

EMI FILTER/TVS ARRAY**DFN-16 PACKAGE****DESCRIPTION**

The PAM24DF1605 is a DFN-16, 8 line low pass filter array with integrated TVS diodes. The PAM24DF1605 is designed to suppress unwanted EMI/RFI signals and provide ESD protection for automotive applications.

With a desired cutoff frequency of 110MHz, the PAM24DF1605P provides good EMI/RFI attenuation better than 35dB in the 800MHz - 3GHz bandwidth. This blocks RF noises from GSM, DCS or Bluetooth which can affect the baseband chipset and other blocks. Coupled with the integrated TVS diodes, this device is able to meet IEC 61000-4-2 (ESD) and 61000-4-4 (EFT) immunity requirements.

FEATURES

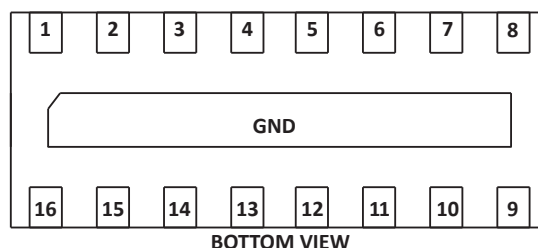
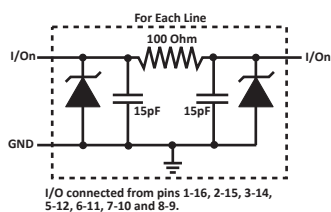
- Compatible with IEC 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A - 5/50ns
- ESD Protection > 25 kilovolts
- EMI Filtering/TVS Low Pass Filters
- >25dB Attenuation from 800MHz to 3GHz
- Protects up to 8 Data Lines
- RoHS Compliant
- REACH Compliant

APPLICATIONS

- Automotive Applications

MECHANICAL CHARACTERISTICS

- Molded JEDEC DFN-16SLP (Low Profile) Package
- Approximate Weight: 7 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- 12mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

CIRCUIT DIAGRAM & PIN CONFIGURATION**BOTTOM VIEW**



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 |
| DC Power per Resistor | P | 100 | mW |
| Typical Resistance $\pm 20\%$ | R | 100 | OHMS |
| 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 | MAXIMUM REVERSE LEAKAGE CURRENT @ 3V I_D μA | TYPICAL FORWARD VOLTAGE @ 10mA V_F VOLTS | MINIMUM ATTENUATION @ 800-3000 MHz dB | CUT-OFF FREQUENCY (50 OHMS I/O) ZERO BIAS fC MHz | TYPICAL CAPACITANCE @ 2.5V, 1MHz C pF |
|-------------|----------------|--|---|---|---|--|--|--|
| PAM24DF1605 | 168S | 5.0 | 6.0 | 0.1 | 0.8 | 25 | 110 | 30 |

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
INSERTION LOSS

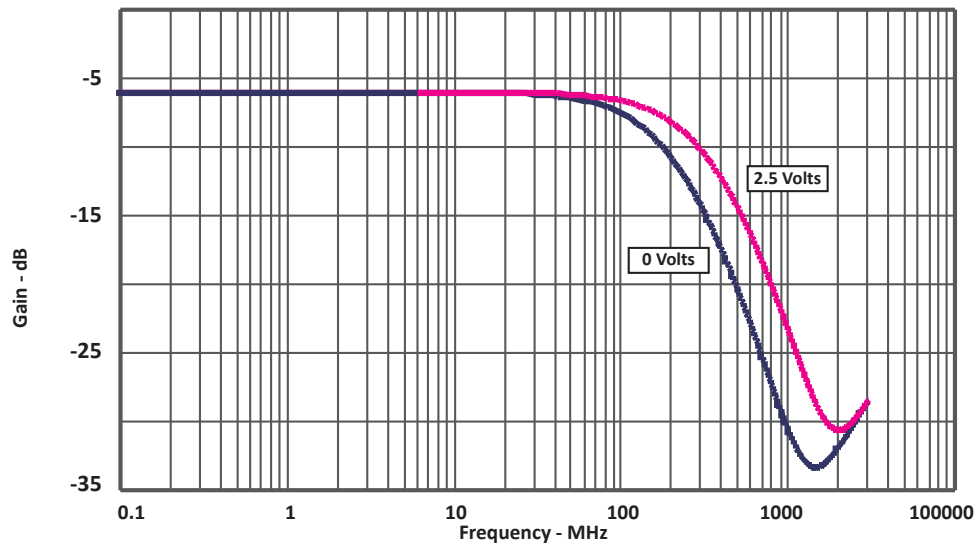
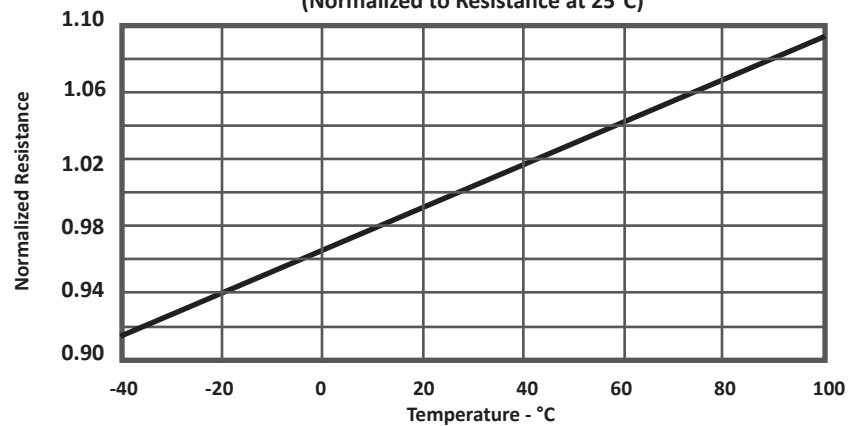
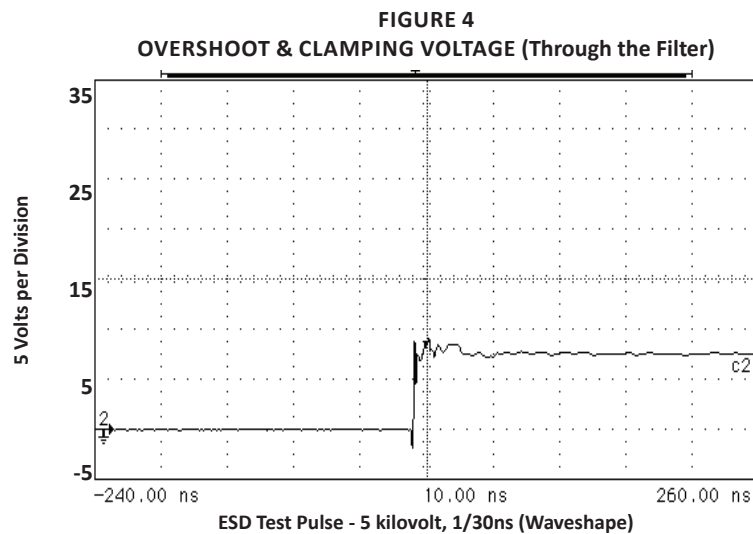
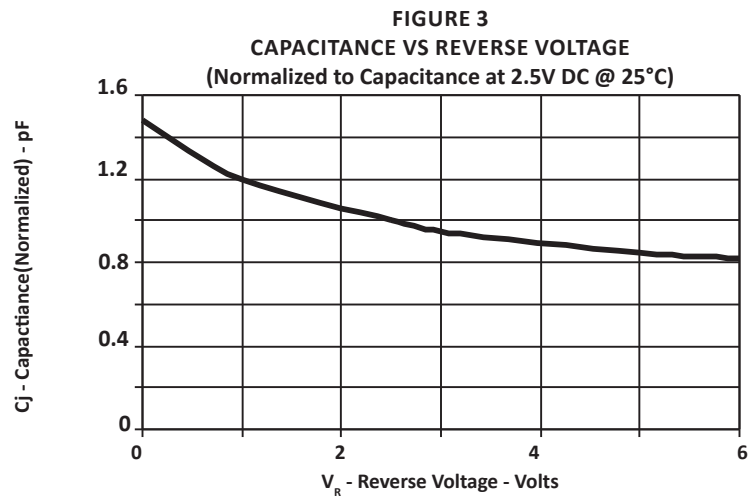


FIGURE 2
RESISTANCE VS TEMPERATURE
(Normalized to Resistance at 25°C)



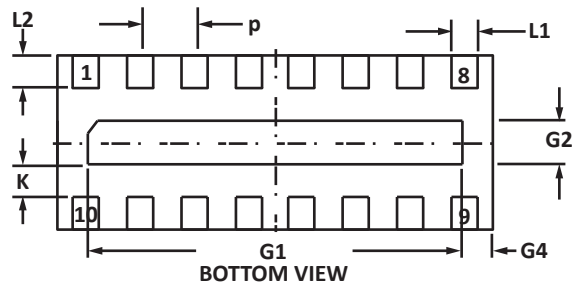
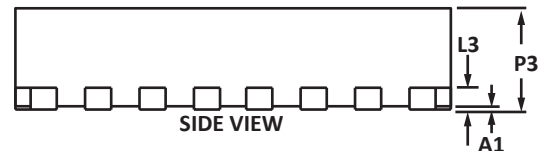
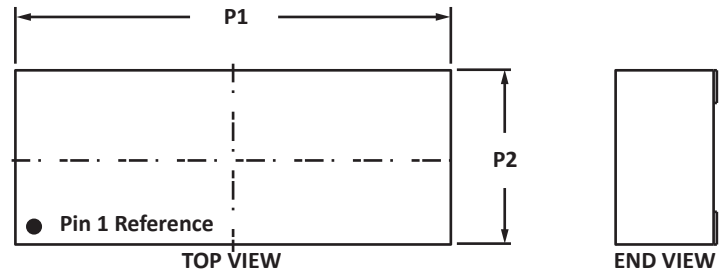
TYPICAL DEVICE CHARACTERISTICS

DFN-16SLP(LOW PROFILE) PACKAGE INFORMATION
OUTLINE DIMENSIONS

| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|------|-----------|-------|
| | MIN | MAX | MIN | MAX |
| P1 | 3.20 | 3.40 | 0.126 | 0.134 |
| P2 | 1.25 | 1.45 | 0.049 | 0.057 |
| P3 | 0.45 | 0.60 | 0.018 | 0.024 |
| L1 | 0.19 | 0.28 | 0.007 | 0.011 |
| L2 | 0.23 | 0.30 | 0.009 | 0.012 |
| L3 | 0.13 | 0.18 | 0.005 | 0.007 |
| p | 0.40 BSC | | 0.016 BSC | |
| G1 | 2.70 | 2.90 | 0.106 | 0.114 |
| G2 | 0.35 | 0.45 | 0.014 | 0.018 |
| G4 | 0.25 | 0.35 | 0.010 | 0.014 |
| A1 | 0.00 | 0.05 | 0.00 | 0.002 |
| K | 0.33 | 0.40 | 0.013 | 0.016 |

NOTES

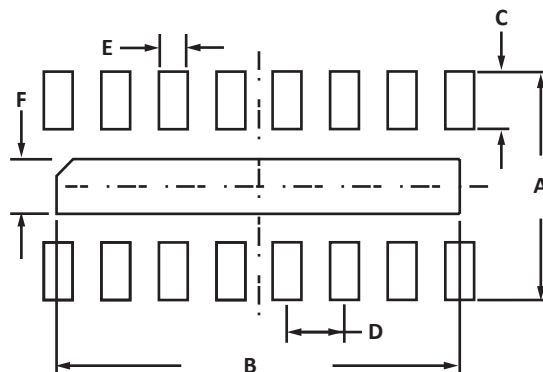
1. Controlling dimension: millimeters.
2. Dimensioning and tolerances per ANSI Y14.M, 1985.
3. Dimension L1 applies to terminal and is measured between 0.25 and 0.30mm from terminal.
4. Coplanarity applies to the exposed pad as well as the terminals.


PAD LAYOUT DIMENSIONS

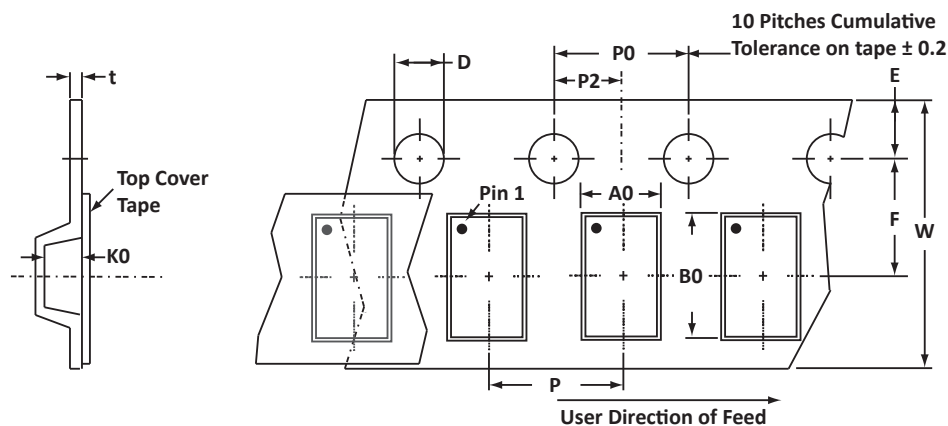
| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|------|-----------|-------|
| | MIN | MAX | MIN | MAX |
| A | 1.56 | 1.76 | 0.061 | 0.069 |
| B | 2.10 | 2.30 | 0.083 | 0.091 |
| C | 0.51 | 0.61 | 0.020 | 0.024 |
| D | 0.40 BSC | | 0.016 BSC | |
| E | 0.25 | 0.35 | 0.010 | 0.014 |
| F | 0.20 | 0.30 | 0.008 | 0.012 |

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") | 12mm | 1.60 ± 0.10 | 3.6 ± 0.10 | 0.60 ± 0.10 | 1.50 ± 0.10 | 1.75 ± 0.10 | 5.50 | 12.00 ± 0.30 | 4.00 ± 0.10 | 2.00 ± 0.05 | 4.00 ± 0.10 | 0.30 ± 0.05 |

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) and polarity dot.

Package outline, pad layout and tape specifications per document number 06081.R0 3/11.

ORDERING INFORMATION

| BASE PART NUMBER | LEADFREE SUFFIX | TAPE SUFFIX | QTY/REEL | REEL SIZE | TUBE QTY |
|------------------|-----------------|-------------|----------|-----------|----------|
| PAM24DF1605 | N/A | -T73 | 3,000 | 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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