400 WATT TVS COMPONENT

DO-214AC PACKAGE

APPLICATIONS

- Power Supply
- AC/DC Applications
- Telecom

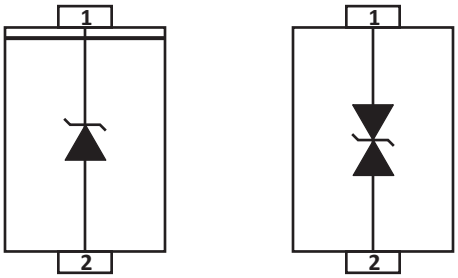
FEATURES

- • IEC 61000-4-2 (ESD): Level 4 - Air 15kV, Contact 8kV
- • IEC 61000-4-4 (EFT): 40A 5/50ns
- • IEC 61000-4-5 (Surge): 8/20µs Waveform
- Glass Passivated Chip
- 400 Watts Peak Pulse Power per Line (tp = 10/1000µs)
- Low Leakage Current
- Bidirectional and Unidirectional Configurations
- Excellent Clamping Capability
- Very Fast Response Time
- RoHS Compliant
- REACH Compliant

MECHANICAL CHARACTERISTICS

- Molded JEDEC DO-214AC Package
- Approximate Weight: 0.06 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_A	-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}	400	Watts
Power Dissipation on Infinite Heatsink at T_L = 75°C	P_D	1.0	Watts
Peak Forward Surge Current, 8.3ms single half sinewave - Unidirectional Only (Note 2)	I_{FSM}	40	Amps
Maximum Instantaneous Forward Voltage at 25A - Unidirectional Only (Note 3)	V_F	3.5/5.0	V

NOTE
1. Non-repetitive current pulse per Figure 2 and derated above TA = 25°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 < 3.5V .

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified								
PART NUMBER (Notes 1-2)	**DEVICE MARKING**	**REVERSE STAND-OFF VOLTAGE**	**BREAKDOWN VOLTAGE** $V_{(BR)}$ @ I_T VOLTS		**TEST CURRENT**	**MAXIMUM CLAMPING VOLTAGE (Fig. 2)**	**MAXIMUM REVERSE SURGE CURRENT**	**MAXIMUM REVERSE LEAKAGE CURRENT**
		V_{RWM} VOLTS	MIN	MAX	@ I_T mA	@ I_P V_C VOLTS	@I_{PP} AMPS	@V_{RWM} I_R µA
SMAJ5.0A	AE	5.0	6.40	7.00	10	9.2	43.5	800
SMAJ5.0CA	WE	5.0	6.40	7.00	10	9.2	43.5	1600
SMAJ28CA	YG	28.0	31.10	34.40	1	45.4	8.81	5
SMAJ33A	CM	33.0	36.70	40.60	1	53.3	7.50	5
SMAJ33CA	YP	33.0	36.70	40.60	1	53.3	7.50	5
SMAJ36A	CP	36.0	40.00	44.20	1	58.1	6.9	5
SMAJ43CA	YT	43.0	47.80	52.80	1	69.4	5.76	5

NOTE
1. Suffix 'A' denotes 5% tolerance.
2. Suffix 'CA' denotes a bidirectional device.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

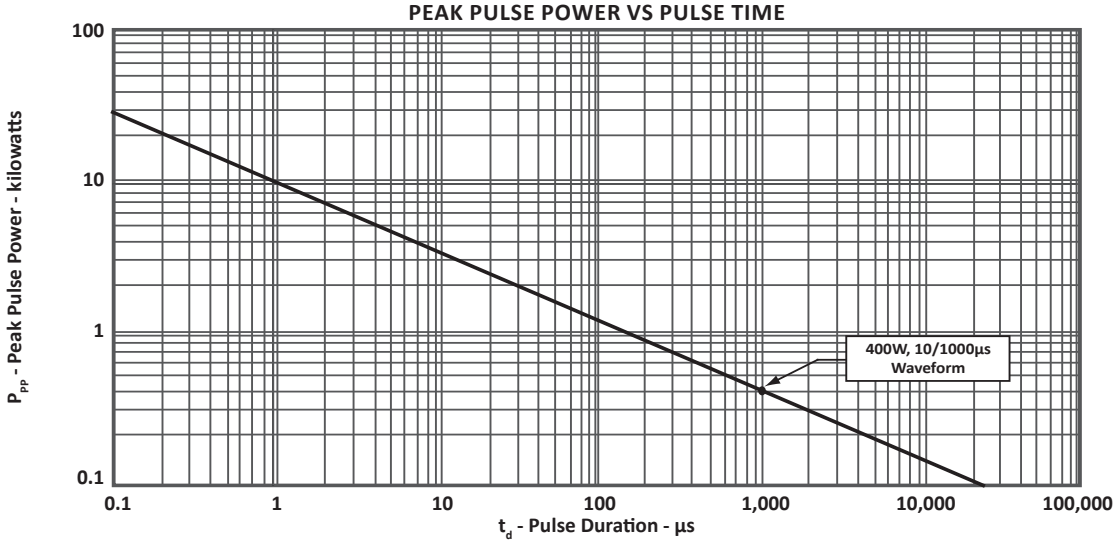


FIGURE 2
PULSE WAVEFORM

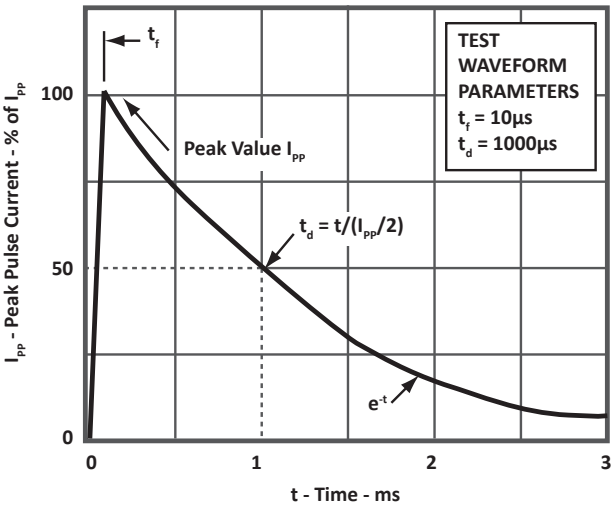
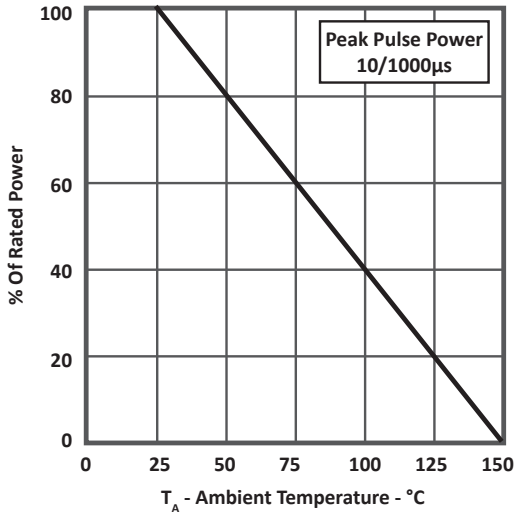


FIGURE 3
POWER DERATING CURVE



TYPICAL DEVICE CHARACTERISTICS

FIGURE 4
TYPICAL JUNCTION CAPACITANCE

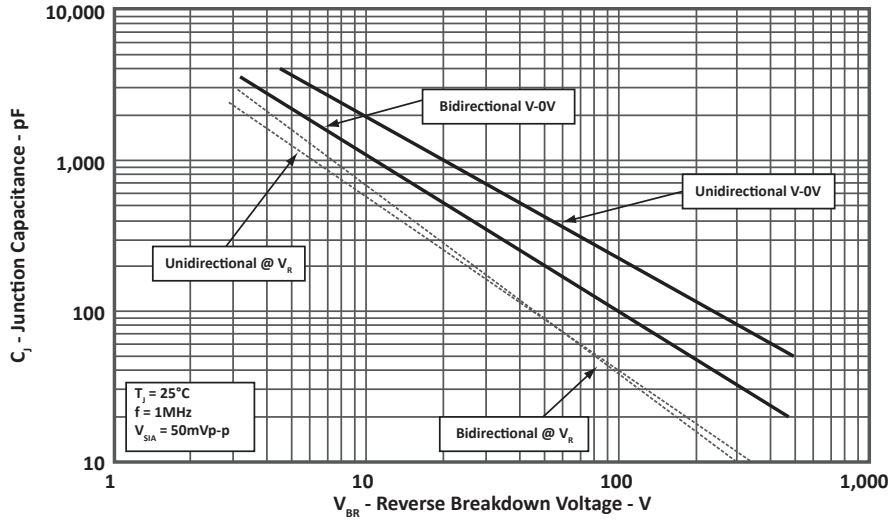


FIGURE 5
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

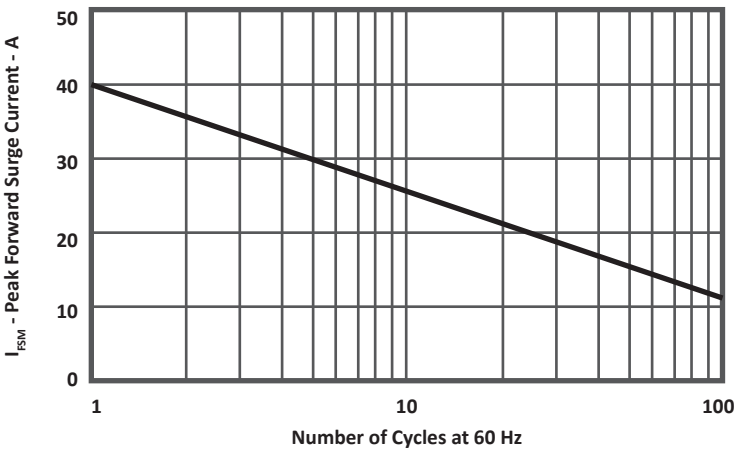
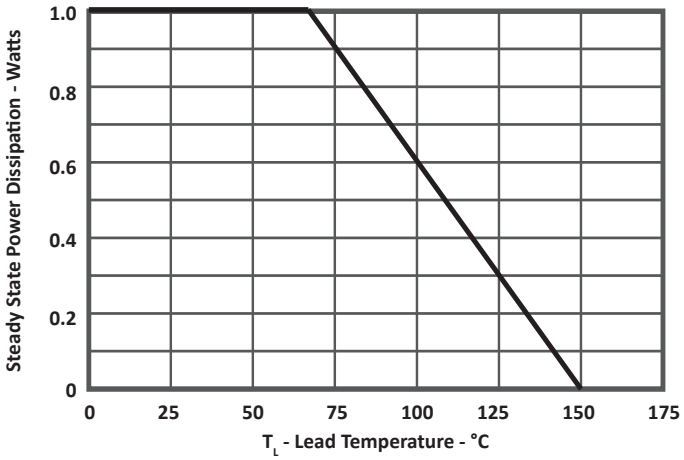


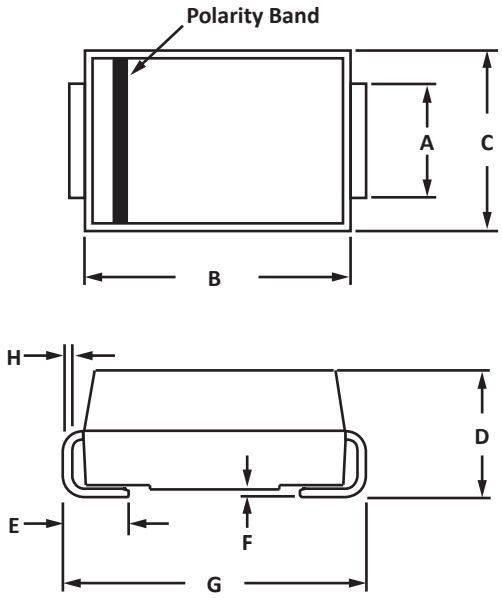
FIGURE 6
STEADY STATE POWER DERATING CURVE



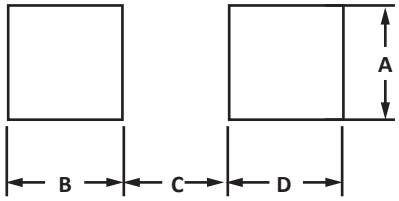
DO-214AC PACKAGE INFORMATION

OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.23	1.63	0.049	0.064
B	4.10	4.55	0.162	0.179
C	2.51	2.76	0.099	0.109
D	1.96	2.26	0.077	0.089
E	0.75	1.51	0.03	0.06
F	0.00	0.20	0.000	0.008
G	4.87	5.22	0.192	0.206
H	0.15	0.30	0.006	0.012

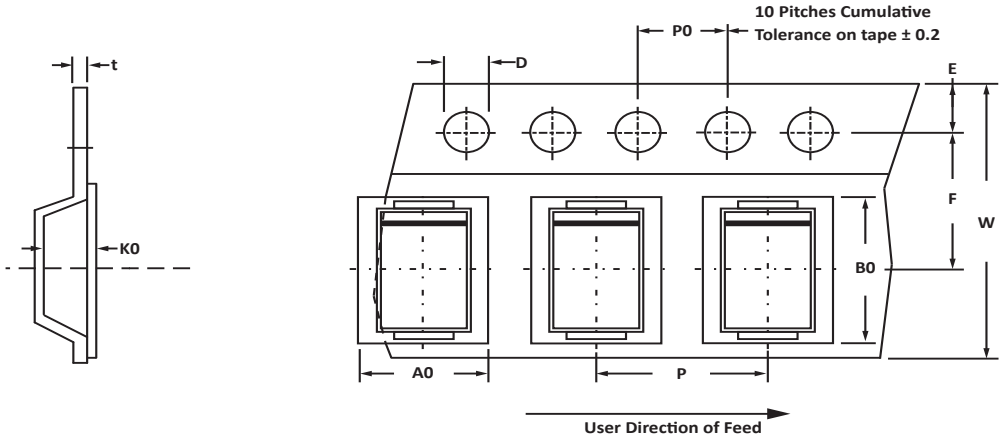
NOTES
1. Dimensions are exclusive of mold flash and metal burrs.



PAD LAYOUT DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.57	-	0.062	-
B	1.55	-	0.061	-
C	-	2.28	-	0.090
D	1.55	-	0.061	-



TAPE AND REEL



SPECIFICATIONS											
REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P	tmax
330mm (13")	12mm	2.79 ± 0.10	5.33 ± 0.10	2.36 ± 0.10	1.55 ± 0.10	1.75 ± 0.10	5.5 ± 0.05	12.00 ± 0.30	4.00 ± 0.10	4.00 ± 0.10	0.4

NOTES
1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T13 = 13" Reel - 7,500 pieces per 12mm tape.
4. Marking on Part - marking code (see page 2), date code, logo and cathode defined by polarity band.

ORDERING INFORMATION					
BASE PART NUMBER (xx = Voltage)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
SMAJxxA/ SMAJxxCA	N/A	-T13	7,500	13"	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 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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