

3000 WATT TVS COMPONENT



DO-214AB PACKAGE

APPLICATIONS

- Automotive

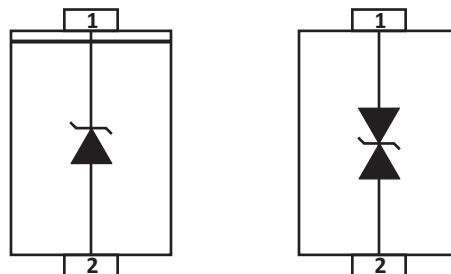
FEATURES

- *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
- 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 (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				
PAM32DOAB12A	PEE	DEE	12.0	13.30	14.70	5	19.9	151	2
PAM32DOAB13A	PEG	DEG	13.0	14.40	15.90	5	21.5	140	2
PAM32DOAB14A	PEK	DEK	14.0	15.60	17.20	5	23.2	129	2
PAM32DOAB15A	PEM	DEM	15.0	16.70	18.50	5	24.4	123	2
PAM32DOAB16A	PEP	DEP	16.0	17.80	19.70	5	26.0	115	2
PAM32DOAB17A	PER	DER	17.0	18.90	20.90	5	27.6	109	2
PAM32DOAB18A	PET	DET	18.0	20.00	22.10	5	29.2	103	2
PAM32DOAB19A	PEB	DEB	19.0	21.10	23.30	5	30.8	97.5	2
PAM32DOAB20A	PEV	DEV	20.0	22.20	24.50	5	32.4	92.6	2
PAM32DOAB22A	PEX	DEX	22.0	24.40	26.90	5	35.5	84.5	2
PAM32DOAB24A	PEZ	DEZ	24.0	26.70	29.50	5	38.9	77.1	2
PAM32DOAB26A	PFE	DFE	26.0	28.90	31.90	5	42.1	71.3	2
PAM32DOAB28A	PFG	DFG	28.0	31.10	34.40	5	45.4	66.1	2
PAM32DOAB30A	PFK	DFK	30.0	33.30	36.80	5	48.4	62.0	2
PAM32DOAB33A	PFM	DFM	33.0	36.70	40.60	5	53.3	56.3	2

TYPICAL DEVICE CHARACTERISTICS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

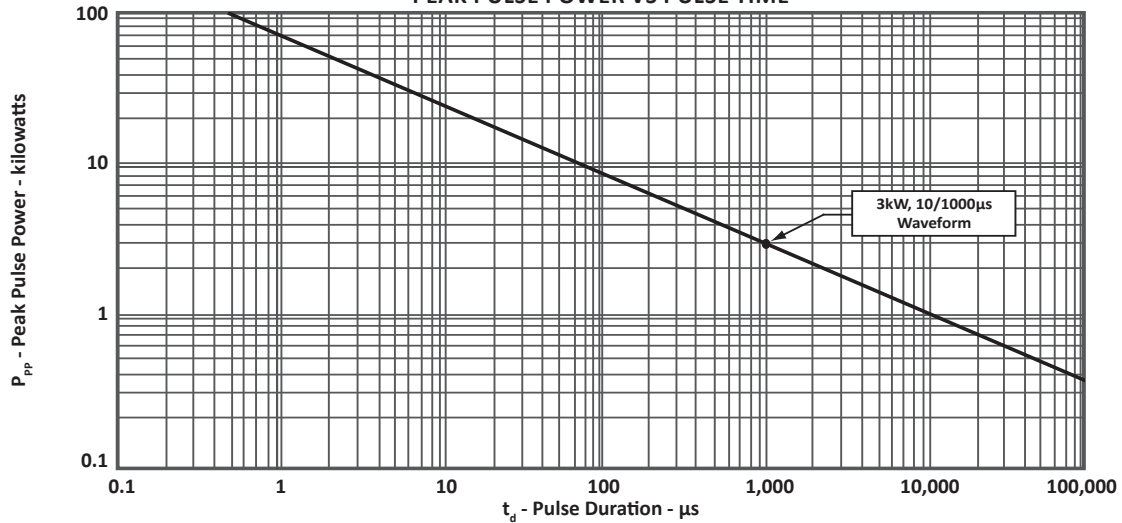
PART NUMBER (Note 1-2)	DEVICE MARKING		REVERSE STAND-OFF VOLTAGE V_{RWM} VOLTS	BREAKDOWN VOLTAGE $V_{(BR)} @ I_T$ VOLTS		TEST CURRENT @ I_T mA	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ I_P V_C VOLTS	MAXIMUM REVERSE SURGE CURRENT @ I_{PP} AMPS	MAXIMUM REVERSE LEAKAGE CURRENT @ V_{RWM} I_R μA
	UNI	BI		MIN	MAX				
	PAM32DOAB36A	PFP		DFP	36.0				
PAM32DOAB40A	PFR	DFR	40.0	44.40	49.10	5	64.5	46.5	2
PAM32DOAB43A	PFT	DFT	43.0	47.80	52.80	5	69.4	43.2	2
PAM32DOAB45A	PFV	DFV	45.0	50.0	55.30	5	72.7	41.3	2
PAM32DOAB48A	PFX	DFX	48.0	53.30	58.90	5	77.4	38.8	2
PAM32DOAB51A	PFZ	DFZ	51.0	56.70	62.70	5	82.4	36.4	2
PAM32DOAB54A	RGE	DGE	54.0	60.00	66.30	5	87.1	34.4	2
PAM32DOAB58A	RGG	DGG	58.0	64.40	71.20	5	93.6	32.1	2

NOTE

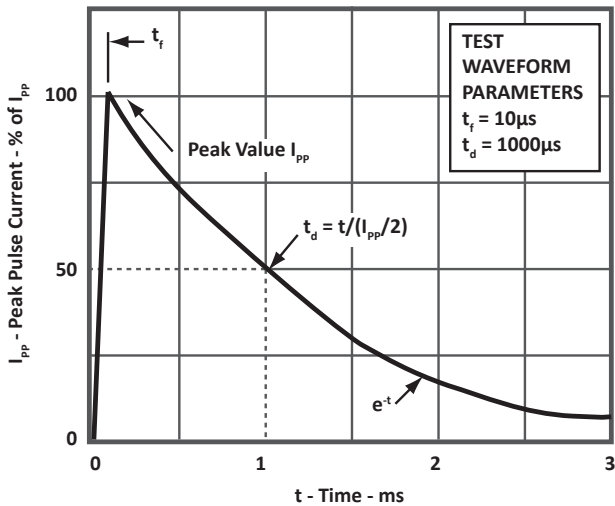
- 5% tolerance.
- Add suffix 'CA' after part number to specify a bidirectional device, i.e., PAM32DOAB22CA.

TYPICAL DEVICE CHARACTERISTICS

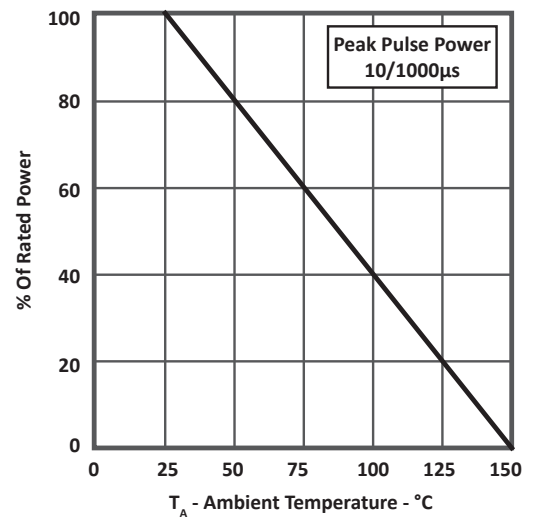
**FIGURE 1
PEAK PULSE POWER VS PULSE TIME**



**FIGURE 2
PULSE WAVEFORM**

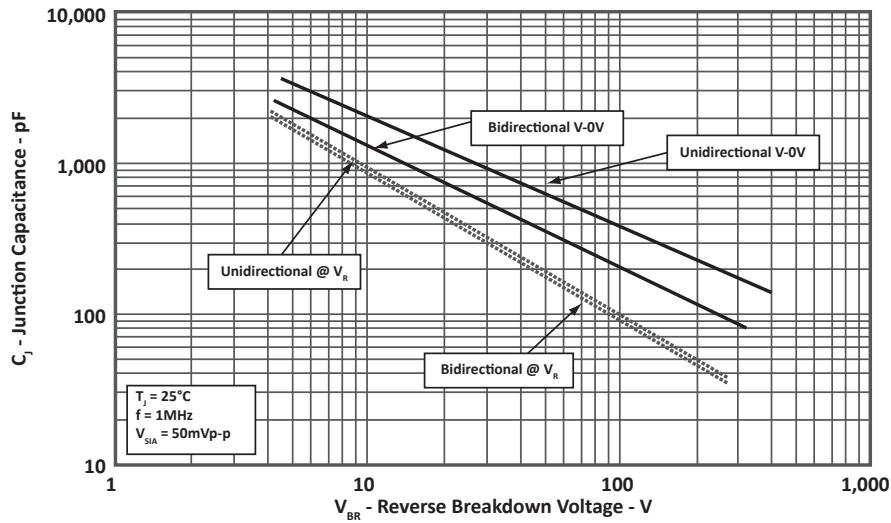


**FIGURE 3
POWER DERATING CURVE**

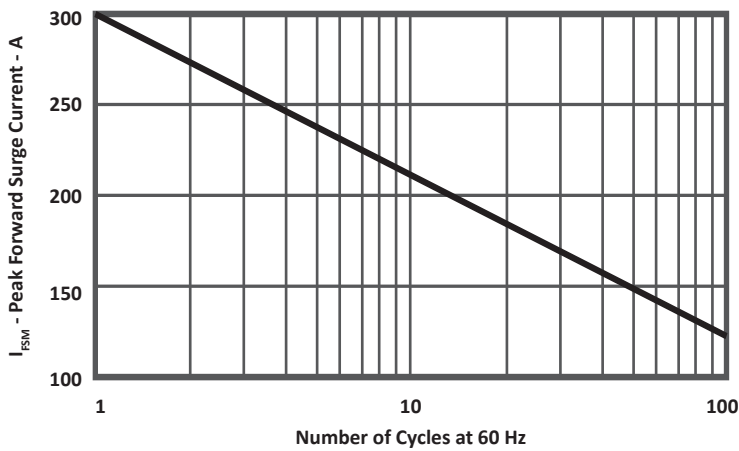


TYPICAL DEVICE CHARACTERISTICS

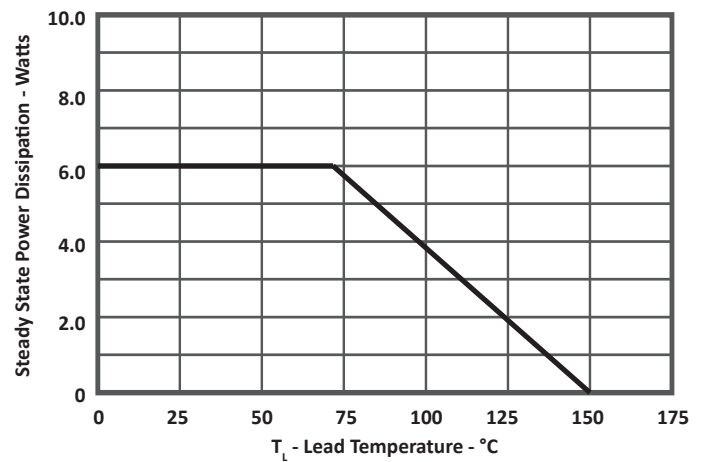
**FIGURE 4
TYPICAL JUNCTION CAPACITANCE**



**FIGURE 5
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**



**FIGURE 6
STEADY STATE POWER DERATING CURVE**



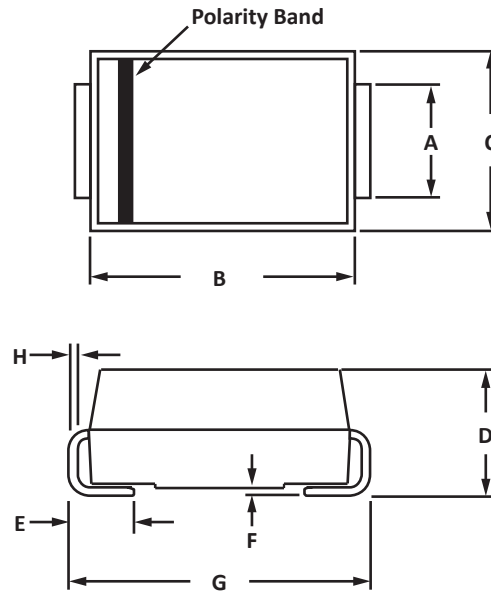
PACKAGE INFORMATION

OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.75	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

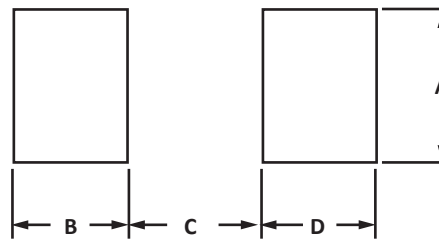
NOTES

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

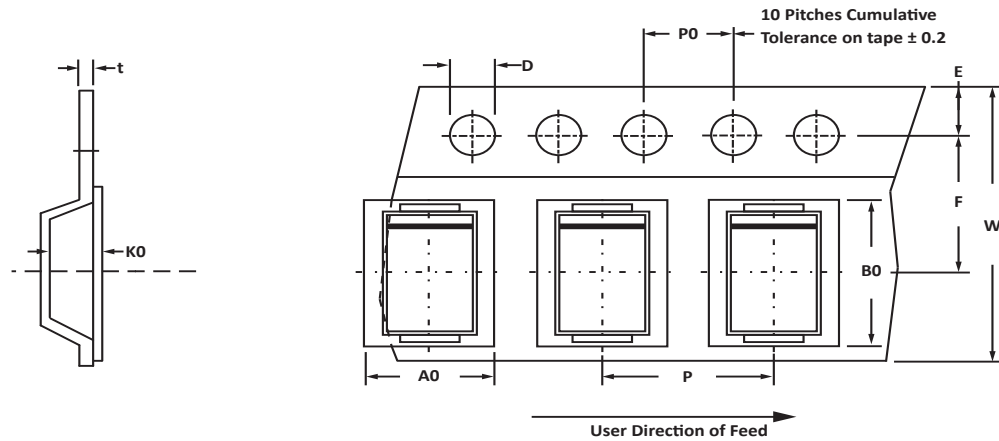


PAD LAYOUT DIMENSIONS

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



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
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 30 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection that include Transient Voltage Suppressor (TVS) Arrays, Steering Diode Array Hybrids, High-power Components and Modules, as well as Steering Diodes, EMI Filter/TVS Arrays and Thyristor Surge Suppressors. These components deliver circuit protection in electronic systems from numerous overvoltage events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). 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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