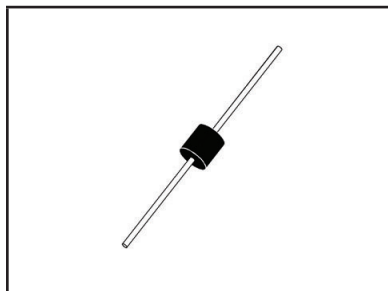


5kW POWER TVS COMPONENT



AXIAL LEAD PACKAGE

DESCRIPTION

The 5KPxxA/CA Series, are discrete 5,000 Watt, silicon transient voltage suppressors (TVS) designed for use in applications where large voltage transients can permanently damage voltage sensitive components and equipment.

The 5KPxxA/CA series is available in multiple voltages and is compatible with IEC 61000-4-5 (Surge) requirements.

FEATURES

- Compatible with IEC 61000-4-5 (Surge): 48A, 8/20 μ s - L3(Line-Ground), L4(Line-Line) & L1 (Power)
- 5,000 Watts Peak Pulse Power per Line ($t_p = 10/1000\mu$ s)
- Unidirectional and Bidirectional Configurations
- Easy Mounting to Printed Circuit Board
- tClamping (0V to V_{BR} Min.) $< 1 \times 10^{-12}$ seconds theoretical
- Available in Multiple Voltages
- 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}	5,000	Watts
Forward Surge Rating - 1/120 seconds - See Note 2	I _F	500	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
Typical Thermal Resistance - Junction to Lead	R _{UJL}	8.0	°C/W
Typical Thermal Resistance - Junction to Ambient	R _{UJA}	40.0	°C/W

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Note 1)	RATED STAND-OFF VOLTAGE V _{WM} VOLTS	BREAKDOWN VOLTAGE		MAXIMUM LEAKAGE CURRENT @ V _{WM} I _D µA	MAXIMUM CLAMPING VOLTAGE (Fig. 2) 10/1000µs @ I _{PP} VOLTS	MAXIMUM REVERSE SURGE CURRENT @ I _{PP} AMPS
		MIN V _(BR) VOLTS	@ I _T mA			
5KP5.0A	5.0	6.4	50	5000	9.2	543
5KP6.0A	6.0	6.67	50	5000	10.3	485
5KP6.5A	6.5	7.22	50	2000	11.2	446
5KP7.0A	7.0	7.78	50	1000	12.0	417
5KP7.5A	7.5	8.33	5	250	12.9	388
5KP8.0A	8.0	8.89	5	150	13.6	368
5KP8.5A	8.5	9.44	5	50	14.4	347
5KP9.0A	9.0	10.0	5	20	15.4	325
5KP10A	10.0	11.1	5	15	17.0	294
5KP11A	11.0	12.2	5	2	18.2	275
5KP12A	12.0	13.3	5	2	19.9	251
5KP13A	13.0	14.4	5	2	21.5	233
5KP14A	14.0	15.6	5	2	23.2	216
5KP15A	15.0	16.7	5	2	24.4	205
5KP16A	16.0	17.8	5	2	26.0	192
5KP17A	17.0	18.9	5	2	27.6	181
5KP18A	18.0	20.0	5	2	29.2	171
5KP19A	19.0	21.13	5	2	30.8	162
5KP20A	20.0	22.2	5	2	32.4	154
5KP22A	22.0	24.4	5	2	35.5	141
5KP24A	24.0	26.7	5	2	38.9	129
5KP26A	26.0	28.9	5	2	42.1	119
5KP28A	28.0	31.1	5	2	45.4	110
5KP30A	30.0	33.3	5	2	48.4	103

TYPICAL DEVICE CHARACTERISTICS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Note 1)	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	BREAKDOWN VOLTAGE		MAXIMUM LEAKAGE CURRENT @ V_{WM} I_D μA	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ I_{PP} VOLTS	MAXIMUM REVERSE SURGE CURRENT @ I_{PP} AMPS
		MIN $V_{(BR)}$ VOLTS	@ I_T mA			
5KP33A	33.0	36.7	5	2	53.3	93.8
5KP36A	36.0	40.0	5	2	58.1	86.1
5KP40A	40.0	44.4	5	2	64.5	77.5
5KP43A	43.0	47.8	5	2	69.4	72.1
5KP45A	45.0	50.0	5	2	72.7	68.8
5KP48A	48.0	53.3	5	2	77.4	64.6
5KP51A	51.0	56.7	5	2	82.4	60.7
5KP54A	54.0	60.0	5	2	87.1	57.4
5KP58A	58.0	64.4	5	2	93.6	53.4
5KP60A	60.0	66.7	5	2	96.8	51.7
5KP64A	64.0	71.1	5	2	103.0	48.5
5KP70A	70.0	77.8	5	2	113.0	44.3
5KP75A	75.0	83.3	5	2	121.0	41.3
5KP78A	78.0	86.7	5	2	126.0	40.0
5KP80A	80.0	88.8	5	2	129.6	38.6
5KP85A	85.0	94.4	5	2	137.0	36.5
5KP90A	90.0	100.0	5	2	146.0	34.3
5KP100A	100.0	111.0	5	2	162.0	30.9
5KP110A	110.0	122.0	5	2	177.0	28.3
5KP120A	120.0	133.0	5	2	193.0	25.9
5KP130A	130.0	144.0	5	2	209.0	23.9
5KP140A	140.0	155.0	5	2	226.8	22.1
5KP150A	150.0	167.0	5	2	243.0	20.1
5KP160A	160.0	178.0	5	2	259.0	19.3
5KP170A	170.0	189.0	5	2	275.0	18.2
5KP180A	180.0	200.0	5	2	291.6	17.2
5KP190A	190.0	211.0	5	2	307.8	16.2
5KP200A	200.0	224.0	5	2	324.0	15.4
5KP210A	210.0	233.0	5	2	349.5	14.3
5KP220A	220.0	246.0	5	2	356.0	14.0
5KP250A	250.0	279.0	5	2	405.0	12.4
5KP300A	300.0	335.0	5	2	486.0	10.3

TYPICAL DEVICE CHARACTERISTICS
ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Note 1)	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	BREAKDOWN VOLTAGE		MAXIMUM LEAKAGE CURRENT @ V_{WM} I_D μA	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ I_{PP} VOLTS	MAXIMUM REVERSE SURGE CURRENT @ I_{PP} AMPS
		MIN $V_{(BR)}$ VOLTS	@ I_T mA			
5KP350A	350.0	391.0	5	2	567.0	8.8
5KP400A	400.0	447.0	5	2	648.0	7.7
5KP440A	440.0	492.0	5	2	713.0	7.0

NOTES

- Part numbers shown are unidirectional devices. Add a "CA" suffix to specify bidirectional devices, such as 5KP20CA.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

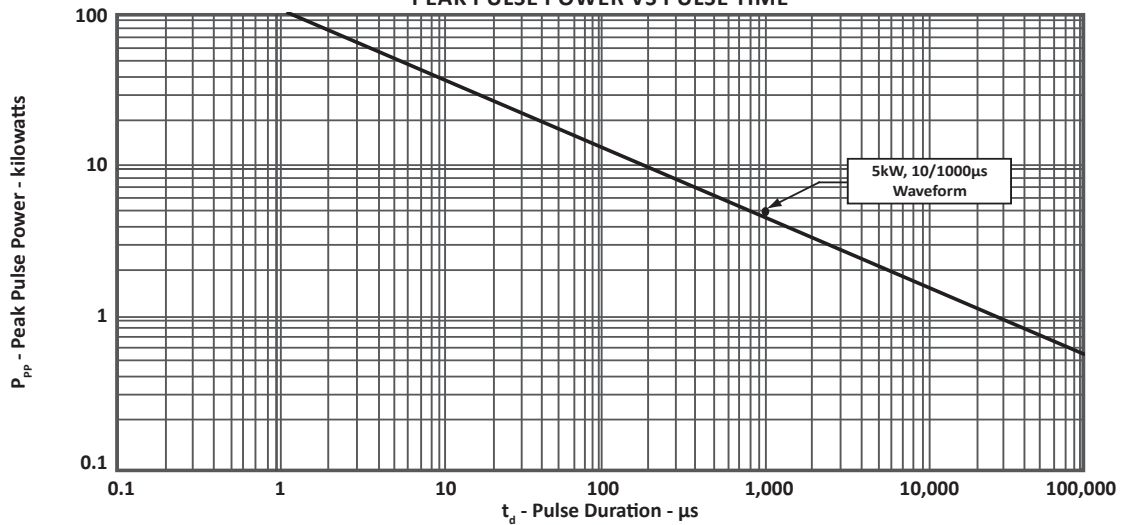


FIGURE 2
PULSE WAVEFORM

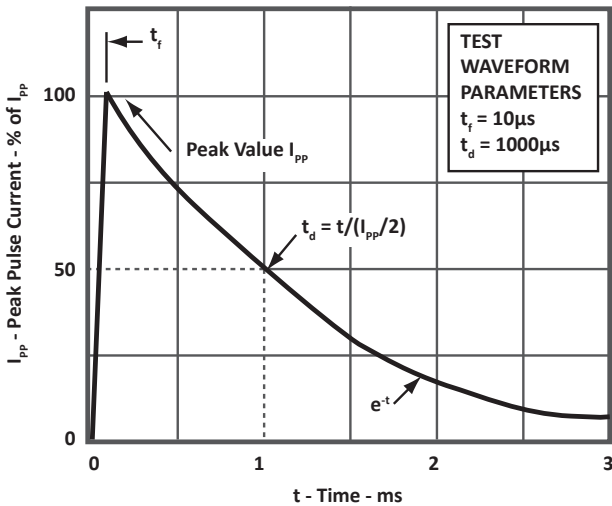
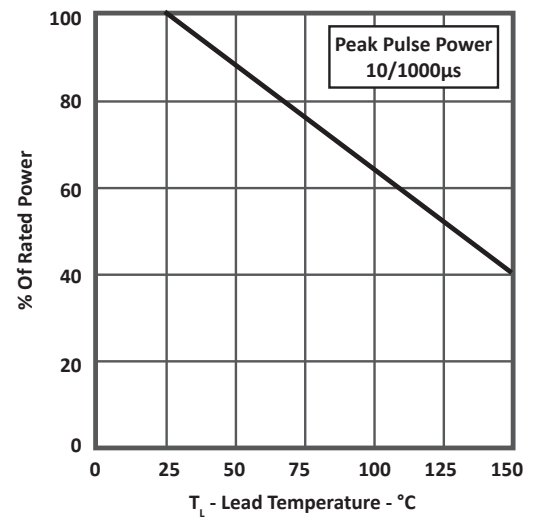


FIGURE 3
POWER DERATING CURVE



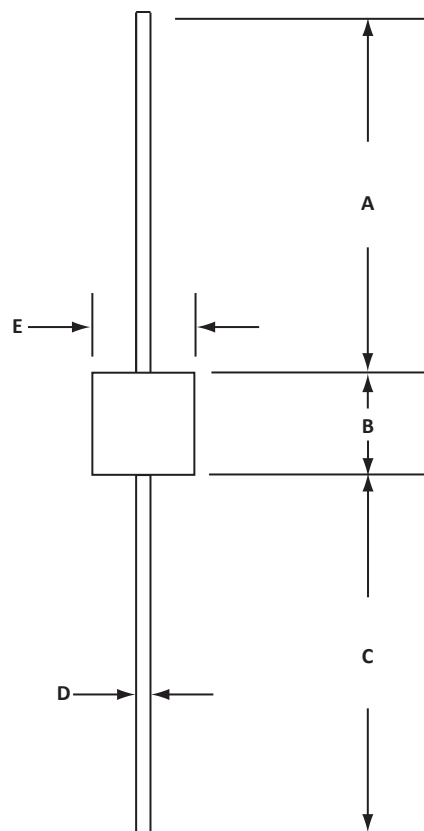
AXIAL LEAD PACKAGE INFORMATION

OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	24.5	-	1.00	-
B	8.64	9.14	0.34	0.36
C	24.5	-	1.00	-
D	1.22 DIA.	1.32 DIA.	0.048 DIA.	0.052 DIA.
E	8.64	9.14	0.34	0.36

NOTES

- 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
5KPxxA	-LF	-T13	800	13"	250
5KPxxCA	-LF	-T13	800	13"	250

NOTES

- Marking on Part - logo, part number, date code and positive terminal marked with band (unidirectional only).
- Parts come in bulk quantities unless otherwise requested.
- 250 piece minimum order quantity for bulk units and must be divisible by 250.

MARKING DIAGRAM



COMPANY INFORMATION

COMPANY PROFILE

In business more than 30 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection that include Transient Voltage Suppressor (TVS) Arrays, Steering Diode Array Hybrids, High-power Components and Modules, as well as Steering Diodes, EMI Filter/TVS Arrays and Thyristor Surge Suppressors. These components deliver circuit protection in electronic systems from numerous overvoltage events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices is an ISO 9001 certified company.

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

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