

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

- RTCA DO-160G COMPLIANT PRODUCT
- Compatible with IEC 61000-4-5 (Surge): 48A, 8/20 μ s - L3(Line-Ground), L4(Line-Line) & L1 (Power)
- 30,000 Watts Peak Pulse Power per Line (tp = 10/1000 μ s)
- Unidirectional and Bidirectional Configurations
- Easy Mounting to Printed Circuit Board
- tClamping (0V to V_{BR} Min.) < 1 x 10⁻¹² seconds theoretical
- Available in Multiple Voltages Ranging From 30V to 260V

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
- Tin-Lead Plating
- Solder Reflow Temperature: 240-245°C
- Flammability Rating UL 94V-0

CIRCUIT DIAGRAMS



UNIDIRECTIONAL



BIDIRECTIONAL

TYPICAL DEVICE CHARACTERISTICS

RTCA DO-160G COMPLIANT PRODUCT

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	1.0	Watts
Storage Temperature	T_{STG}	-55 to 150	°C
Operating Temperature	T_L	-55 to 150	°C

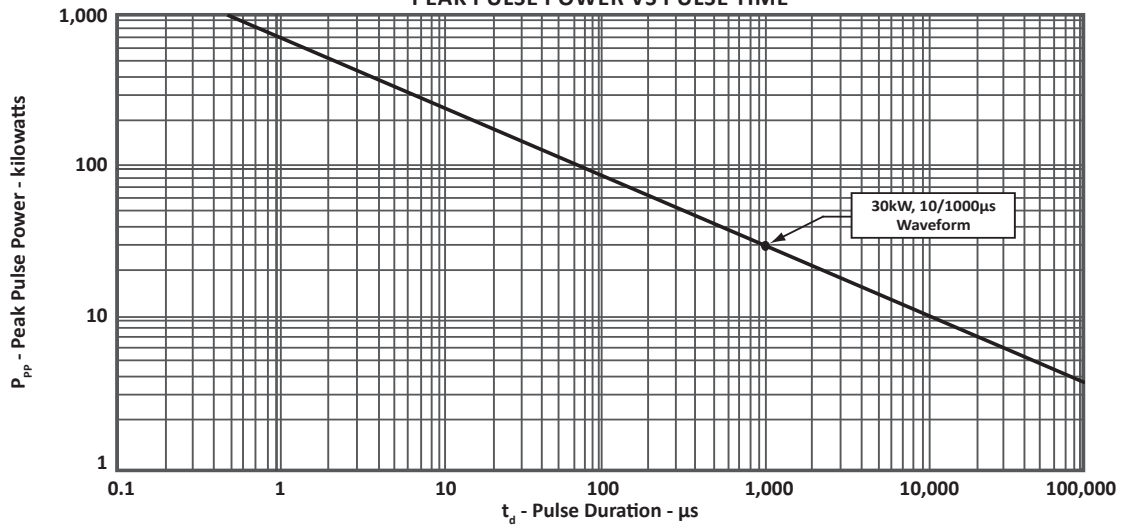
ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Notes 1 - 2)	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	BREAKDOWN VOLTAGE		MAXIMUM LEAKAGE CURRENT $@V_{WM}$ I_D µA	MAXIMUM CLAMPING VOLTAGE (Fig. 2) $@ 10/1000µS$ $V_C @ I_{PP}$	TEMPERATURE COEFFICIENT OF $V_{(BR)}$ $qV_{(BR)}$ mV/°C
		MIN $V_{(BR)}$ VOLTS	$@I_T$ 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
P30KP78A	78.0	87.10	5	10	129.0V @ 234.9A	92
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

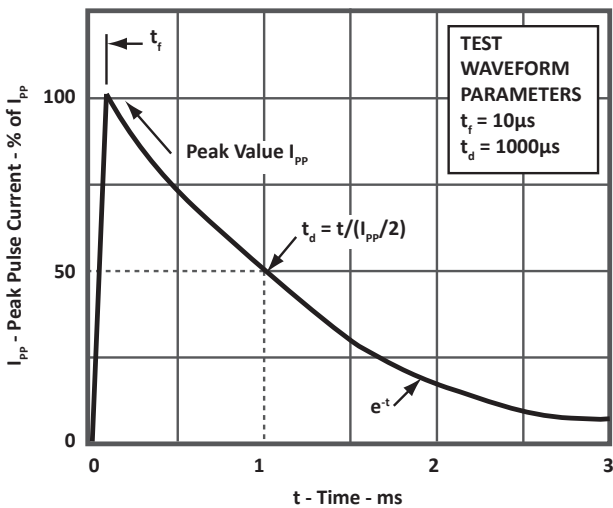
NOTES

- 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.
- $V_p = 15$ Volts @ 200A, 8.3ms(1/2 Sine Wave) - Unidirectional devices only.

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



**FIGURE 2
PULSE WAVEFORM**



**FIGURE 3
POWER DERATING CURVE**

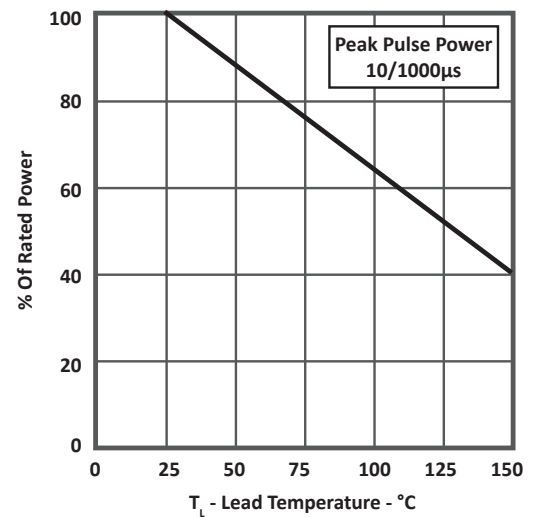
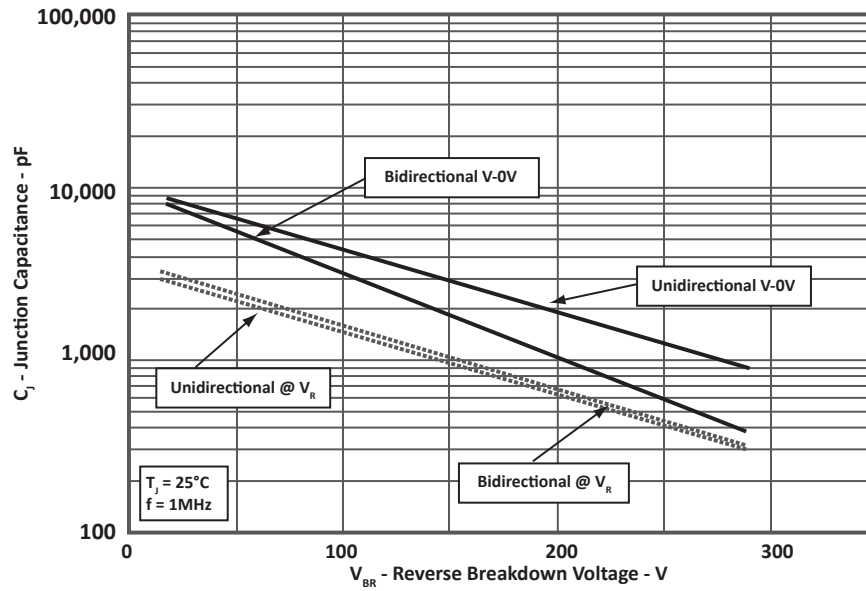


FIGURE 4
TYPICAL JUNCTION CAPACITANCE



AXIAL LEAD(MOD) PACKAGE INFORMATION

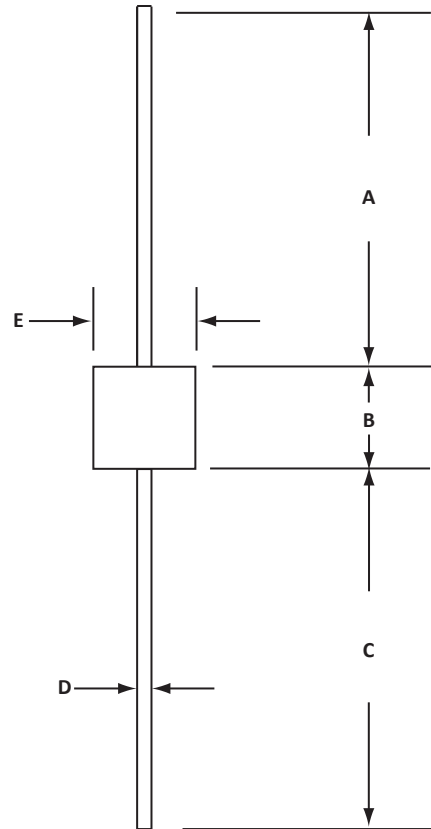
RTCA DO-160G COMPLIANT PRODUCT

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	n/a	n/a	n/a	n/a	n/a
P30KPxxA	n/a	n/a	n/a	n/a	n/a
P30KPxxCA	n/a	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**RTCA DO-160G COMPLIANT PRODUCT****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.

CONTACT US**Corporate Headquarters**

2929 South Fair Lane
Tempe, Arizona 85282
USA

By Telephone

General: 602-431-8101
Sales: & Marketing: 602-414-5109
Customer Service: 602-414-5114
Product Technical Support: 602-414-5107

By Fax

General: 602-431-2288

By E-mail:

Asia Sales: asiasales@protekdevices.com
Europe Sales: europesales@protekdevices.com
U.S. Sales: ussales@protekdevices.com
Distributor Sales: distysales@protekdevices.com
Customer Service: service@protekdevices.com
Technical Support: support@protekdevices.com

ProTek Devices (Asia Pacific) Pte. Ltd.

8 Ubi Road 2, #06-19
Zervex
Singapore - 408538
Tel: +65-67488312
Fax: +65-67488313

Web

www.protekdevices.com

COPYRIGHT © ProTek Devices 2009 - This literature is subject to all applicable copyright laws and is not for resale in any manner.

SPECIFICATIONS: ProTek reserves the right to change the electrical and or mechanical characteristics described herein without notice.

DESIGN CHANGES: ProTek reserves the right to discontinue product lines without notice and that the final judgement concerning selection and specifications is the buyer's and that in furnishing engineering and technical assistance. ProTek assumes no responsibility with respect to the selection or specifications of such products. ProTek makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ProTek assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability without limitation special, consequential or incidental damages.

LIFE SUPPORT POLICY: ProTek Devices products are not authorized for use in life support systems without written consent from the factory.