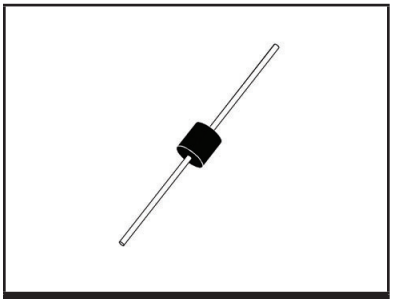
30kW POWER TVS COMPONENT



AXIAL LEAD PACKAGE

DESCRIPTION

The 30KPA Series, are discrete 30,000 Watt, silicon transient voltage suppressors (TVS) designed for use in applications where large voltage transients can permanently damage voltage sensitive components and equipment.

The 30KPA series is available in voltages ranging from 30V to 360V with 5 percent and 10 percent tolerances. Both tolerances are referenced to the power supply output or operating voltage level. This series is compatible with IEC 61000-4-5 (Surge) requirements.

FEATURES

- Compatible with IEC 61000-4-5 (Surge): 48A, 8/20µs - L3(Line-Ground), L4(Line-Line) & L1 (Power)
- 30,000 Watts Peak Pulse Power per Line (tp = 10/1000µs)
- Unidirectional and Bidirectional Configurations
- Easy Mounting to Printed Circuit Board
- tClamping (0V to V_{BR} Min.) < 1 x 10^{-12} seconds theoretical (Unidirectional) and < 5ns (Bidirectional)
- Available in Multiple Voltages Ranging From 30V to 360V
- RoHS Complaint (Exemption #7)

APPLICATIONS

- Relay Drives
- Motor (Start/Stop) Back EMF Protection
- Module Lightning Protection
- Secondary Lightning Protection for AC/DC

MECHANICAL CHARACTERISTICS

- Molded Case
- Approximate Weight: 5 grams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
  Pure-Tin - Sn, 100: 260-270°C
- Flammability Rating UL 94V-0

CIRCUIT DIAGRAMS

UNIDIRECTIONAL

BIDIRECTIONAL

TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	**SYMBOL**	**VALUE**	**UNITS**
Peak Pulse Power (tp = 10/1000µs) - See Figure 1	P_{PP}	30,000	Watts
Forward Surge Rating - 1/120 seconds - See Note 2	I_F	200	Amps
Steady State Power Dissipation	P_P	8.0	Watts
Storage Temperature	T_{STG}	-55 to 150	°C
Operating Temperature	T_L	-55 to 150	°C

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Notes 1 - 2)	RATED STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE		MAXIMUM LEAKAGE CURRENT	MAXIMUM CLAMPING VOLTAGE (Fig. 2)	TEMPERATURE COEFFICIENT OF $V_{(BR)}$
	V_{WM} VOLTS	MIN $V_{(BR)}$ VOLTS	@I_T mA	@V_{WM} I_D µA	@ 10/1000µS V_C @ I_{PP}	$qV_{(BR)}$ mV/°C
30KPA30A	30.0	33.3	50	5000	55.2V @ 543.0A	34
30KPA33A	33.0	36.7	50	5000	58.6V @ 512.0A	39
30KPA36A	36.0	40.0	50	2000	61.8V @ 485.0A	41
30KPA43A	43.0	47.8	50	1000	73.0V @ 410.0A	50
30KPA48A	48.0	53.3	5	250	77.4V @ 388.0A	56
30KPA58A	58.0	64.4	5	20	92.4V @ 325.0A	68
30KPA64A	64.0	71.1	5	10	104.0V @ 294.0A	76
30KPA70A	70.0	77.8	5	10	109.0V @ 274.0A	83
30KPA75A	75.0	83.3	5	10	119.4V @ 251.0A	89
30KPA85A	85.0	94.4	5	10	139.0V @ 216.0A	105
30KPA90A	90.0	100.0	5	10	147.0V @ 206.0A	109
30KPA100	100.0	111.0	5	10	179.0V @ 168.0A	134
30KPA100A	100.0	111.0	5	10	162.0V @ 186.0A	121
30KPA130A	130.0	144.0	5	10	209.0V @ 142.0A	157
30KPA160A	160.0	178.0	5	10	252.6V @ 119.0A	195
30KPA170A	170.0	189.0	5	10	274.0V @ 110.0A	207
30KPA180A	180.0	200.0	5	10	291.0V @ 104.0A	230
30KPA220A	220.0	245.0	5	10	356.0V @ 84.0A	269
30KPA250A	250.0	277.0	5	10	404.0V @ 74.0A	314
30KPA260A	260.0	289.0	5	10	416.0V @ 72.0A	317
30KPA280A	280.0	311.0	5	10	464.0V @ 65.0A	342
30KPA300A	300.0	334.0	5	10	484.0V @ 62.0A	368
30KPA320A	320.0	356.0	5	10	530.0V @ 57.0A	370
30KPA360A	360.0	400.0	5	10	640.0V @ 55.0A	380

NOTES
1. Part numbers shown are unidirectional devices. Add a "CA" suffix to specify bidirectional devices, such as 30KPA30**CA**.
2. V_F = 15 Volts @ 200A, 8.3ms(1/2 Sine Wave) - *Unidirectional devices only*.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

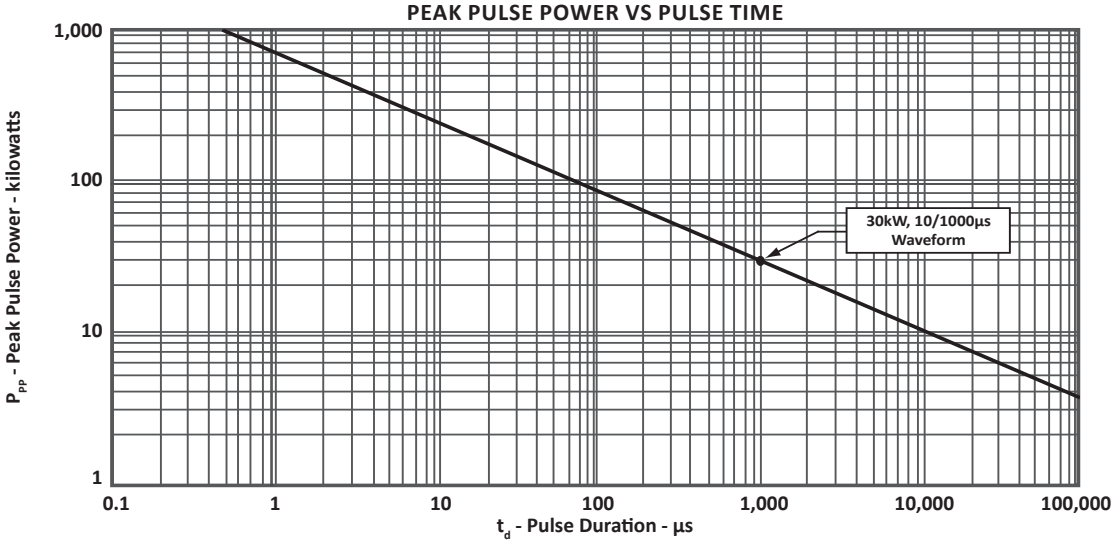


FIGURE 2
PULSE WAVEFORM

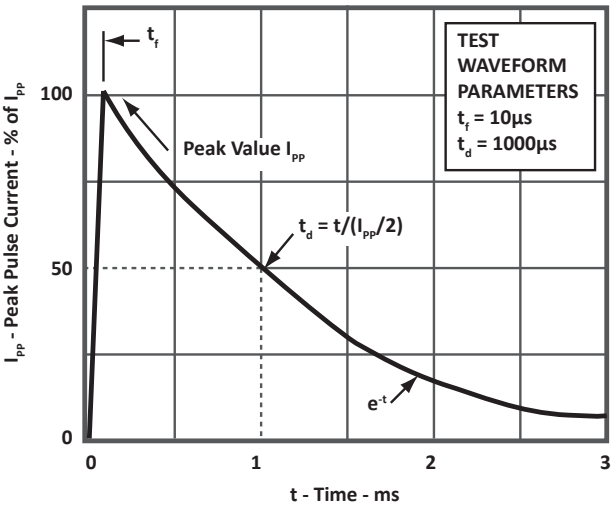
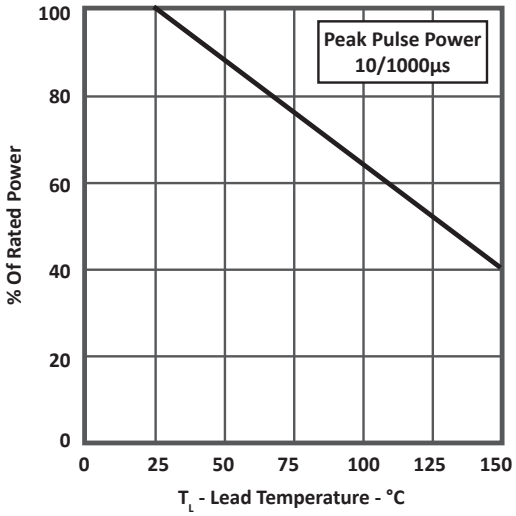


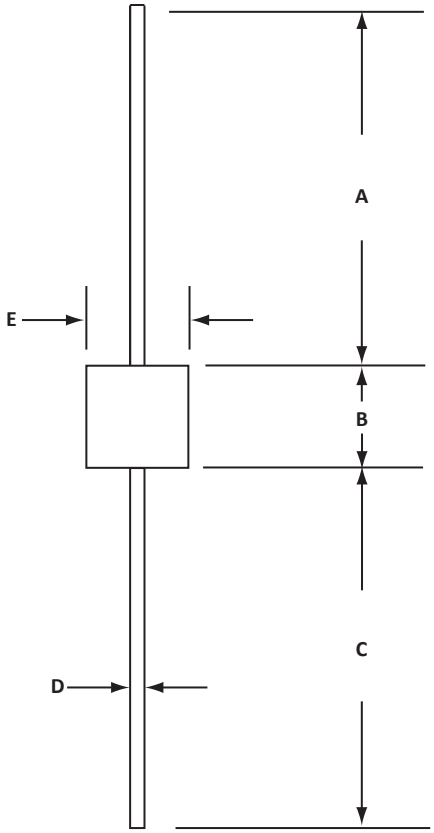
FIGURE 3
POWER DERATING CURVE



AXIAL LEAD PACKAGE INFORMATION

OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	24.5	-	1.00	-
B	8.60	9.10	0.34	0.36
C	24.5	-	1.00	-
D	1.20 DIA.	1.30 DIA.	0.048 DIA.	0.052 DIA.
E	8.60	9.10	0.34	0.36

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



ORDERING INFORMATION					
BASE PART NUMBER (xx = Voltage)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
30KPAxx	-LF	n/a	n/a	n/a	n/a
30KPAxxA	-LF	n/a	n/a	n/a	n/a
30KPAxxCA	-LF	n/a	n/a	n/a	n/a

NOTES
1. Marking on Part - logo, part number, date code and positive terminal marked with band(unidirectional only).

MARKING DIAGRAM

Package outline per document number 06028.R2 9/09.

COMPANY INFORMATION

COMPANY PROFILE

ProTek Devices, based in Tempe, Arizona USA, is a manufacturer of Transient Voltage Suppression (TVS) products designed specifically for the protection of electronic systems from the effects of lightning, Electrostatic Discharge (ESD), Nuclear Electromagnetic Pulse (NEMP), inductive switching and EMI/RFI. With over 25 years of engineering and manufacturing experience, ProTek designs TVS devices that provide application specific protection solutions for all electronic equipment/systems.

ProTek Devices Analog Products Division, also manufactures analog interface, control, RF and power management products.

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