

3000 WATT TVS COMPONENT



DO-214AB PACKAGE

APPLICATIONS

- Automotive

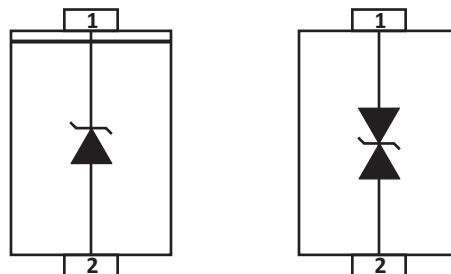
FEATURES

- **AEC-Q101 Qualified**
- UL File Recognition #E208219
- IEC Compatibility 61000-4-2 (ESD)
- IEC Compatibility 61000-4-4 (EFT)
- IEC Compatibility 61000-4-5 (Surge)
- Glass Passivated Chip
- 3000 Watts Peak Pulse Power per Line ($t_p = 10/1000\mu s$)
- Low Leakage Current
- Unidirectional and Bidirectional Configurations
- Excellent Clamping Capability
- Very Fast Response Time
- Available in Multiple Voltages
- RoHS Compliant
- REACH Compliant

MECHANICAL CHARACTERISTICS

- Molded JEDEC DO-214AB Package
- Approximate Weight: 0.248 grams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- 16mm Tape and Reel Per EIA Standard 481
- Terminal: Solderable per MIL-STD-750, Method 2026
- Flammability Rating UL 94V-0

PIN CONFIGURATIONS



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 = 10/1000µs) - See Figure 1 and Note 2 | P_{PP} | 3000 | Watts |
| Power Dissipation on Infinite Heatsink at $T_L = 75^\circ\text{C}$ | P_D | 6.0 | Watts |
| Peak Forward Surge Current, 8.3ms single half sinewave - Unidirectional Only (Note 2) | I_{FSM} | 300 | Amps |
| Maximum Instantaneous Forward Voltage at 100A - Unidirectional Only | V_F | 3.5 | V |

NOTE

1. Non-repetitive current pulse per Figure 2 and derated above $T_A = 25^\circ\text{C}$ per Figure 2.
2. Measured on 8.3ms single half sinewave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

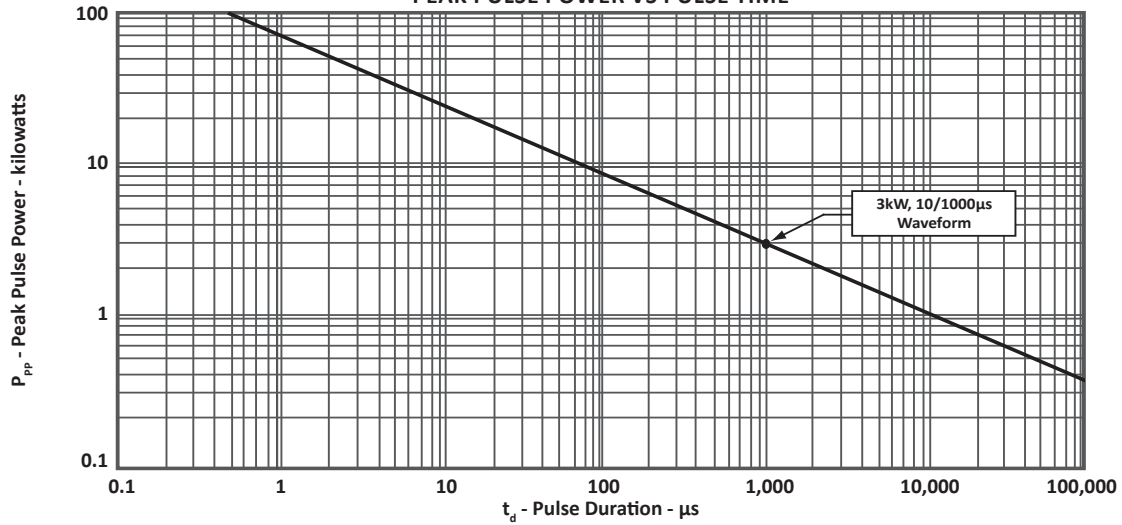
| PART NUMBER (Note 1-2) | DEVICE MARKING | | REVERSE STAND-OFF VOLTAGE V_{RWM} VOLTS | BREAKDOWN VOLTAGE $V_{(BR)} @ I_T$ VOLTS | | TEST CURRENT $@ I_T$ mA | MAXIMUM CLAMPING VOLTAGE (Fig. 2) $@ I_P$ V_C VOLTS | MAXIMUM REVERSE SURGE CURRENT $@ I_{PP}$ AMPS | MAXIMUM REVERSE LEAKAGE CURRENT $@ V_{RWM}$ I_R µA |
|---------------------------|----------------|-----|---|--|-------|-----------------------------------|---|---|---|
| | UNI | BI | | MIN | MAX | | | | |
| PAM32DOAB20A | PEV | DEV | 20.0 | 22.20 | 24.50 | 5 | 32.4 | 92.5 | 2 |
| PAM32DOAB22A | PEX | DEX | 22.0 | 24.40 | 26.90 | 5 | 35.5 | 84.5 | 2 |
| PAM32DOAB36A | PFP | DFP | 36.0 | 40.00 | 44.20 | 5 | 58.1 | 51.6 | 2 |

NOTE

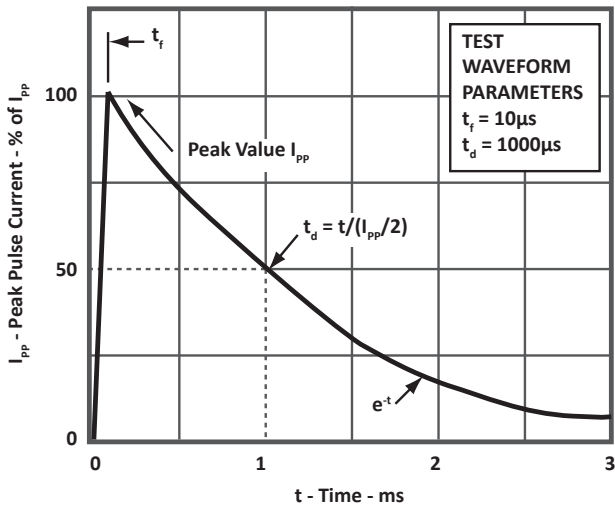
1. 5% tolerance.
2. Add suffix 'CA' after part number to specify a bidirectional device, i.e., PAM32DOAB22CA.

TYPICAL DEVICE CHARACTERISTICS

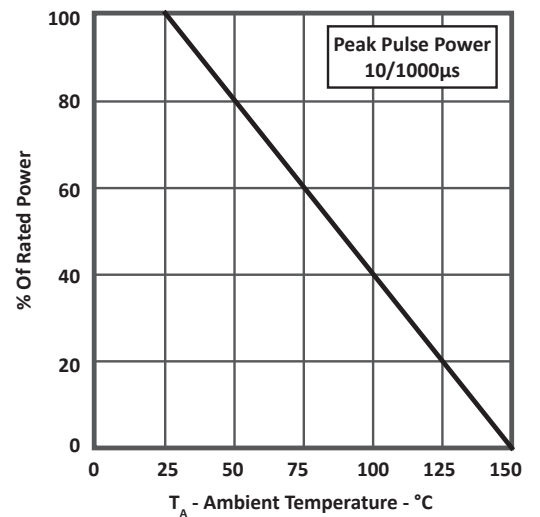
**FIGURE 1
PEAK PULSE POWER VS PULSE TIME**



**FIGURE 2
PULSE WAVEFORM**



**FIGURE 3
POWER DERATING CURVE**



TYPICAL DEVICE CHARACTERISTICS

FIGURE 4
TYPICAL JUNCTION CAPACITANCE

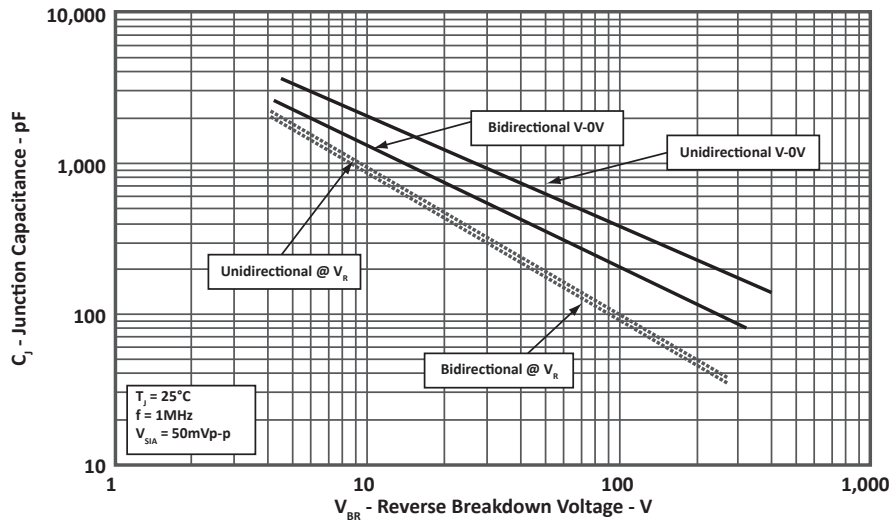


FIGURE 5
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

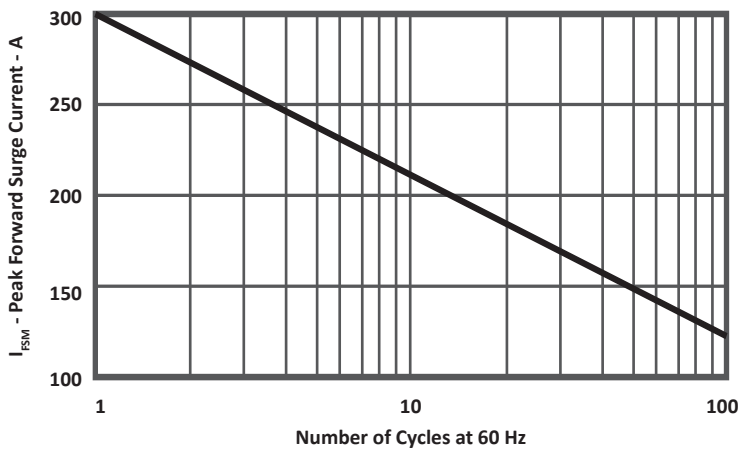
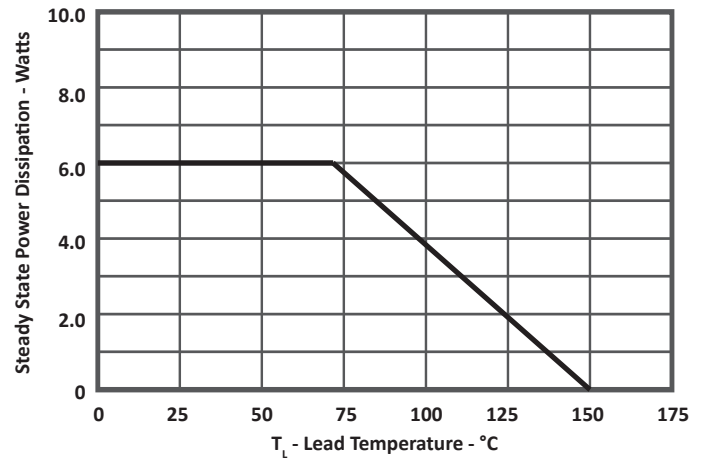


FIGURE 6
STEADY STATE POWER DERATING CURVE



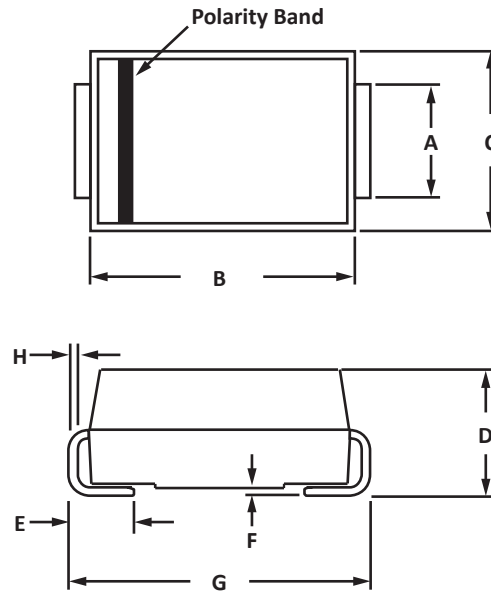
PACKAGE INFORMATION

OUTLINE DIMENSIONS

| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 2.86 | 3.16 | 0.114 | 0.126 |
| B | 6.52 | 7.02 | 0.260 | 0.280 |
| C | 5.52 | 6.15 | 0.220 | 0.245 |
| D | 1.98 | 2.59 | 0.079 | 0.103 |
| E | 0.75 | 1.51 | 0.030 | 0.060 |
| F | 0.00 | 0.20 | 0.000 | 0.008 |
| G | 7.64 | 8.02 | 0.305 | 0.320 |
| H | 0.15 | 0.30 | 0.006 | 0.012 |

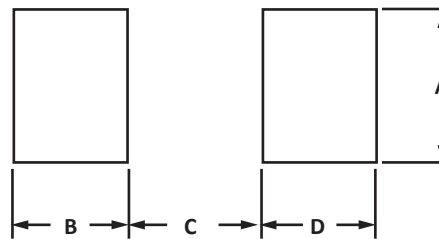
NOTES

1. Dimensions are exclusive of mold flash and metal burrs.

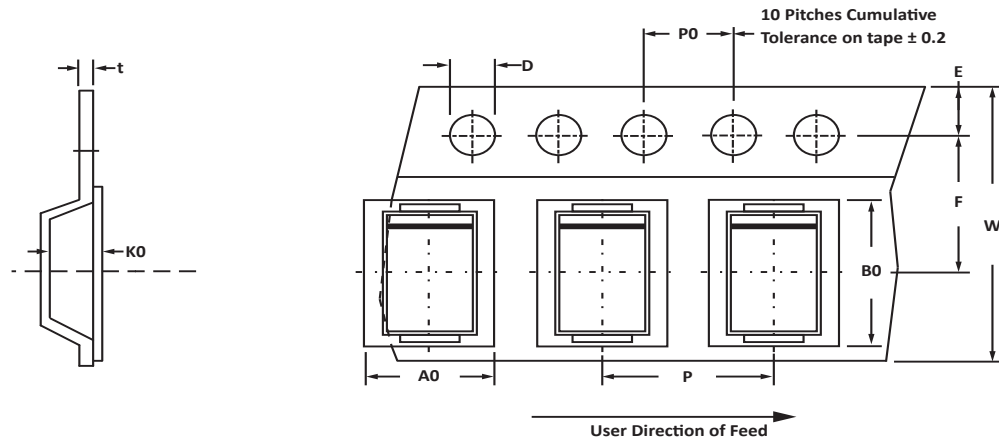


PAD LAYOUT DIMENSIONS

| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 3.43 | - | 0.135 | - |
| B | 2.03 | - | 0.080 | - |
| C | - | 4.32 | - | 0.170 |
| D | 2.03 | - | 0.080 | - |



TAPE AND REEL



SPECIFICATIONS

| REEL DIA. | TAPE WIDTH | A0 | B0 | K0 | D | E | F | W | P0 | P | tmax |
|-------------|------------|-------------|-------------|-------------|-------------|-------------|------------|--------------|-------------|-------------|------|
| 330mm (13") | 16mm | 6.05 ± 0.10 | 8.31 ± 0.10 | 2.54 ± 0.10 | 1.55 ± 0.05 | 1.75 ± 0.10 | 7.5 ± 0.10 | 16.00 ± 0.30 | 4.00 ± 0.10 | 8.00 ± 0.10 | 0.4 |

NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T13 = 13" Reel - 3,000 pieces and T500 = 7" Reel - 500 pieces per 16mm tape.
- Marking on Part - marking code (see page 2), date code, logo and cathode defined by polarity band.

ORDERING INFORMATION

| BASE PART NUMBER (Voltage = xx) | LEADFREE SUFFIX | TAPE SUFFIX | QTY/REEL | REEL SIZE | TUBE QTY |
|------------------------------------|-----------------|-------------|----------|-----------|----------|
| PAM32DOABxxA | N/A | -T13 | 3,000 | 13" | N/A |
| PAM32DOABxxA | N/A | -T500 | 500 | 7" | N/A |
| PAM32DOABxxCA | N/A | -T13 | 3,000 | 13" | N/A |
| PAM32DOABxxCA | N/A | T500 | 500 | 7" | N/A |

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

COMPANY INFORMATION

COMPANY PROFILE

In business more than 20 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.

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