

## 5000 WATT TVS COMPONENT



**DO-214AB PACKAGE**

### APPLICATIONS

- Power Supply
- AC/DC Applications
- Telecom

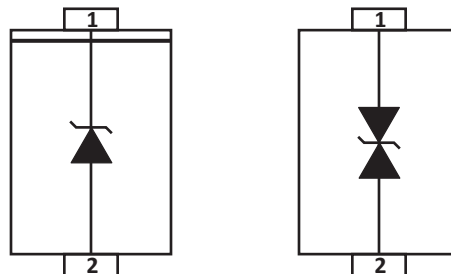
### FEATURES

- 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**
**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 ( $t_p = 10/1000\mu s$ ) - See Figure 1 and Note 2	$P_{PP}$	5000	Watts
Peak Pulse Power ( $t_p = 8/20\mu s$ ) - See Figure 1 and Note 2	$P_{PP}$	28000	Watts
Power Dissipation on Infinite Heatsink at $T_L = 75^\circ C$	$P_D$	6.5	Watts
Peak Forward Surge Current, 8.3ms single half sinewave - Unidirectional Only (Note 2)	$I_{FSM}$	500	Amps
Peak Pulse Current ( $t_p = 8/20\mu s$ )	$I_{PP}$	2500	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  $T_A = 25^\circ C$  per Figure 2.
2. Measured on 8.3ms single half sinewave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

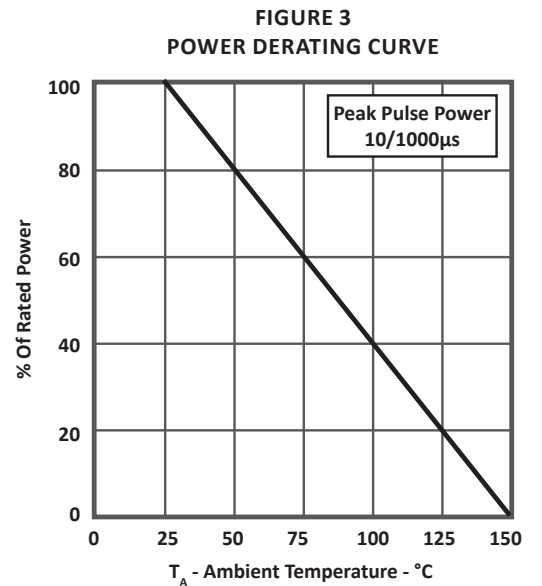
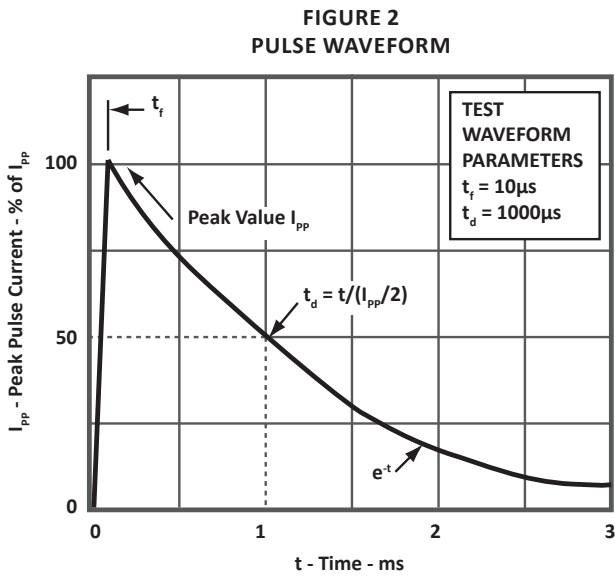
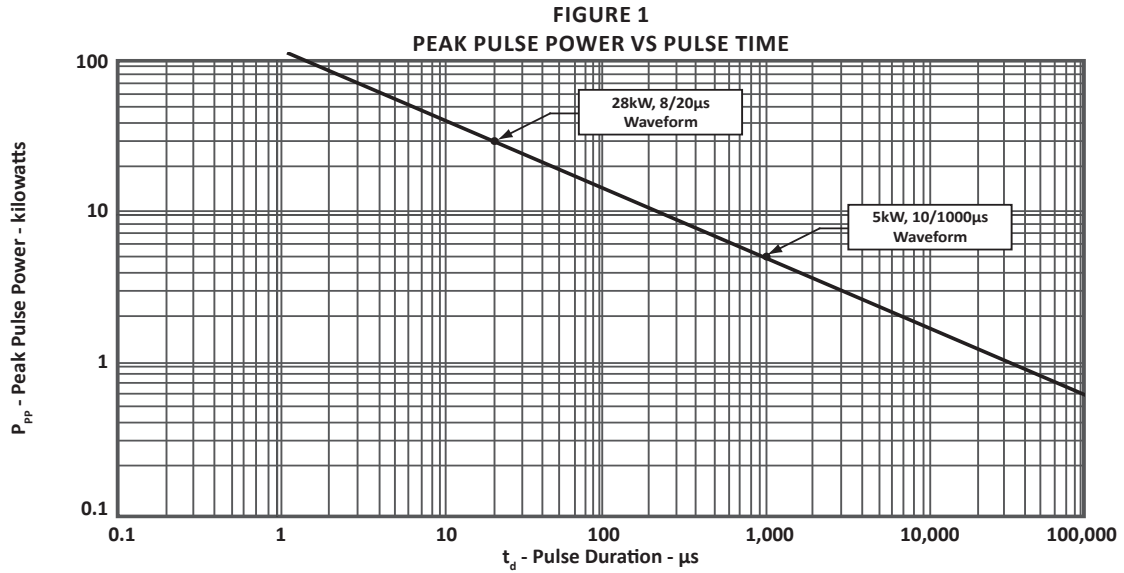
**ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified**

PART NUMBER (Notes 1-3)	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  $@ V_{RWM}$ $I_R$ $\mu A$
			MIN	MAX				
			5.0SMDJ6.0CA	5DDG				
5.0SMDJ12A	5PDZ	12.0	13.3	14.7	1	19.9	254.0	800
5.0SMDJ22CA	5BEX	22.0	24.4	26.9	1	35.5	142.3	5
5.0SMDJ33A	5PFM	33.0	36.7	40.60	1	53.3	94.8	5
5.0SMDJ36A	5PPF	36.0	40.0	44.20	1	58.1	86.9	5
5.0SMDJ90A	5PGX	90.0	100	111	1	146.0	34.6	5

**NOTE**

1. Suffix 'A' denotes 5% tolerance.
2. Contact Factory for additional voltages.
3. Suffix 'CA' denotes a bidirectional device.

TYPICAL DEVICE CHARACTERISTICS



TYPICAL DEVICE CHARACTERISTICS

FIGURE 4  
TYPICAL JUNCTION CAPACITANCE

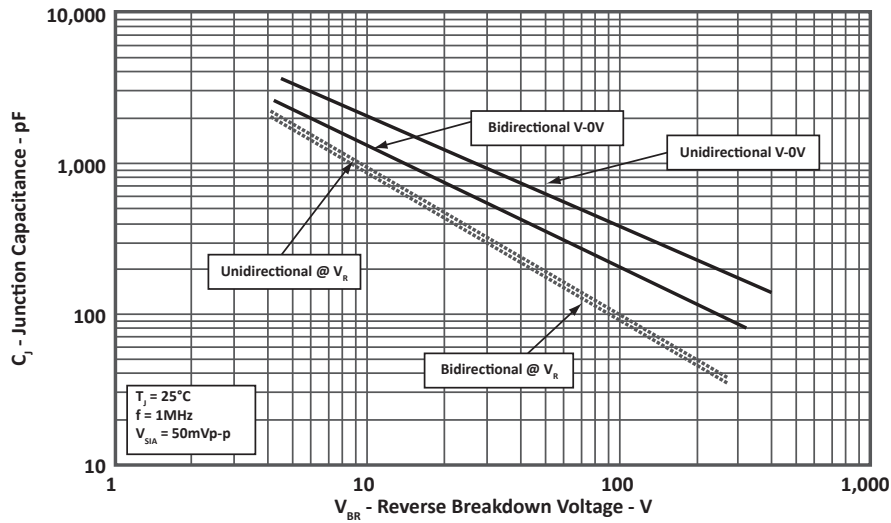


FIGURE 5  
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

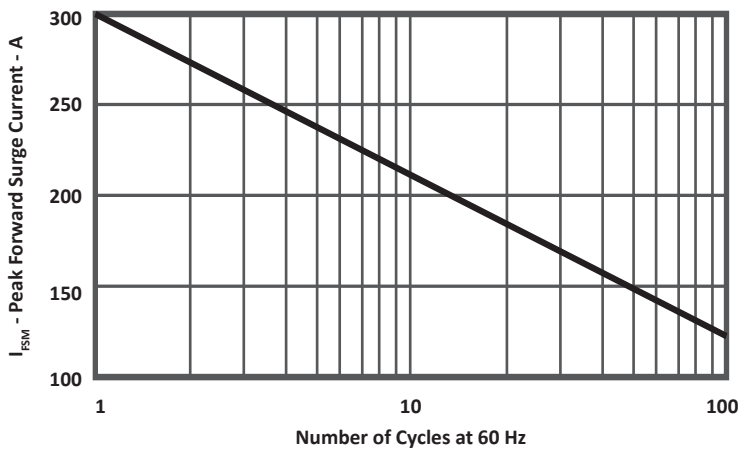
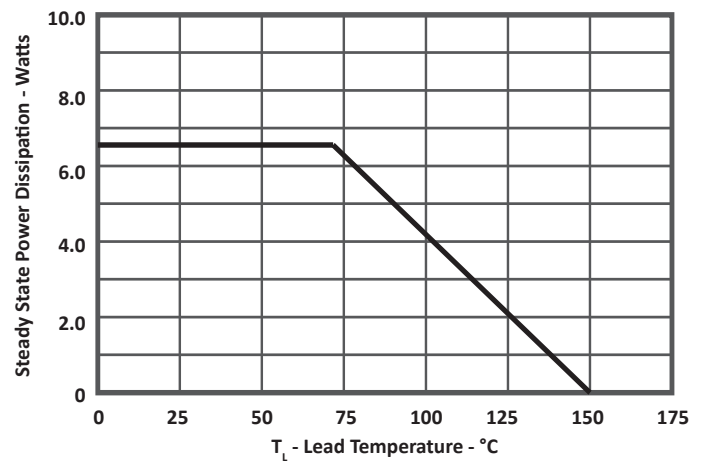


FIGURE 6  
STEADY STATE POWER DERATING CURVE



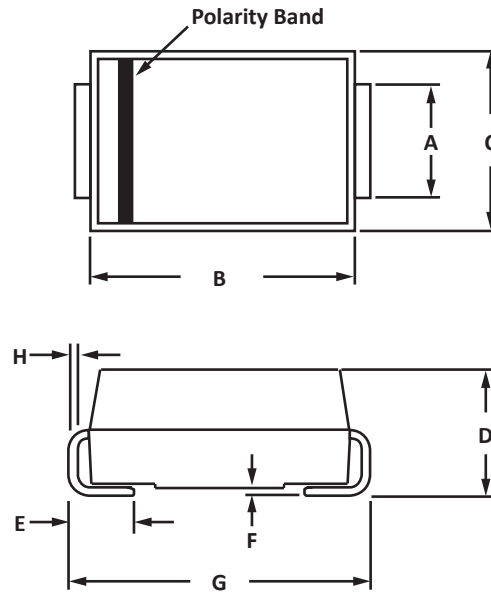
## DO-214AB PACKAGE INFORMATION

## 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

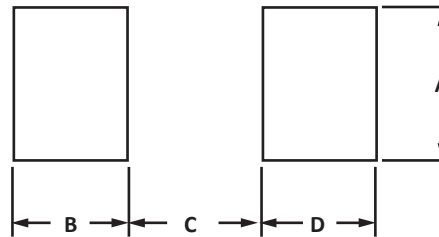
## NOTES

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

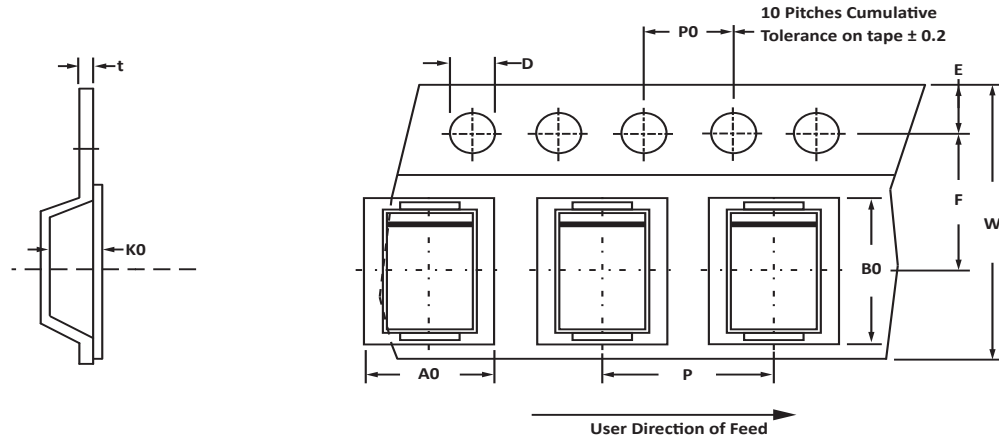


## PAD LAYOUT DIMENSIONS

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 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
5.0SMDJxxA	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 high performance interface and linear products. They include analog switches; multiplexers; LED drivers; LED wafer die for ESD protection; audio control ICs; RF and related high frequency products.

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