



DO-214AB PACKAGE

APPLICATIONS

- Automotive

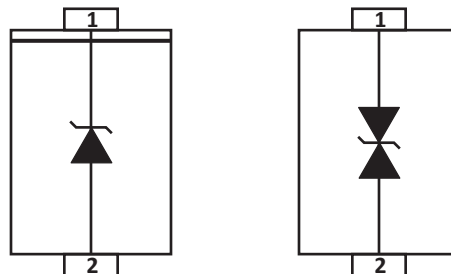
FEATURES

- *AEC-Q101 Qualified*
- UL Registered
- IEC Compatibility 61000-4-2 (ESD)
- IEC Compatibility 61000-4-4 (EFT)
- IEC Compatibility 61000-4-5 (Surge)
- Glass Passivated Chip
- 5000 Watts Peak Pulse Power per Line ($t_p = 10/1000\mu s$)
- 28,000 Watts Peak Pulse Power per Line ($t_p = 8/20\mu s$)
- Low Leakage Current
- Unidirectional & Bidirectional Configurations
- Excellent Clamping Capability
- Very Fast Response Time
- 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

RTCA DO-160G COMPLIANT PRODUCT

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

| PARAMETER | SYMBOL | VALUE | UNITS |
|---|-----------|------------|-------|
| Operating Temperature | T_J | -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} | 5000 | Watts |
| Peak Pulse Power (tp =8/20µs) - See Figure 1 and Note 2 | P_{PP} | 28000 | Watts |
| Power Dissipation on Infinite Heatsink at $T_L = 75^\circ\text{C}$ | P_D | 6.5 | Watts |
| Peak Forward Surge Current, 8.3ms single half sinewave - Unidirectional Only (Note 2) | I_{FSM} | 500 | 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 (Notes 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 | | | | |
| PAM33DOAB14A | 5PEG | 5BEG | 14.0 | 15.60 | 17.20 | 1 | 23.2 | 218 | 200 |
| PAM33DOAB15A | 5PEK | 5BEK | 15.0 | 16.70 | 18.50 | 1 | 24.4 | 207 | 100 |
| PAM33DOAB18A | 5PER | 5BER | 18.0 | 20.00 | 22.10 | 1 | 29.2 | 173 | 10 |
| PAM33DOAB20A | 5PEV | 5BEV | 20.0 | 22.20 | 24.50 | 1 | 32.4 | 156 | 5 |
| PAM33DOAB22A | 5PEX | 5BEX | 22.0 | 24.40 | 26.90 | 1 | 35.5 | 142 | 5 |
| PAM33DOAB24A | 5PEZ | 5BEZ | 24.0 | 26.7 | 29.5 | 1 | 38.9 | 130 | 5 |
| PAM33DOAB26A | 5PFE | 5BFE | 26.0 | 28.90 | 31.90 | 1 | 42.1 | 120 | 5 |
| PAM33DOAB30A | 5PFK | 5BFK | 30.0 | 33.30 | 36.80 | 1 | 48.4 | 104 | 5 |
| PAM33DOAB33A | 5PFM | 5BFM | 33.0 | 36.70 | 40.60 | 1 | 53.3 | 94.8 | 1 |
| PAM33DOAB36A | 5PFP | 5BFP | 36.0 | 40.00 | 44.20 | 1 | 58.1 | 86.9 | 1 |
| PAM33DOAB40A | 5PFR | 5BFR | 40.0 | 44.40 | 49.10 | 1 | 64.5 | 78.3 | 1 |
| PAM33DOAB51A | 5PFZ | 5BFZ | 51.0 | 56.70 | 62.70 | 1 | 82.4 | 61.3 | 1 |
| PAM33DOAB54A | 5PGE | 5BGE | 54.0 | 64.4 | 71.2 | 1 | 93.6 | 53.5 | 1 |
| PAM33DOAB140A | 5PHB | 5BHB | 140.0 | 155.00 | 171.00 | 1 | 226.8 | 22.3 | 1 |
| PAM33DOAB170A | 5PHR | 5BHR | 170.0 | 189.0 | 209.0 | 1 | 275.0 | 18.4 | 1 |
| PAM33DOAB180A | 5PHT | 5BHT | 180.0 | 200.00 | 220.0 | 1 | 291.6 | 17.3 | 1 |

NOTE

1. 5% tolerance.
2. Add suffix 'CA' after part number to specify a bidirectional device, i.e., PAM33DOAB26CA.

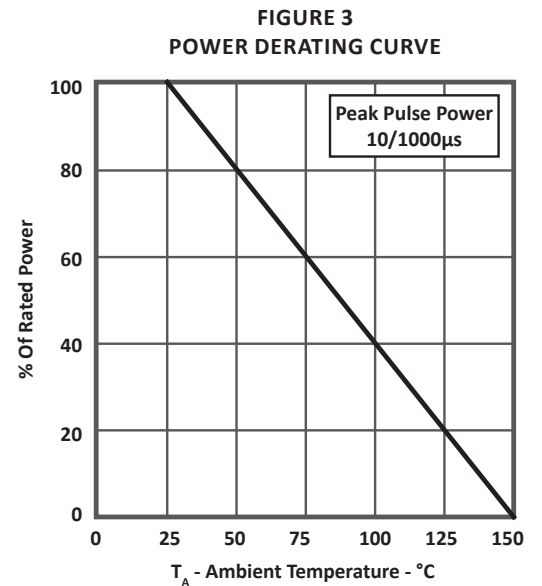
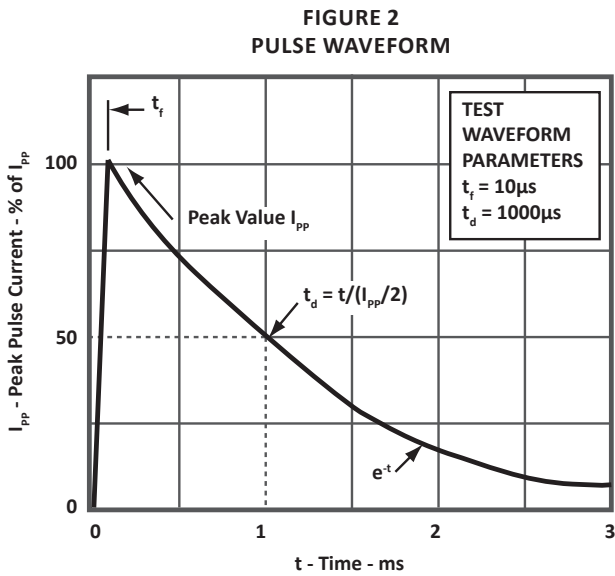
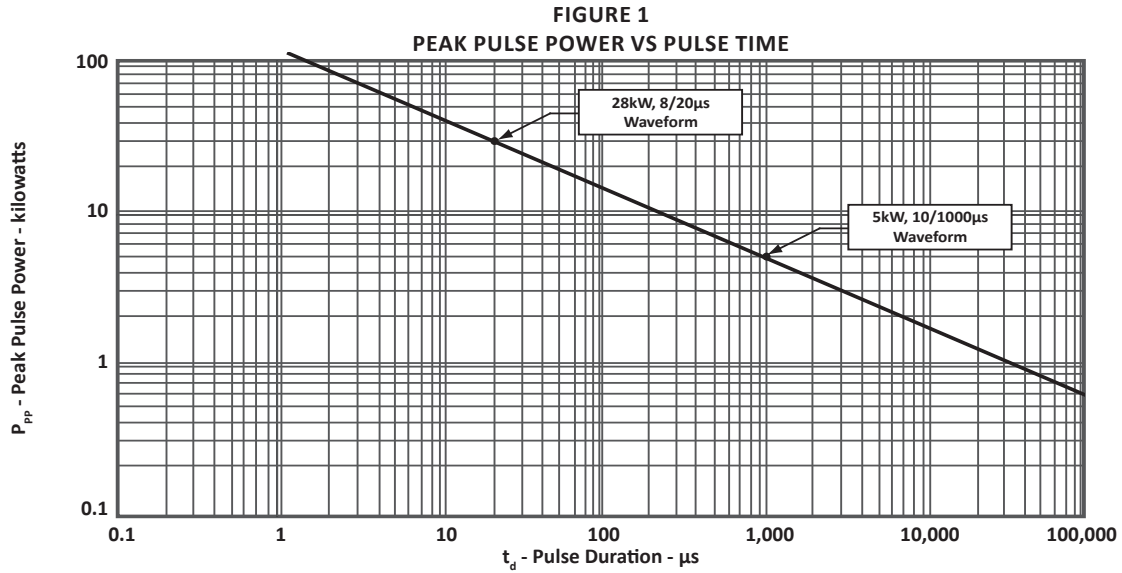


FIGURE 4
TYPICAL JUNCTION CAPACITANCE

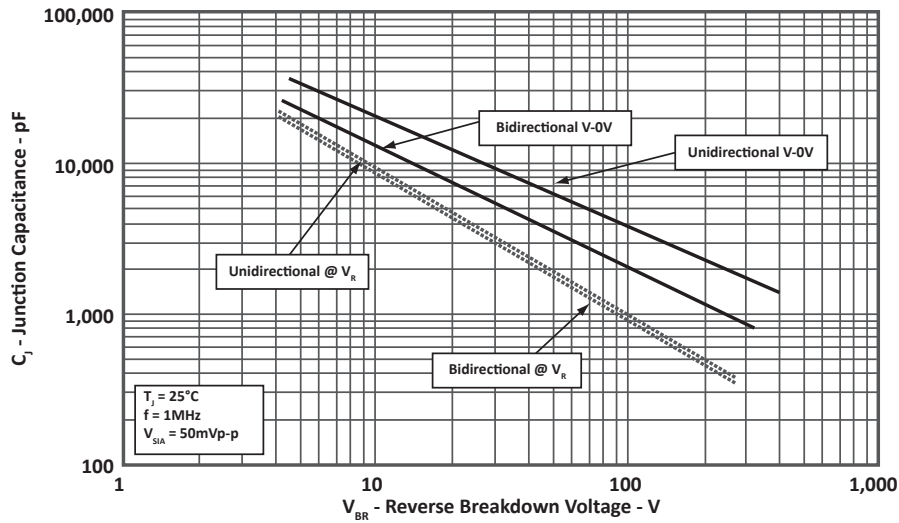


FIGURE 5
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

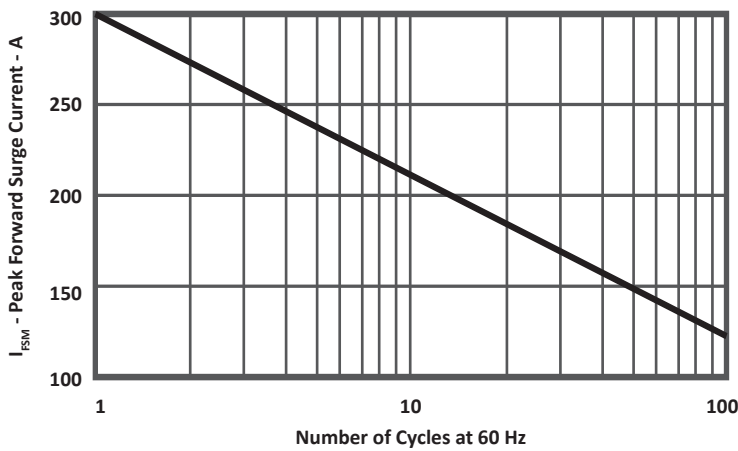
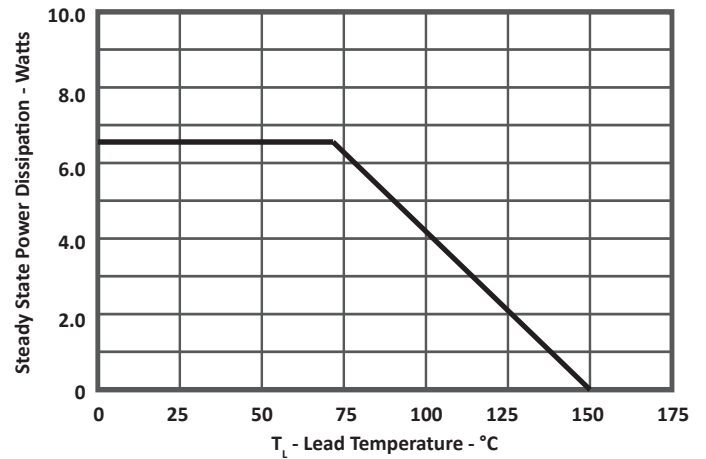


FIGURE 6
STEADY STATE POWER DERATING CURVE



PACKAGE INFORMATION

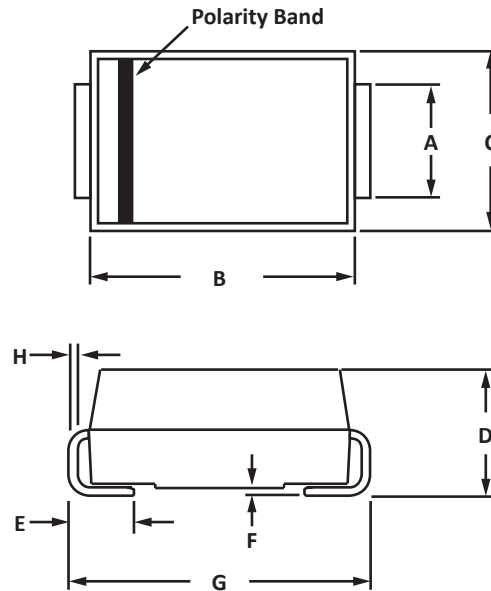
RTCA DO-160G COMPLIANT PRODUCT

OUTLINE DIMENSIONS

| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|-------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 2.75 | 3.25 | 0.108 | 0.128 |
| B | 6.90 | 7.40 | 0.272 | 0.291 |
| C | 5.75 | 6.25 | 0.226 | 0.246 |
| D | 2.15 | 2.62 | 0.085 | 0.103 |
| E | 0.95 | 1.52 | 0.037 | 0.060 |
| F | 0.051 | 0.203 | 0.002 | 0.008 |
| G | 7.70 | 8.20 | 0.303 | 0.323 |
| H | 0.15 | 0.31 | 0.006 | 0.012 |

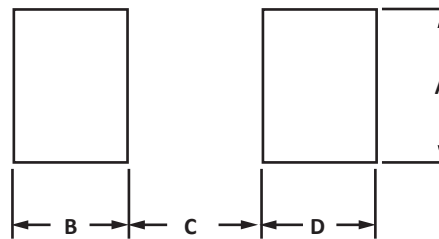
NOTES

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



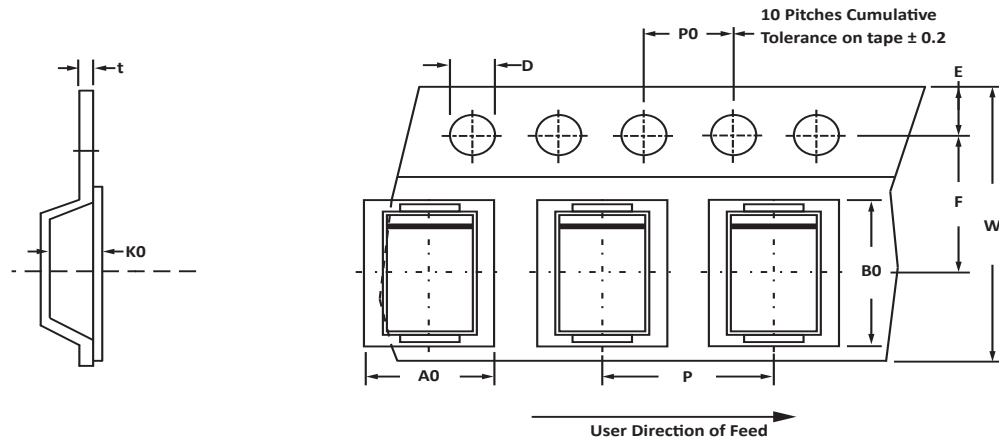
PAD LAYOUT DIMENSIONS

| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 3.30 | - | 0.130 | - |
| B | 2.40 | - | 0.094 | - |
| C | - | 4.20 | - | 0.165 |
| D | 2.40 | - | 0.094 | - |



TAPE AND REEL

RTCA DO-160G COMPLIANT PRODUCT



SPECIFICATIONS

| REEL DIA. | TAPE WIDTH | A0 | B0 | K0 | D | E | F | W | P0 | P | tmax |
|-------------|------------|-------------|-------------|-------------|-------------|-------------|------------|--------------|-------------|-------------|------|
| 330mm (13") | 16mm | 6.05 ± 0.30 | 8.31 ± 0.30 | 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.
- 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 |
|------------------------------------|-----------------|-------------|----------|-----------|----------|
| PAM33DOABxxA | N/A | -T13 | 3,000 | 13" | N/A |
| PAM33DOABxxCA | N/A | -T13 | 3,000 | 13" | N/A |
| PAM33DOABxxA | N/A | -T500 | 500 | 7" | N/A |
| PAM33DOABxxCA | N/A | -T500 | 500 | 7" | N/A |

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

COMPANY INFORMATION**RTCA DO-160G COMPLIANT PRODUCT****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 an ISO 9001 certified company.

CONTACT US**Corporate Headquarters**

2929 South Fair Lane
Tempe, Arizona 85282
USA

By Telephone

General: 602-431-8101
Sales: & Marketing: 602-414-5109
Customer Service: 602-414-5114
Product Technical Support: 602-414-5107

By Fax

General: 602-431-2288

By E-mail:

Asia Sales: asiasales@protekdevices.com
Europe Sales: europesales@protekdevices.com
U.S. Sales: ussales@protekdevices.com
Distributor Sales: distysales@protekdevices.com
Customer Service: service@protekdevices.com
Technical Support: support@protekdevices.com

ProTek Devices (Asia Pacific) Pte. Ltd.

8 Ubi Road 2, #06-19
Zervex
Singapore - 408538
Tel: +65-67488312
Fax: +65-67488313

Web

www.protekdevices.com

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