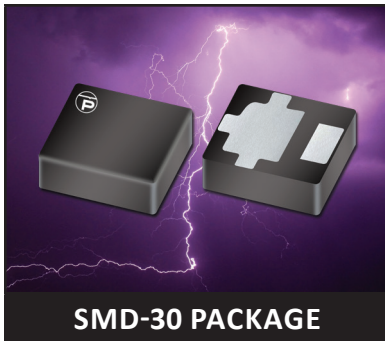


30kW SURFACE MOUNT POWER TVS COMPONENT



DESCRIPTION

The SM30KPA Series are high-powered surface mount transient voltage suppression components designed to protect equipment and systems from the damaging effects of high voltage spikes. The surface mount package configuration provides a lower profile at a reduce cost compared to legacy axial lead package configurations.

These devices provide 30,000 Watts of peak pulse power dissipation for an 10/1000 μ s waveform. Applications include AC and DC power line protection, terrestrial base station protection as well as module lightning protection.

FEATURES

- 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
- Available in Multiple Voltages Ranging From 30V to 75V
- tClamping (0V to V_(BR) Min) < 100ps, Theoretical for Unidirectional and 5ns for Bidirectional
- RoHS Complaint (Exemption #7)
- This series will continue to be supplied to current and/or new designs. However, ProTek recommends the SM30KPAxxxAN/CAN Series to be used in newer designs

APPLICATIONS

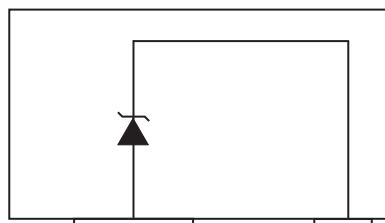
- Relay Drives
- Motor (Start/Stop) Back EMF Protection
- Module Lightning Protection
- Secondary Lightning Protection for AC/DC

MECHANICAL CHARACTERISTICS

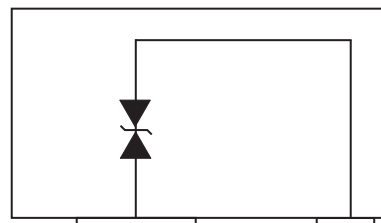
- Black Molded Case
- Approximate Weight: 4 grams
- Lead-Free Silver Plating
- Solder Reflow Temperature: 260-270°C
- Flammability Rating UL 94V-0

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	I_F	200	Amps
Steady State Power Dissipation	P_P	1.0	Watts
Storage Temperature	T_{STG}	TBD	°C
Operating Temperature	T_L	TBD	°C

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

UNIDIRECTIONAL PART NUMBER (Notes 1 - 2)	MARKING CODE	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM 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			
SM30KPA30A	30A	30.0	33.3	50	5000	55.2V @ 543.0A	34
SM30KPA36A	36A	36.0	40.0	50	2000	61.8V @ 485.0A	41
SM30KPA43A	43A	43.0	47.8	50	1000	73.0V @ 410.0A	50
SM30KPA48A	48A	48.0	53.3	5	250	77.4V @ 388.0A	56
SM30KPA58A	58A	58.0	64.4	5	20	92.4V @ 325.0A	68
SM30KPA64A	64A	64.0	71.1	5	10	104.0V @ 294.0A	76
SM30KPA75A	75A	75.0	83.3	5	10	119.4V @ 251.0A	89

NOTES

1. Devices shown are preferred voltages. Consult factory for additional voltages.
2. $V_{(MAX)} = 15$ Volts @ 200A, 8.3ms (1/2 Sine Wave) - unidirectional configuration only.

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

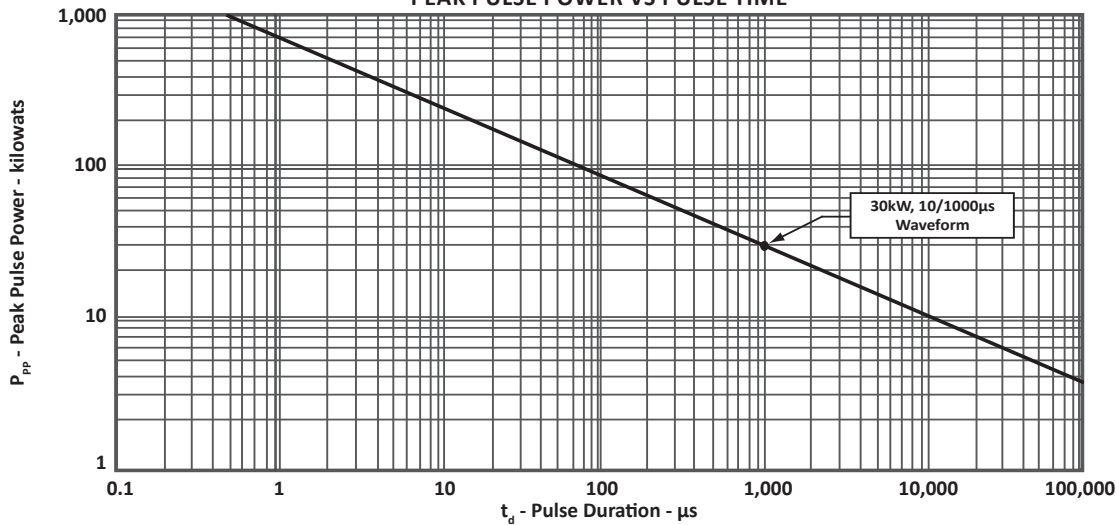
BIDIRECTIONAL PART NUMBER (Note 1)	MARKING CODE	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE		MAXIMUM LEAKAGE CURRENT @ V_{WM} I_D µA	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ 10/1000µS $V_C @ I_{PP}$	TEMPERATURE COEFFICIENT OF $V_{(BR)}$ $qV_{(BR)}$ mV/°C
			MIN $V_{(BR)}$ VOLTS	@ I_T mA			
SM30KPA30CA	30C	30.0	33.3	50	5000	55.2V @ 543.0A	34
SM30KPA33CA	33C	33.0	36.7	50	5000	58.6V @ 512.0A	39
SM30KPA48CA	48C	48.0	53.3	5	250	77.4V @ 388.0A	56
SM30KPA58CA	58C	58.0	64.4	5	20	92.4V @ 325.0A	68

NOTES

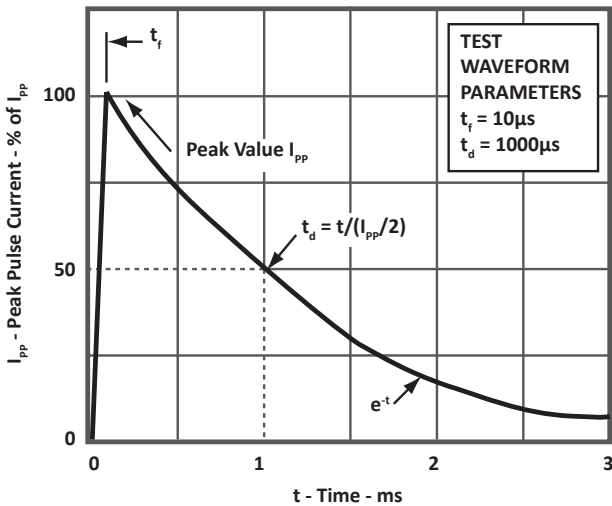
1. Devices shown are preferred voltages. Consult factory for additional voltages.

TYPICAL DEVICE CHARACTERISTICS

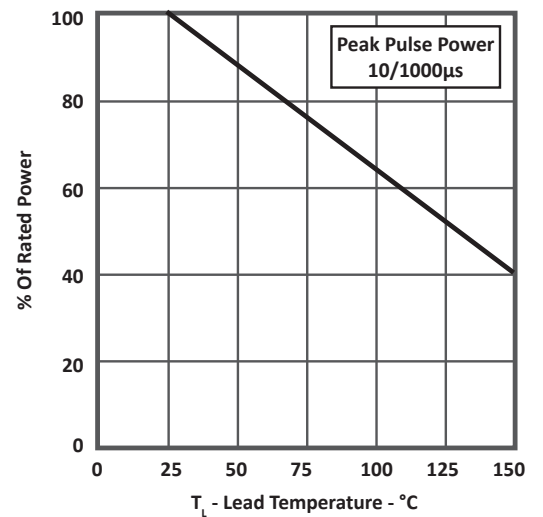
**FIGURE 1
PEAK PULSE POWER VS PULSE TIME**



**FIGURE 2
PULSE WAVEFORM**

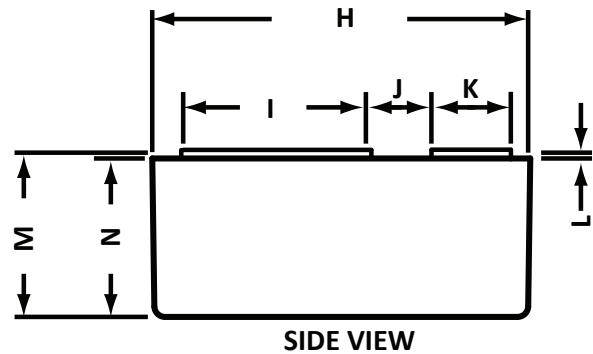
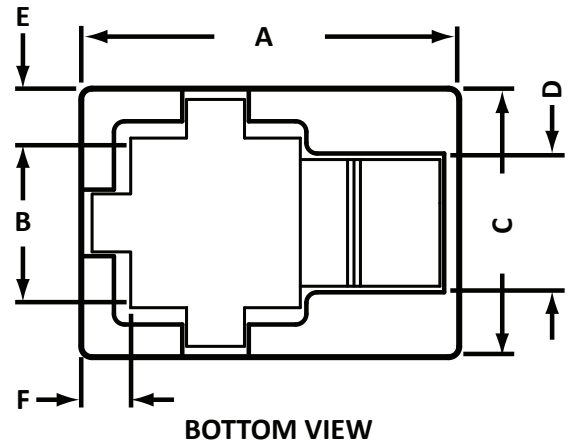


**FIGURE 3
POWER DERATING CURVE**



SMD-30 PACKAGE INFORMATION

OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	16.9	17.9	0.67	0.70
B	7.4	8.4	0.29	0.33
C	11.8	12.8	0.46	0.50
D	5.4	6.4	0.21	0.25
E	1.7	2.7	0.07	0.11
F	1.7	2.7	0.07	0.11
H	16.9	17.9	0.67	0.70
I	7.4	8.4	0.29	0.33
J	2.6	3.6	0.10	0.14
K	2.8	3.8	0.11	0.15
L	0.00	0.51	0.00	0.020
M	7.3	8.3	0.29	0.33
N	7.1	8.1	0.28	0.32

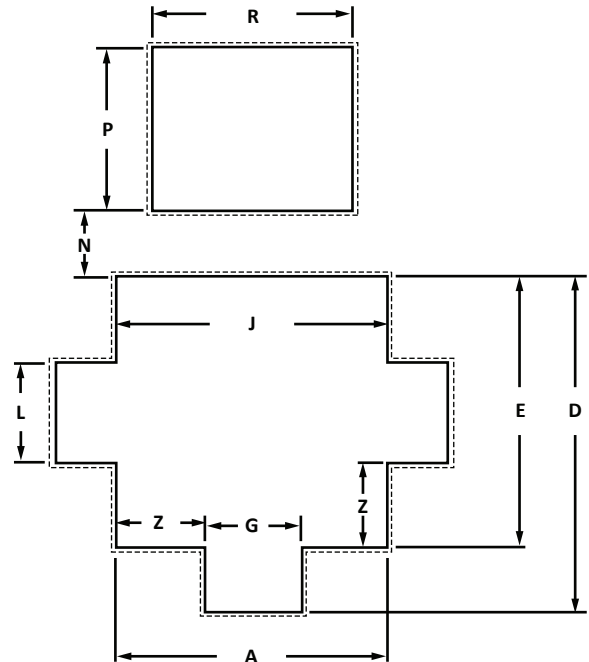


SMD-30 PACKAGE INFORMATION

SOLDER PAD OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	11.75	11.85	0.462	0.467
D	10.25	10.35	0.403	0.407
E	8.15	8.25	0.321	0.325
G	2.95	3.05	0.116	0.120
J	8.15	8.25	0.321	0.325
L	2.95	3.05	0.116	0.120
N	1.85	1.95	0.073	0.077
P	4.85	4.95	0.191	0.195
R	6.05	6.15	0.238	0.242
Z	2.55	2.65	0.100	0.104

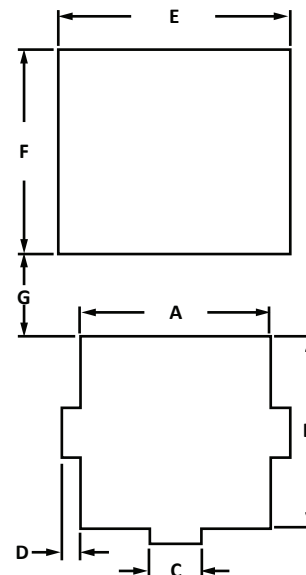
Suggested Solder Pad



SOLDER PRINT OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	5.75	5.85	0.226	0.230
B	5.75	5.85	0.226	0.230
C	1.45	1.55	0.057	0.061
D	0.45	0.55	0.018	0.022
E	6.95	7.05	0.274	0.278
F	6.05	6.15	0.238	0.242
G	2.45	2.55	0.096	1.00

Suggested Solder Print



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 high performance interface and linear products. They include analog switches; multiplexers; LED drivers; LED wafer die for ESD protection; audio control ICs; RF 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

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