

30kW SURFACE MOUNT POWER TVS COMPONENT

Coming Soon

SMD-30 PACKAGE

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)

MECHANICAL CHARACTERISTICS

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

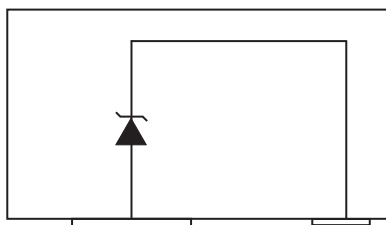
APPLICATIONS

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

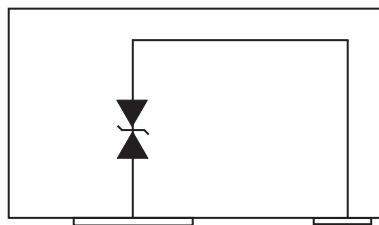
PRELIMINARY

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

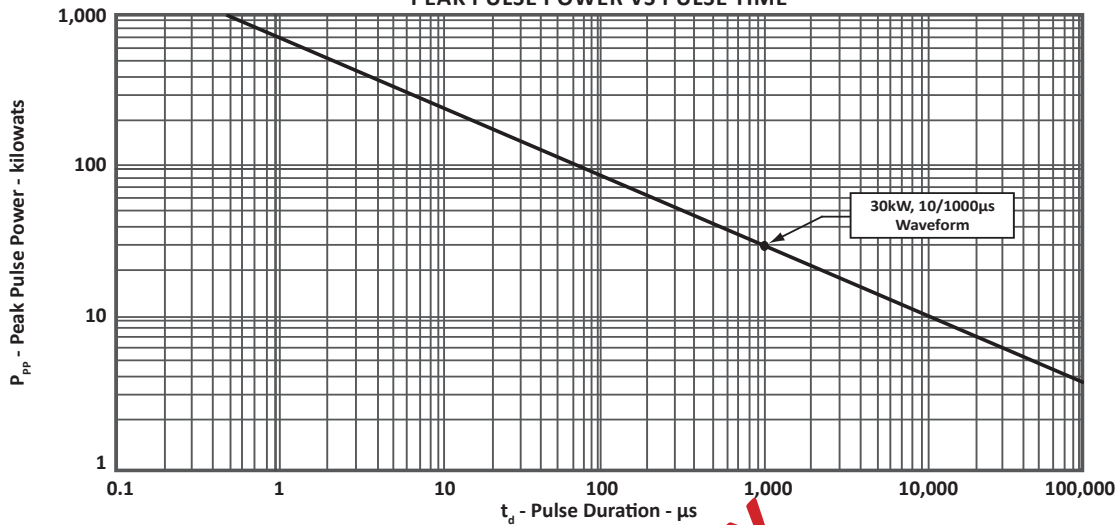
BIDIRECTIONAL PART NUMBER (Note 1)	MARKING CODE	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE		MAXIMUM LEAKAGE CURRENT @ V_{WM} I_D µA	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ 10/1000µS $V_C @ I_{PP}$	TEMPERATURE COEFFICIENT OF $V_{(BR)}$ $qV_{(BR)}$ mV/°C
			MIN $V_{(BR)}$ VOLTS	@ I_T mA			
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

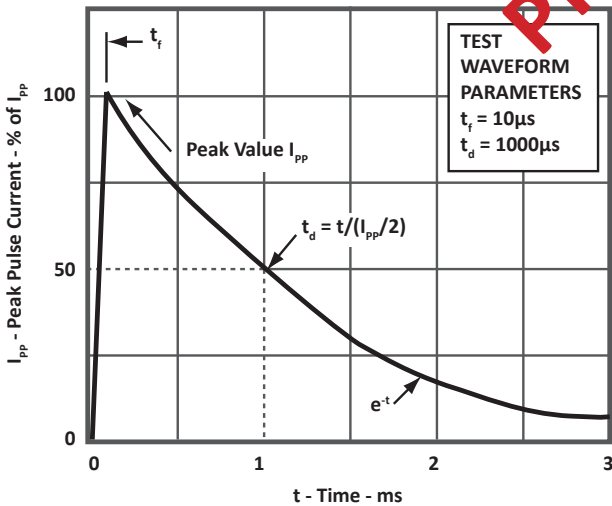
1. Devices shown are preferred voltages. Consult factory for additional voltages.

TYPICAL DEVICE CHARACTERISTICS

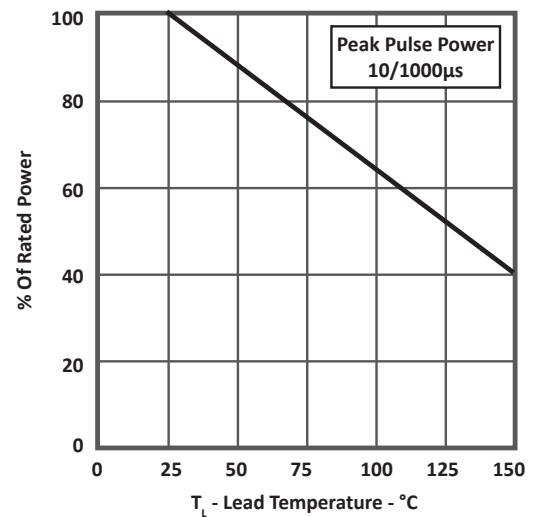
**FIGURE 1
PEAK PULSE POWER VS PULSE TIME**



**FIGURE 2
PULSE WAVEFORM**



**FIGURE 3
POWER DERATING CURVE**

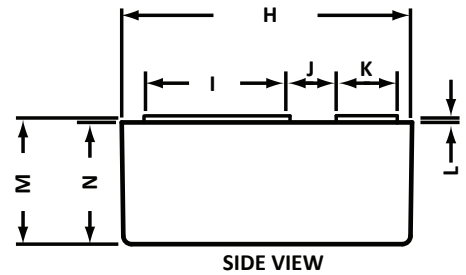
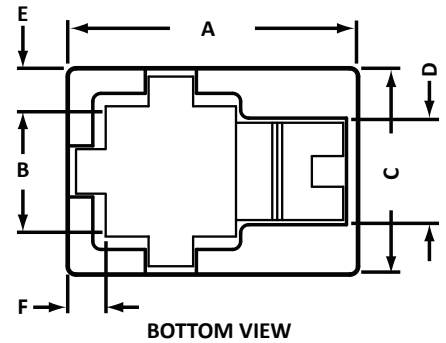


PRELIMINARY

SMD-30 PACKAGE INFORMATION

OUTLINE DIMENSIONS

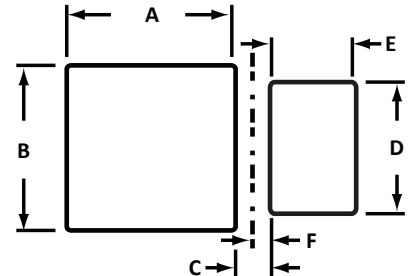
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	16.9	17.9	0.67	0.70
B	7.4	8.4	0.29	0.33
C	11.8	12.8	0.46	0.50
D	5.4	6.4	0.21	0.25
E	1.7	2.7	0.07	0.11
F	1.7	2.7	0.07	0.11
H	16.9	17.9	0.67	0.70
I	7.4	8.4	0.29	0.33
J	2.6	3.6	0.10	0.14
K	2.8	3.8	0.11	0.15
L	0.00	0.51	0.00	0.020
M	7.3	8.3	0.29	0.33
N	7.1	8.1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



PRELIMINARY

PAD LAYOUT DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.52	9.90	0.375	0.390
B	11.30	11.68	0.445	0.460
C	3.18	3.43	0.125	0.135
D	5.59	5.84	0.220	0.230
E	2.79	3.30	0.110	0.130
F	1.60	1.73	0.063	0.068



Package outline, pad layout and tape specifications per document number 06089.Rc 3/11

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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