV
- Compatible with IEC 61000-4-4 (EFT)
- Compatible with IEC 61000-4-5 (Surge)
- 80 Watts Peak Pulse Power per Line (tp = 8/20μs)
- ESD Protection
- Low Clamping Voltage
- Protects One Bidirectional Line
- Ultra Low Capacitance: 0.4 pF (Typical)
- RoHS Compliant
- REACH Compliant

APPLICATIONS

- Automotive Applications

MECHANICAL CHARACTERISTICS

- Molded JEDEC DFN-2-0402 Package
- Approximate Weight: 2 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
Peak Pulse Power (tp = 8/20µs) - See Figure 1	P_{PP}	80	Watts
Operating Temperature	T_A	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°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	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @I_p = 1A V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ 8/20µS V_C @ I_{PP}	MAXIMUM LEAKAGE CURRENT @V_{WM} I_D µA	TYPICAL CAPACITANCE @0V, 1MHz C_J pF
PAM18DF2L0521	H	5.0	6.0	14.0	20.0V @ 4.0A	1	0.4

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

80W, 8/20µs Waveform

P_{PP} - Peak Pulse Power - Watts

t_d - Pulse Duration - µs

FIGURE 2
PULSE WAVE FORM

Peak Value I_{PP}

t_f

e^{-t}

$t_d = t/(I_{PP}/2)$

TEST WAVEFORM PARAMETERS
$t_f = 8µs$
$t_d = 20µs$

I_{PP} - Peak Pulse Current - % of I_{PP}

t - Time - µs
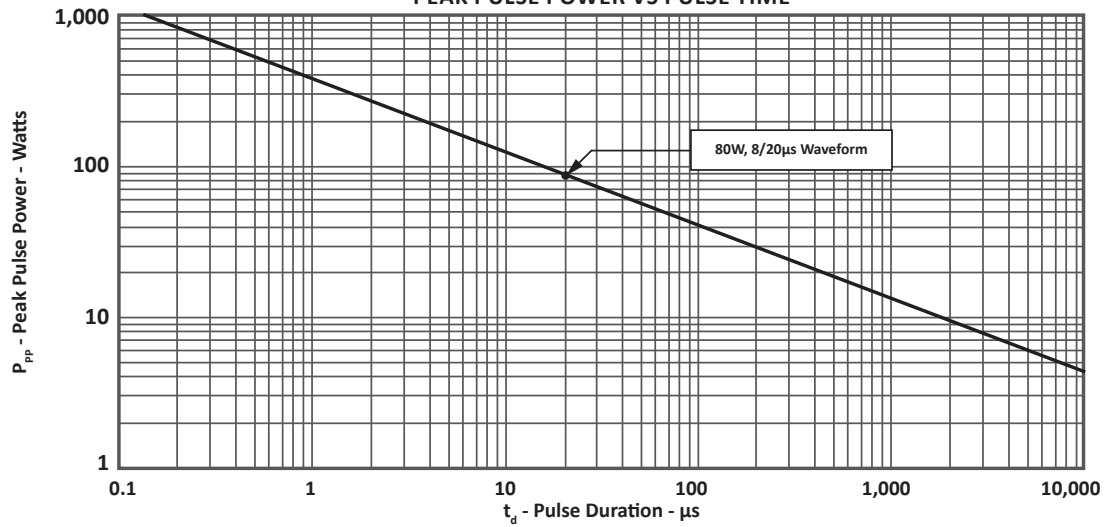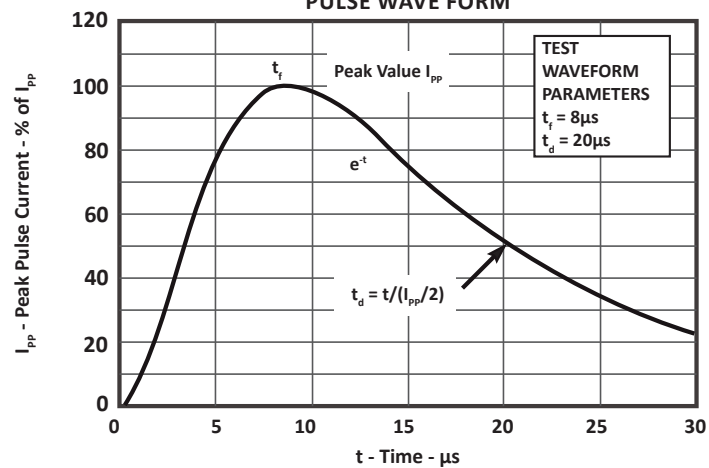
DFN-2-0402 PACKAGE INFORMATION

OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.90	1.05	0.035	0.041
B	0.51	0.65	0.02	0.024
C	0.51	0.60	0.02	0.024
H	0~0.10	0~0.10	0~0.004	0~0.004
L1	0.45	0.55	0.018	0.022
L2	0.18	0.30	0.007	0.012
L4	0.65 BSC		0.026 BSC	

NOTES
1. Dimensioning and tolerances per ANSI Y14.M, 1985.
2. Controlling dimension: inches.
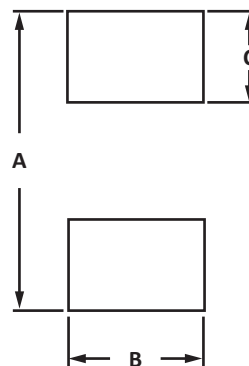3. Dimensions are exclusive of mold flash and metal burrs.

L1

BOTTOM VIEW

L4

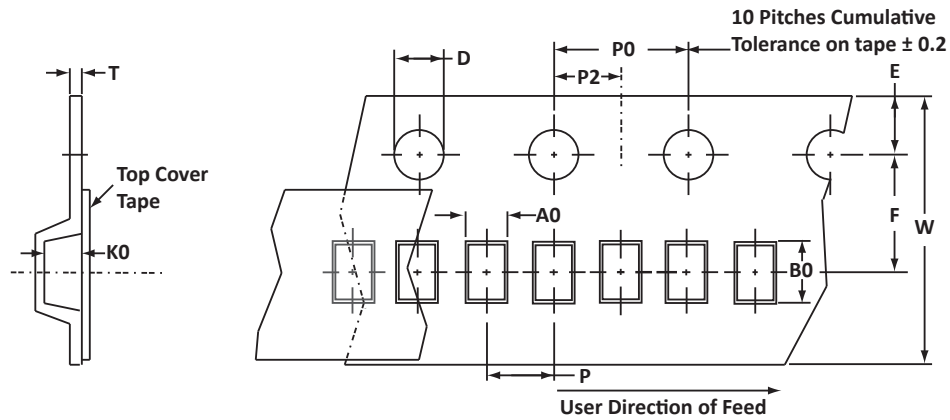L2

A

TOP VIEW

B

C

H

SIDE VIEW
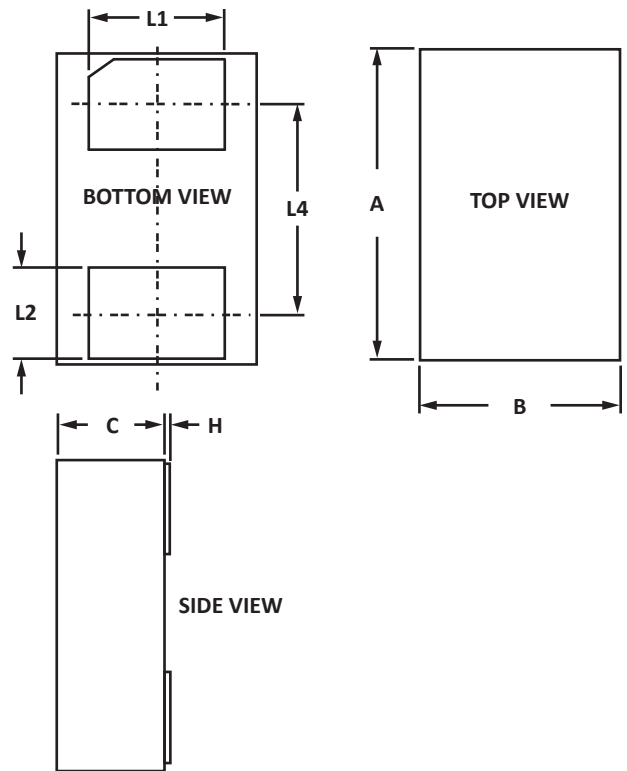
PAD LAYOUT DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.30	1.50	0.051	0.059
B	0.60	0.70	0.024	0.028
C	0.40	0.55	0.016	0.022

NOTES
1. Controlling dimension: inches.

C

A

B

TAPE AND REEL

10 Pitches Cumulative Tolerance on tape ± 0.2

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 ± 0.10	0.56 ± 0.05	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. Suffix - T75 = 7" Reel - 5,000 pieces per 8mm tape.
4. Marking on Part - marking code (see page 2).

Package outline, pad layout and tape specifications per document number 06094.R1 3/11 - Option 2.

ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PAM18DF2L0521	n/a	-T75	5,000	7"	n/a

This device is only available in a Lead-Free configuration.

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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