

## ULTRA LOW CAPACITANCE TVS ARRAY



### DESCRIPTION

The PAM18DF2L0621 is an ultra low capacitance transient voltage suppressor array, designed to protect automotive computing applications from the damaging effects of Electrostatic Discharge and Electrical Fast Transients.

The PAM18DF2L0621 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

- *AEC-Q101 Qualified*
- Meets or Exceeds 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 ( $t_p = 8/20\mu s$ )
- ESD Protection
- Low Clamping Voltage
- Protects One Bidirectional Line
- Ultra Low Capacitance: 0.4 pF (Typical)
- RoHS Compliant
- REACH Compliant

### APPLICATIONS

- Automotive

### MECHANICAL CHARACTERISTICS

- Molded JEDEC DFN-2-0402 Package
- Approximate Weight: 2 milligrams
- Lead-Free Ni/Pd/Au Plating
- 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

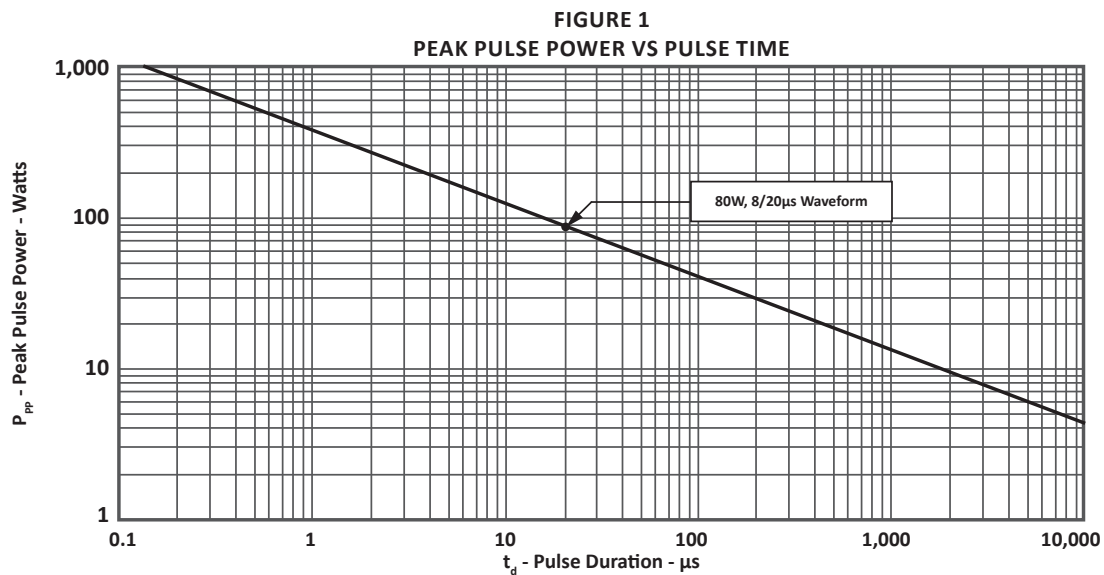


**TYPICAL DEVICE CHARACTERISTICS**
**MAXIMUM RATINGS @ 25°C Unless Otherwise Specified**

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
IEC 61000-4-2 ESD Level 4 Rating - Contact	-	25.0	kV
IEC 61000-4-2 ESD Level 4 Rating - Air	-	30.0	kV

**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
PAM18DF2L0621	P	5.5	6.1	14.0	18.0V @ 3.0A	0.1	0.4



## TYPICAL DEVICE CHARACTERISTICS

FIGURE 2  
PULSE WAVE FORM

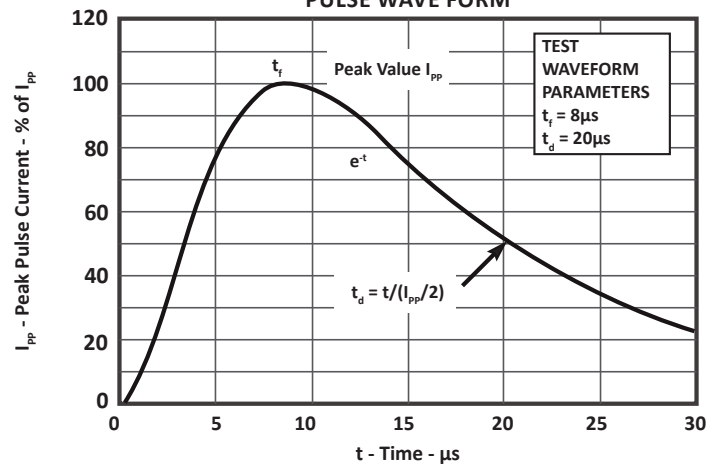
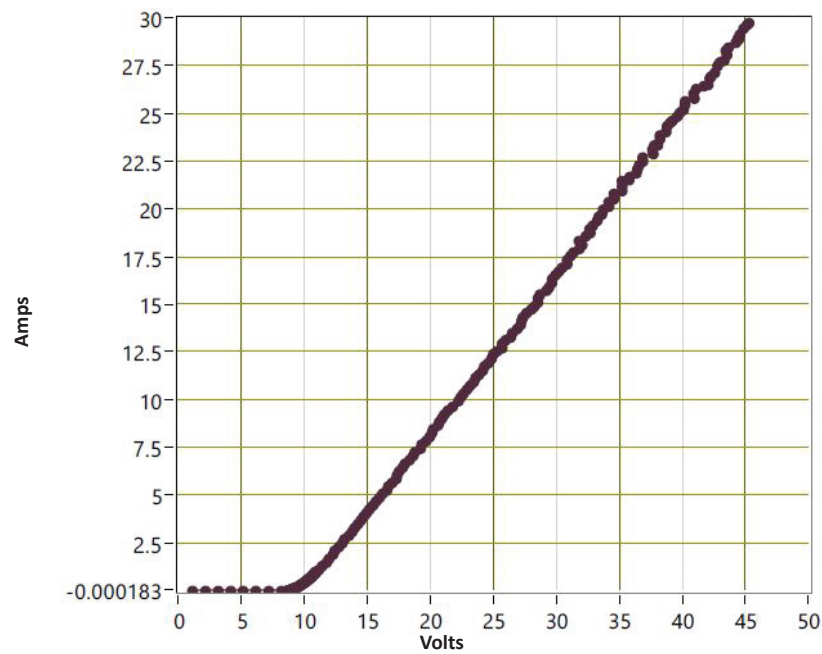
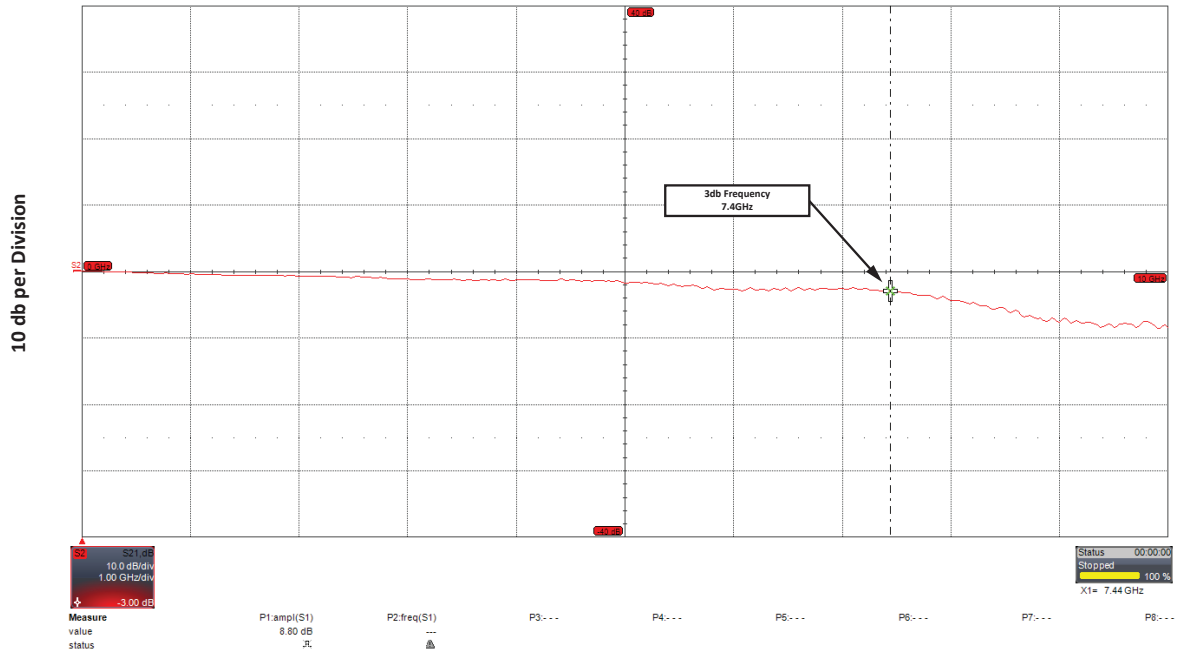


FIGURE 3  
TLP CURVE



TYPICAL DEVICE CHARACTERISTICS

FIGURE 4  
INSERTION LOSS



1.6GHz per Division  
Indicative Representation of Insertion Loss

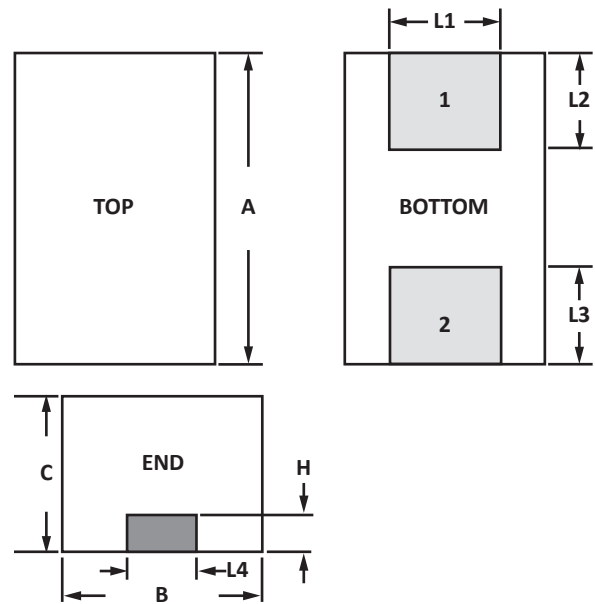
## PACKAGE INFORMATION

### 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.

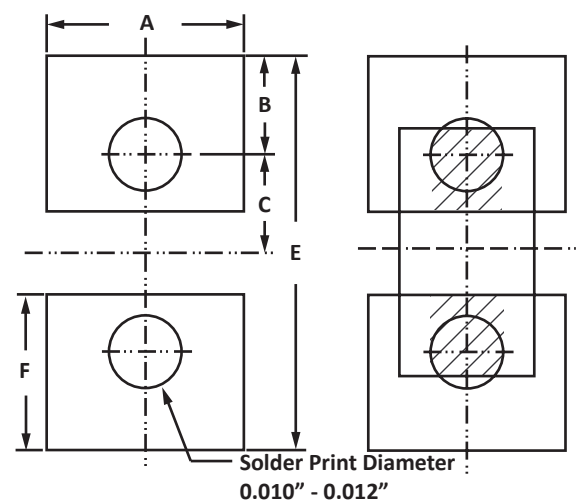


### PAD LAYOUT DIMENSIONS

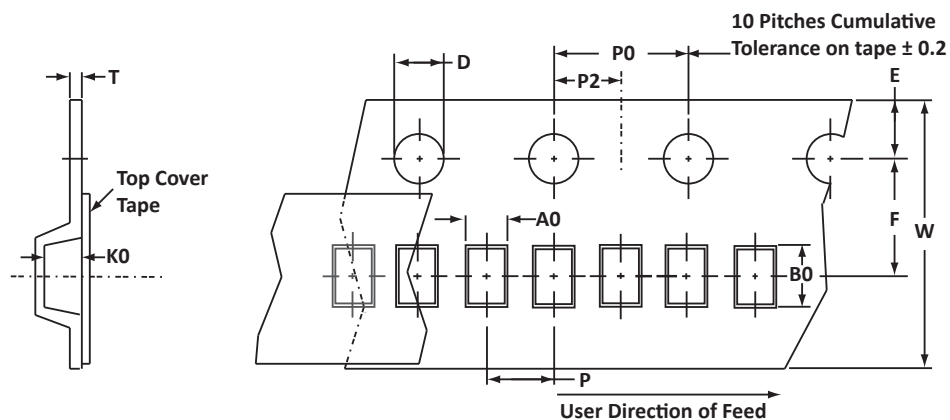
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.737	0.787	0.029	0.031
B	0.331	0.381	0.013	0.015
C	0.356	0.406	0.014	0.016
E	1.423	1.523	0.056	0.060
F	0.534	0.584	0.021	0.023

#### NOTES

1. Controlling dimension: inches.
2. Decimal tolerances for mounting pad:  $\pm 0.003''$  ( $\pm 0.08$  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 ± 0.10	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

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T710 = 7" Reel - 10,000 pieces per 8mm tape.
- Marking on Part - marking code (see page 2).

## ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PAM18DF2L0621	n/a	-T710	10,000	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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