600 WATT TVS COMPONENT

DO-214AA PACKAGE

APPLICATIONS

- Automotive

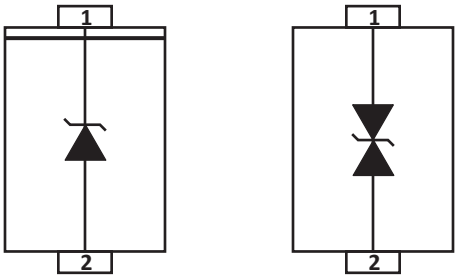
FEATURES

- ***AEC-Q101 Qualified***
- Compatible with IEC 61000-4-2 (ESD): Level 4 - Air 15kV, Contact 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 8/20µs Waveform
- Glass Passivated Chip
- 600 Watts Peak Pulse Power per Line (tp = 10/1000µs)
- Low Leakage Current
- Bidirectional and Unidirectional 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
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	20	°C/W
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	100	°C/W
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°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 25A - 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°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 for devices of V_{BR} < 200V and V_F <5.0V for devices of V_{BR} > 201V.

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Notes 1-3)	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
	UNI	BI	V_{RWM} VOLTS	MIN	MAX	@ I_T mA	@ I_P V_C VOLTS	@I_{PP} AMPS	@V_{RWM} I_R µA
PAM30DOAA6.8A	6V8A	6V8C	5.8	6.46	7.14	10	10.5	57.14	1000
PAM30DOAA15A	15A	15C	12.8	14.25	15.75	1	21.2	28.30	1
PAM30DOAA18A	18A	18C	15.3	17.10	18.90	1	25.2	23.81	1
PAM30DOAA22A	22A	22C	18.8	20.9	23.10	1	30.6	19.7	1
PAM30DOAA30A	30A	30C	25.6	28.50	31.50	1	41.4	14.49	1
PAM30DOAA39A	39A	39C	33.3	37.05	40.95	1	53.9	11.13	1
PAM30DOAA43A	43A	43C	36.8	40.85	45.15	1	59.3	10.12	1
PAM30DOAA56A	56A	56C	47.8	53.20	58.80	1	77.0	7.79	1
PAM30DOAA120A	120A	120C	102.0	114.0	126.0	1	165.0	3.7	1
PAM30DOAA250A	250A	250C	214.0	237.50	262.50	1	344.0	1.74	1
PAM30DOAA350A	350A	350C	299.3	332.50	367.50	1	482.0	1.24	1
PAM30DOAA400A	400A	400C	342.0	380.0	420.0	1	548.0	1.09	1
PAM30DOAA440A	440A	440C	376.2	418.0	462.0	1	607.2	0.99	1
PAM30DOAA480A	480A	480C	408.0	456.0	504.0	1	658.0	0.90	1
PAM30DOAA540A	540A	540C	460.0	513.0	567.0	1	740.0	0.80	1
PAM30DOAA600A	600A	600C	513.0	570.00	630.00	1	828.0	0.72	1

NOTE
1. Suffix 'A' denotes 5% tolerance. Non "A" suffix is not available with this part series.
2. Add suffix 'C' or 'CA' after part number to specify a bidirectional device.
3. For bidirectional devices having a V_{RWM} of 10 Volts and under, the I_R limit is double.
4. Consult factory for more voltages.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

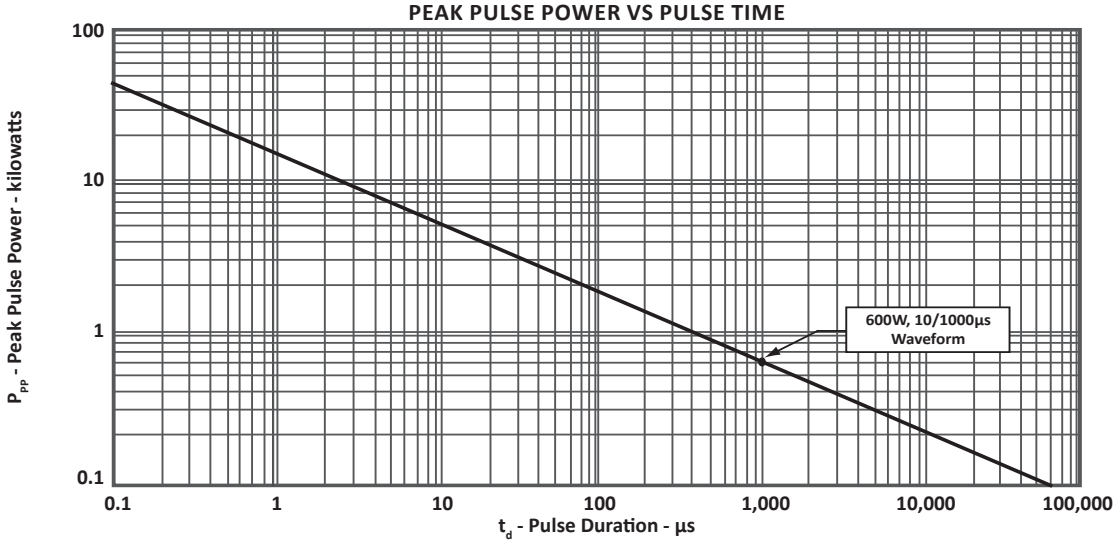


FIGURE 2
PULSE WAVEFORM

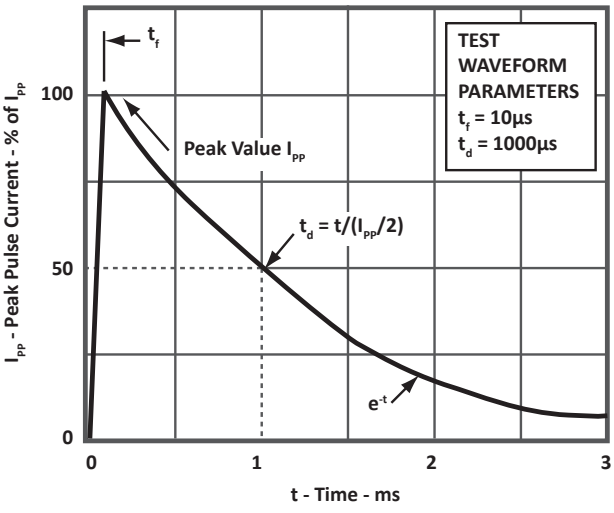
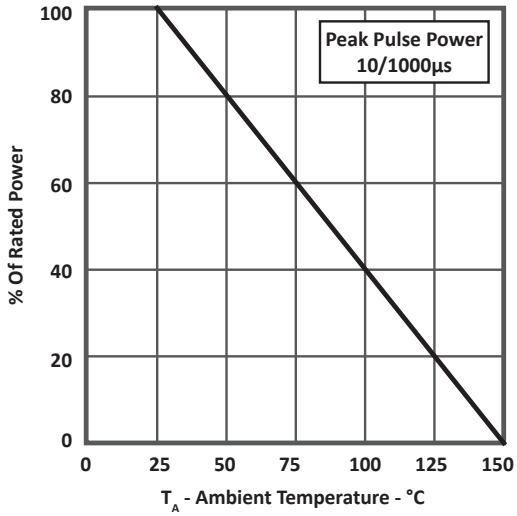


FIGURE 3
POWER DERATING CURVE



TYPICAL DEVICE CHARACTERISTICS

FIGURE 4
TYPICAL JUNCTION CAPACITANCE

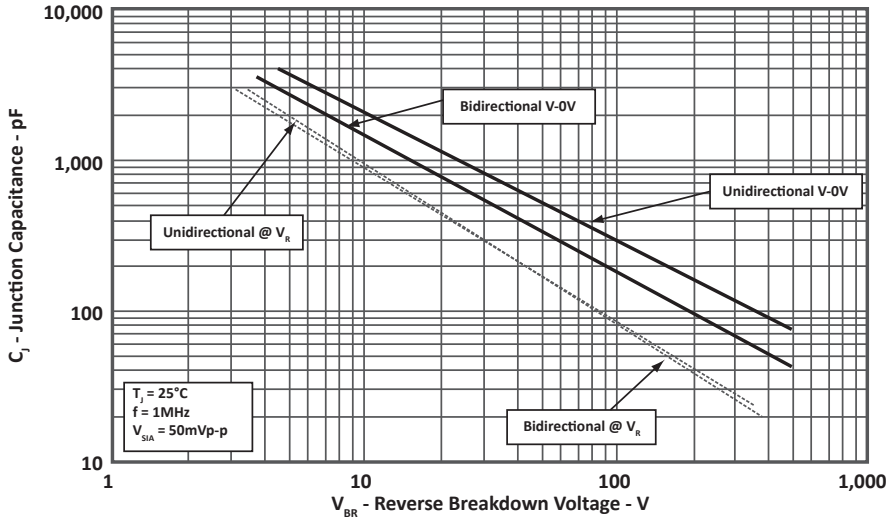


FIGURE 5
MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

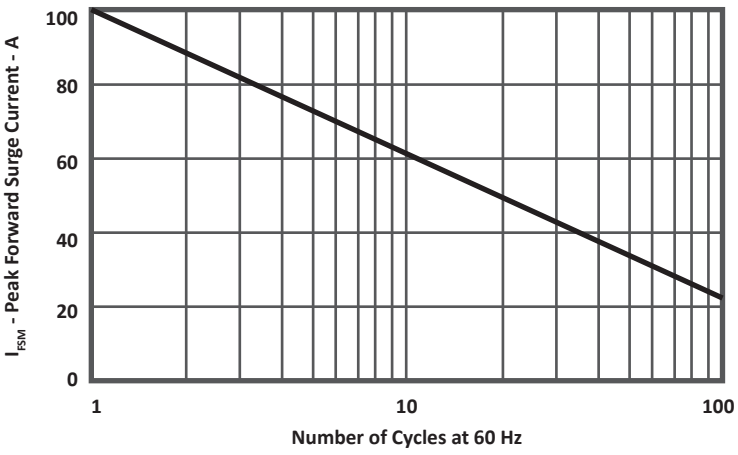
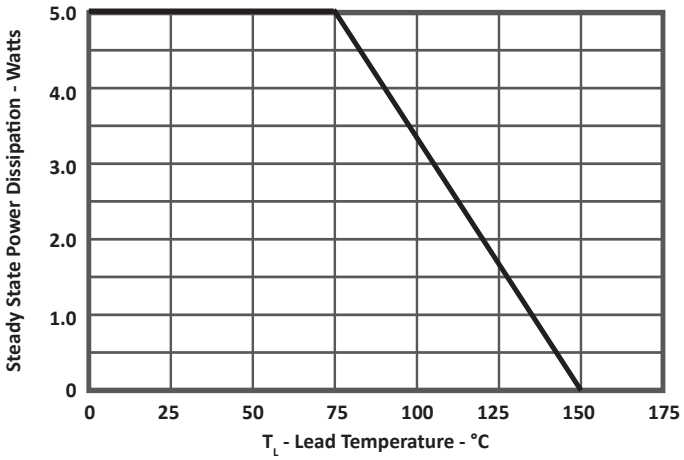


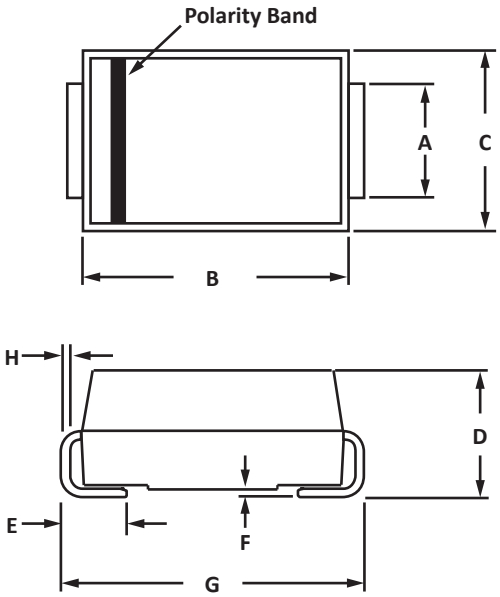
FIGURE 6
STEADY STATE POWER DERATING CURVE



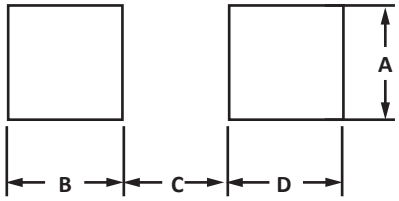
DO-214AA PACKAGE INFORMATION

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

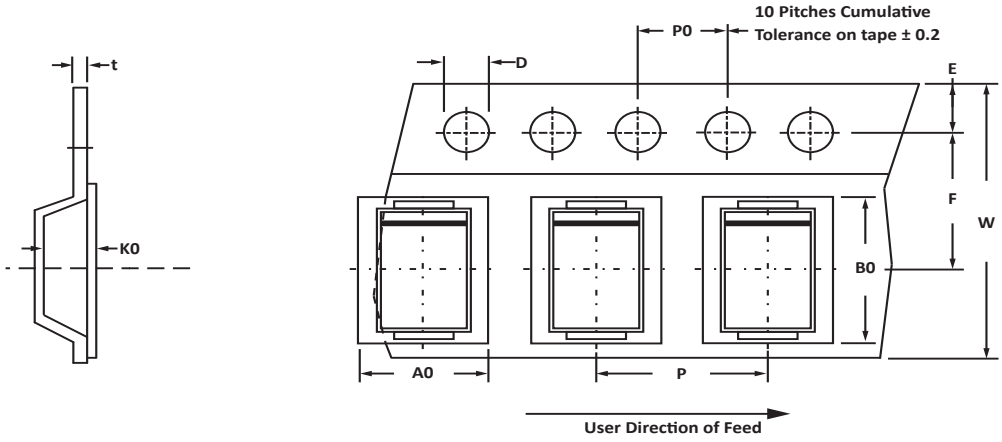
NOTES
1. Dimensions are exclusive of mold flash and metal burrs.



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
1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T13 = 13" Reel - 3,000 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
PAM30DOAAxxA/CA	N/A	-T13	3,000	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 LED wafer die for ESD protection and related high frequency products.

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