

## 600 WATT TVS COMPONENT



### APPLICATIONS

- Automotive

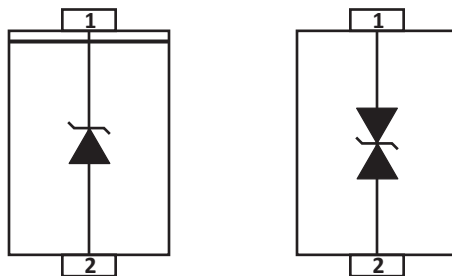
### FEATURES

- **AEC-Q101 Qualified**
- UL File Recognition #E208219
- Compatible with IEC 61000-4-2 (ESD): Level 4: Air  $\pm 15\text{kV}$ , Contact  $\pm 8\text{kV}$
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 8/20 $\mu\text{s}$  Waveform
- Glass Passivated Chip
- 600 Watts Peak Pulse Power per Line ( $t_p = 10/1000\mu\text{s}$ )
- Low Leakage Current
- Unidirectional & Bidirectional Configurations
- Excellent Clamping Capability
- Very Fast Response Time
- Available in Multiple Voltages
- RoHS Compliant
- REACH Compliant

### MECHANICAL CHARACTERISTICS

- Molded JEDEC DO-214AA Package
- Approximate Weight: 0.103 grams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:  
Pure-Tin - Sn, 100: 260-270°C
- 12mm 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	$T_J$	-55 to 150	°C
Storage Temperature	$T_{STG}$	-55 to 150	°C
Peak Pulse Power (tp =10/1000µs) - See Figure 1 and Note 1	$P_{PP}$	600	Watts
Power Dissipation on Infinite Heatsink at $T_L = 75^\circ\text{C}$	$P_D$	5.0	Watts
Peak Forward Surge Current, 8.3ms single half sinewave - Unidirectional Only (Note 2)	$I_{FSM}$	100	Amps
Maximum Instantaneous Forward Voltage at 50A - Unidirectional Only (Note 3)	$V_F$	3.5/5.0	V

**NOTE**

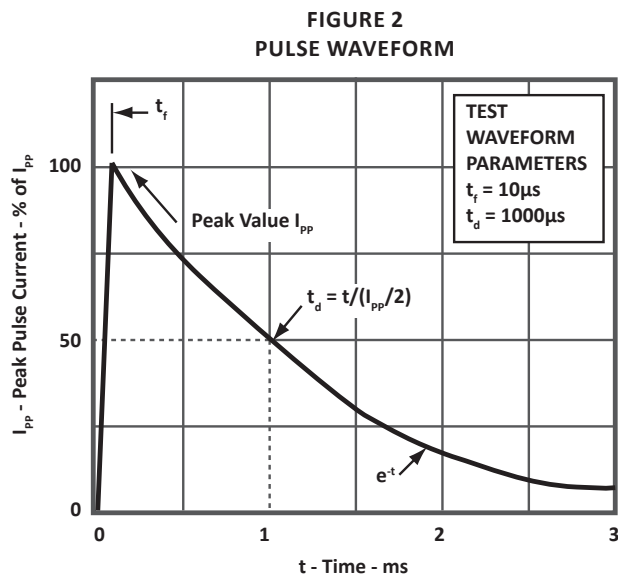
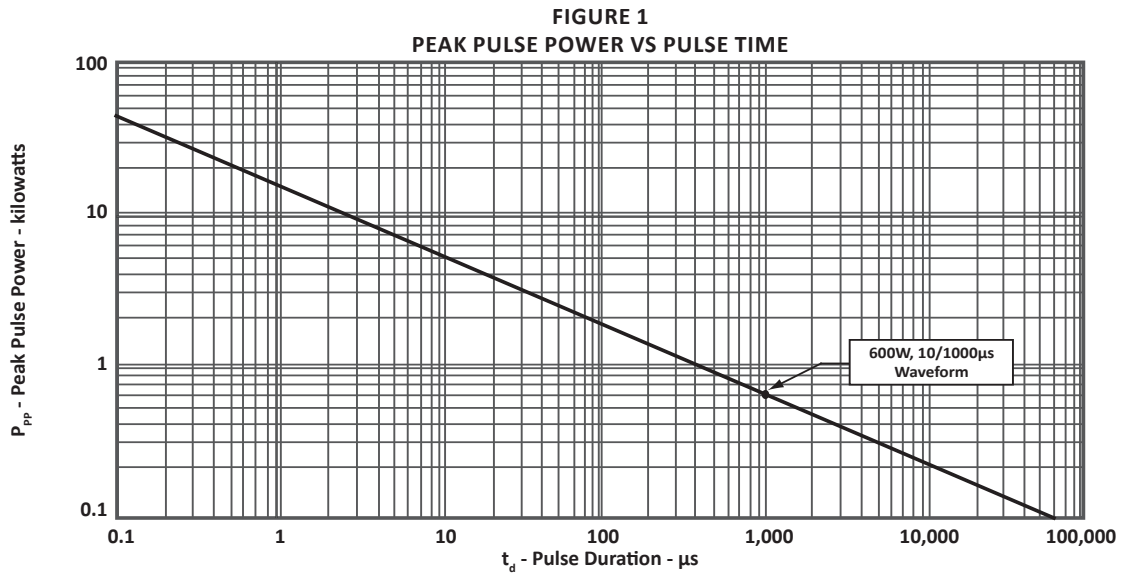
1. Non-repetitive current pulse per Figure 2 and derated above  $T_A = 25^\circ\text{C}$  per Figure 3.
2. Measured on 8.3ms single half sinewave or equivalent square wave, duty cycle = 4 pulses per minute maximum.
3.  $V_F < 3.5\text{V}$ .

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				
	PAM29DOAA12A	LE	BE	12.0	13.30	14.70	1	19.9	30.2
PAM29DOAA18A	LT	BT	18.0	20.00	22.10	1	29.2	20.6	1
PAM29DOAA22A	KX	BX	22.0	24.40	26.90	1	35.5	16.9	1
PAM29DOAA24A	LZ	BZ	24.0	26.70	29.50	1	38.9	15.4	1
PAM29DOAA26A	ME	CE	26.0	28.90	31.90	1	42.1	14.3	1
PAM29DOAA28A	MG	CG	28.0	31.10	34.40	1	45.4	13.2	1
PAM29DOAA30A	MK	CK	30.0	33.30	36.80	1	48.4	12.4	1
PAM29DOAA33A	MM	CM	33.0	36.70	40.60	1	53.3	11.3	1
PAM29DOAA36A	MP	CP	36.0	40.0	44.20	1	58.17	10.3	1
PAM29DOAA180A	PT	ET	180.0	200.00	220.00	1	291.6	2.1	1

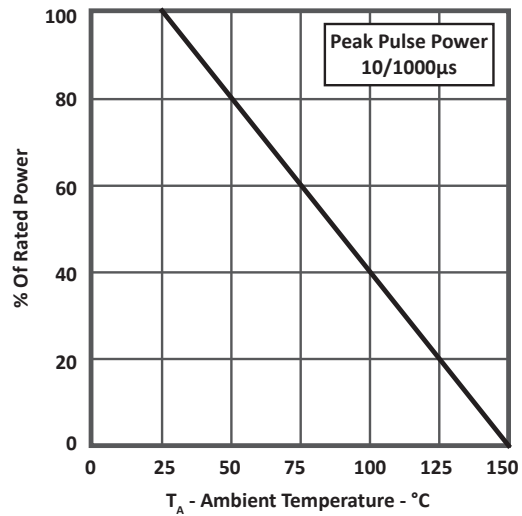
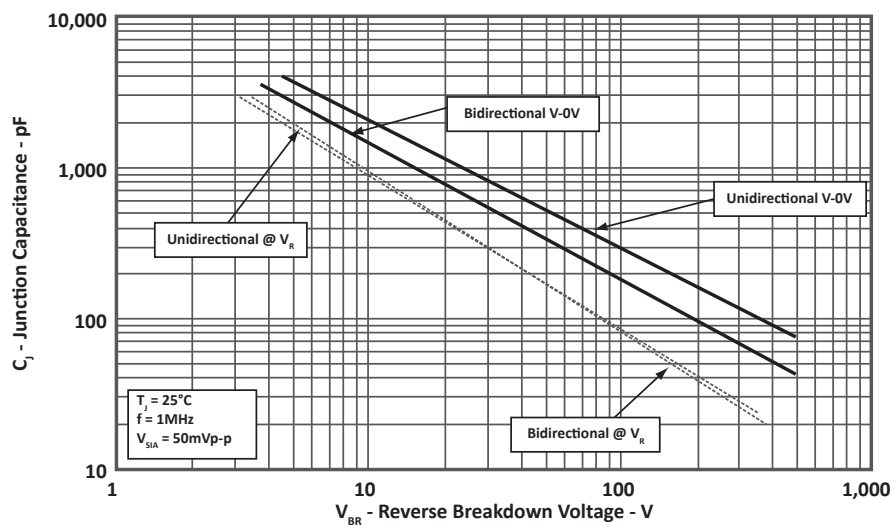
**NOTE**

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

## TYPICAL DEVICE CHARACTERISTICS



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**FIGURE 3**  
**POWER DERATING CURVE**

**FIGURE 4**  
**TYPICAL JUNCTION CAPACITANCE**


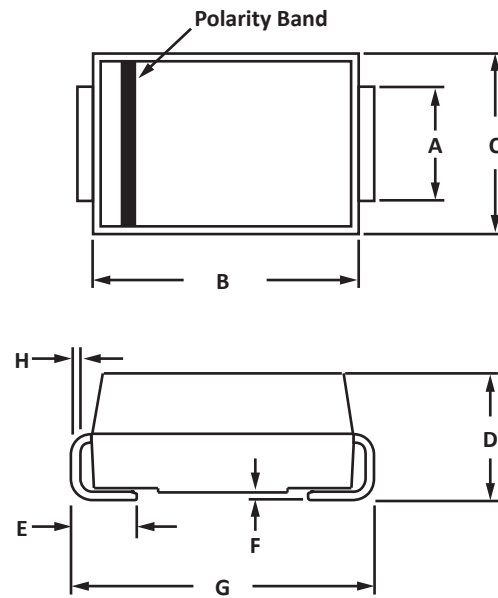
## DO-214AA PACKAGE INFORMATION

## OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.96	2.20	0.077	0.087
B	4.35	4.85	0.171	0.191
C	3.30	3.94	0.130	0.155
D	2.13	2.44	0.084	0.096
E	0.75	1.52	0.030	0.060
F	0.02	0.20	0.001	0.008
G	5.10	5.50	0.201	0.216
H	0.15	0.30	0.006	0.012

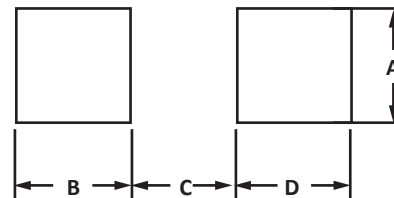
## NOTES

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

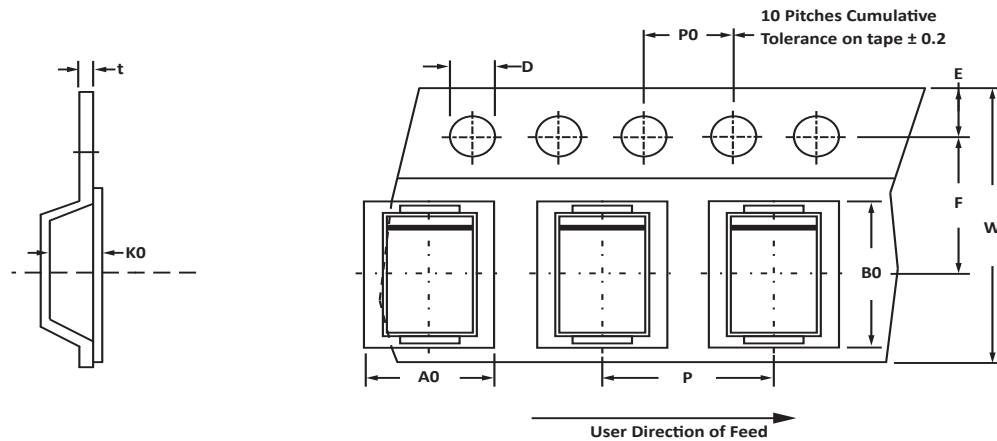


## PAD LAYOUT DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.03	-	0.080	-
B	1.91	-	0.075	-
C	-	2.54	-	1.00
D	1.91	-	0.075	-



## TAPE AND REEL



## SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P	tmax
330mm (13")	12mm	3.67 ± 0.10	5.69 ± 0.10	2.67 ± 0.10	1.55 ± 0.10	1.75 ± 0.10	5.5 ± 0.05	12.00 ± 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
PAM29DOAAxxA/CA	N/A	-T500	500	7"	N/A
PAM29DOAAxxA/CA	N/A	-T13	3,000	13"	N/A

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

## COMPANY INFORMATION

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### 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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