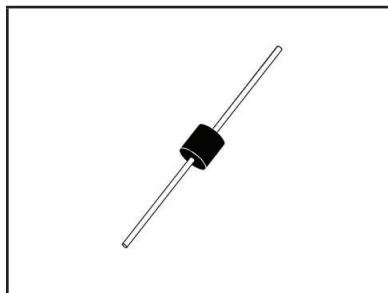


## 30kW POWER TVS COMPONENT



**AXIAL LEAD PACKAGE**

### DESCRIPTION

The P30KP 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 P30KP 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, 8/20 $\mu$ s - L3(Line-Ground), L4(Line-Line) & L1 (Power)
- 30,000 Watts Peak Pulse Power per Line (tp = 10/1000 $\mu$ s)
- Unidirectional and Bidirectional Configurations
- Easy Mounting to Printed Circuit Board
- tClamping (0V to  $V_{BR}$  Min.) < 1 x 10<sup>-12</sup> 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 <sub>PP</sub>	30,000	Watts
Forward Surge Rating - 1/120 seconds - See Note 2	I <sub>F</sub>	200	Amps
Steady State Power Dissipation	P <sub>P</sub>	1.0	Watts
Storage Temperature	T <sub>STG</sub>	-55 to 150	°C
Operating Temperature	T <sub>L</sub>	-55 to 150	°C

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

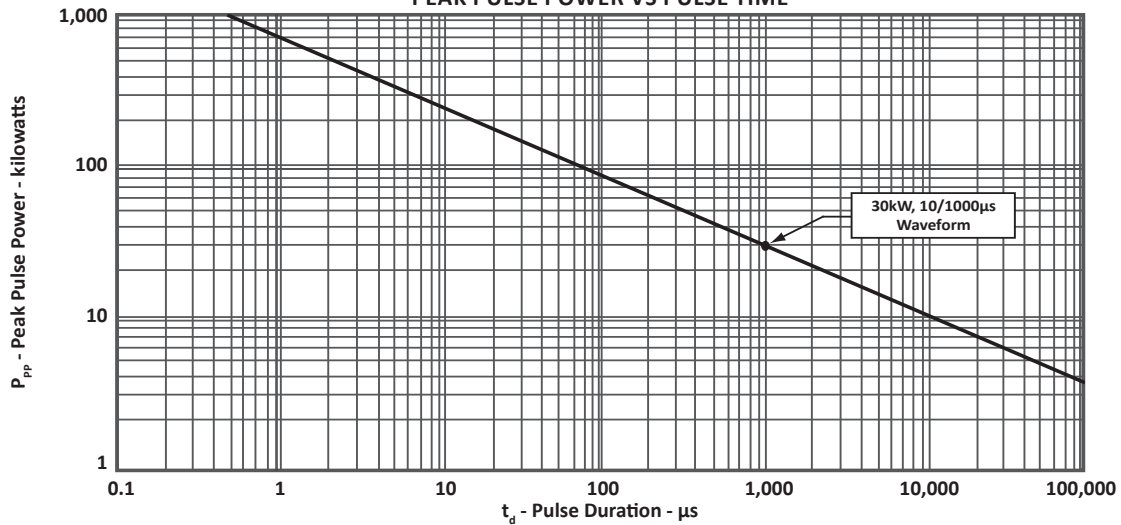
PART NUMBER (Notes 1 - 2)	RATED STAND-OFF VOLTAGE  V <sub>WM</sub> VOLTS	BREAKDOWN VOLTAGE		MAXIMUM LEAKAGE CURRENT  @V <sub>WM</sub> I <sub>D</sub> μA	MAXIMUM CLAMPING VOLTAGE (Fig. 2)  @ 10/1000μS V <sub>C</sub> @ I <sub>PP</sub>	TEMPERATURE COEFFICIENT OF V <sub>(BR)</sub>  qV <sub>(BR)</sub> mV/°C
		MIN V <sub>(BR)</sub> VOLTS	@I <sub>T</sub> mA			
P30KP30A	30.0	33.3	50	5000	55.2V @ 543.0A	34
P30KP33A	33.0	36.7	50	5000	58.6V @ 512.0A	39
P30KP36A	36.0	40.0	50	2000	61.8V @ 485.0A	41
P30KP43A	43.0	47.8	50	1000	73.0V @ 410.0A	50
P30KP48A	48.0	53.3	5	250	77.4V @ 388.0A	56
P30KP54A	54.0	60.3	5	20	91.4V @ 331.5A	62
P30KP58A	58.0	64.4	5	20	92.4V @ 325.0A	68
P30KP64A	64.0	71.1	5	10	104.0V @ 294.0A	76
P30KP70A	70.0	77.8	5	10	109.0V @ 274.0A	83
P30KP75A	75.0	83.3	5	10	119.4V @ 251.0A	89
P30KP85A	85.0	94.4	5	10	139.0V @ 216.0A	105
P30KP90A	90.0	100.0	5	10	147.0V @ 206.0A	109
P30KP100	100.0	111.0	5	10	179.0V @ 168.0A	134
P30KP100A	100.0	111.0	5	10	162.0V @ 186.0A	121
P30KP130A	130.0	144.0	5	10	209.0V @ 142.0A	157
P30KP160A	160.0	178.0	5	10	252.6V @ 119.0A	195
P30KP170A	170.0	189.0	5	10	274.0V @ 110.0A	207
P30KP180A	180.0	200.0	5	10	291.0V @ 104.0A	230
P30KP220A	220.0	245.0	5	10	356.0V @ 84.0A	269
P30KP260A	260.0	289.0	5	10	416.0V @ 72.0A	317
P30KP280A	280.0	311.0	5	10	464.0V @ 65.0A	342
P30KP300A	300.0	334.0	5	10	484.0V @ 62.0A	368
P30KP320A	320.0	356.0	5	10	530.0V @ 57.0A	370
P30KP360A	360.0	400.0	5	10	640.0V @ 55.0A	380

**NOTES**

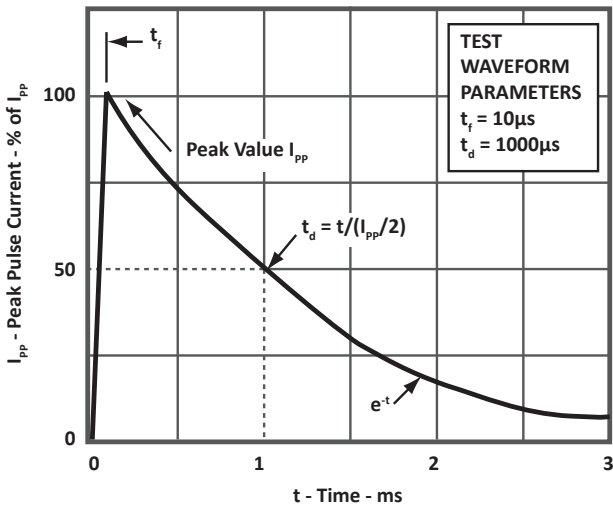
- Part numbers shown are unidirectional devices. Add a "CA" suffix to specify bidirectional devices, such as P30KP30CA. Devices shown are preferred voltages. Contact factory for additional voltages.
- V<sub>F</sub> = 15 Volts @ 200A, 8.3ms(1/2 Sine Wave) - Unidirectional devices only.

**TYPICAL DEVICE CHARACTERISTICS**

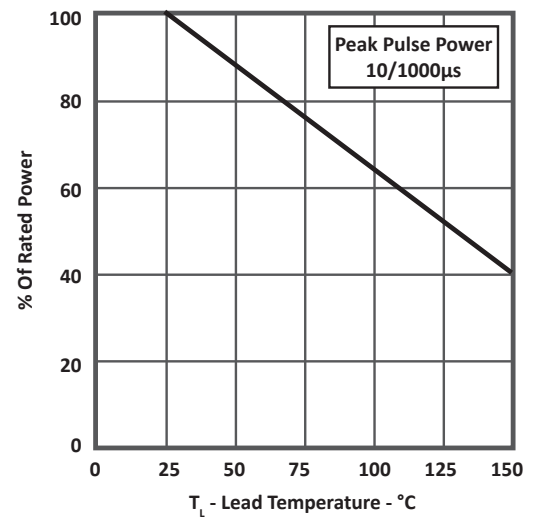
**FIGURE 1  
PEAK PULSE POWER VS PULSE TIME**



**FIGURE 2  
PULSE WAVEFORM**



**FIGURE 3  
POWER DERATING CURVE**

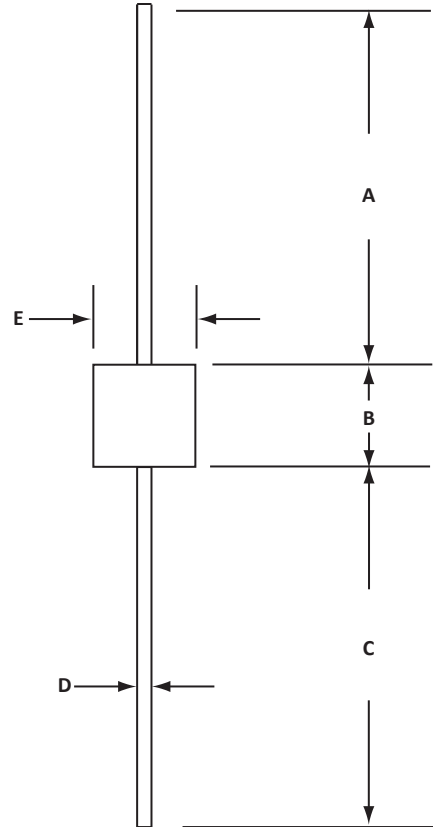


**AXIAL LEAD(MOD) PACKAGE INFORMATION**
**OUTLINE DIMENSIONS**

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	25.4	-	1.00	-
B	9.27	9.77	0.365	0.385
C	25.4	-	1.00	-
D	1.20 DIA.	1.30 DIA.	0.048 DIA.	0.052 DIA.
E	5.96	6.47	0.235	0.255

**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
P30KPxx	-LF	n/a	n/a	n/a	n/a
P30KPxxA	-LF	n/a	n/a	n/a	n/a
P30KPxxCA	-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**


## COMPANY INFORMATION

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### 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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