

## DESCRIPTION

The SM5KWxxA/CA 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 DFN-2-5KW surface mount package configuration provides a lower profile at a reduce cost.

These devices provide 5,000 Watts of peak pulse power dissipation for an 10/1000 $\mu$ s waveform. Applications include relay drive protection module and secondary lightning protection.

## FEATURES

- RTCA DO-160G COMPLIANT PRODUCT
- Compatible with IEC 61000-4-2 (ESD): Air  $\pm 15$ kV, Contact  $\pm 8$ kV
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 28kW, 8/20 $\mu$ s
- 5,000 Watts Peak Pulse Power per Line ( $t_p = 10/1000\mu s$ )
- Unidirectional & Bidirectional Configurations
- Easy Mounting to Printed Circuit Board
- RoHS Compliant
- REACH Compliant

## APPLICATIONS

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

## MECHANICAL CHARACTERISTICS

- Molded DFN-2-5KW
- Approximate Weight: 2.5 grams
- Lead-Free Silver Plating
- Solder Reflow Temperature: 260-270°C
- Flammability Rating UL 94V-0

## APPLICATION

**Unidirectional****Bidirectional**

## TYPICAL DEVICE CHARACTERISTICS

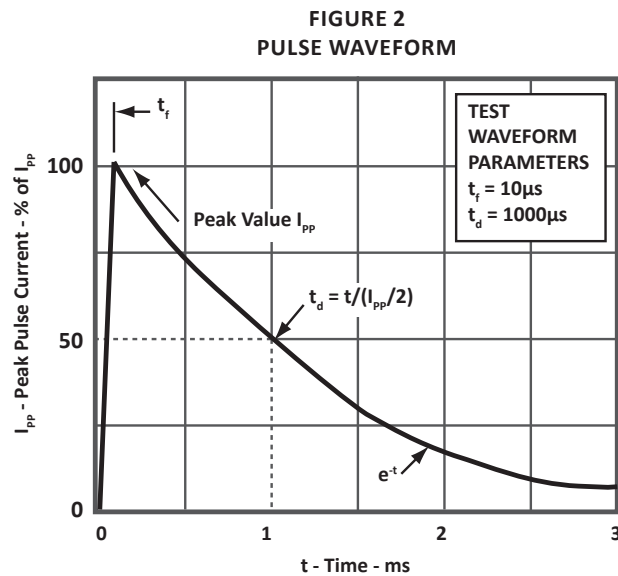
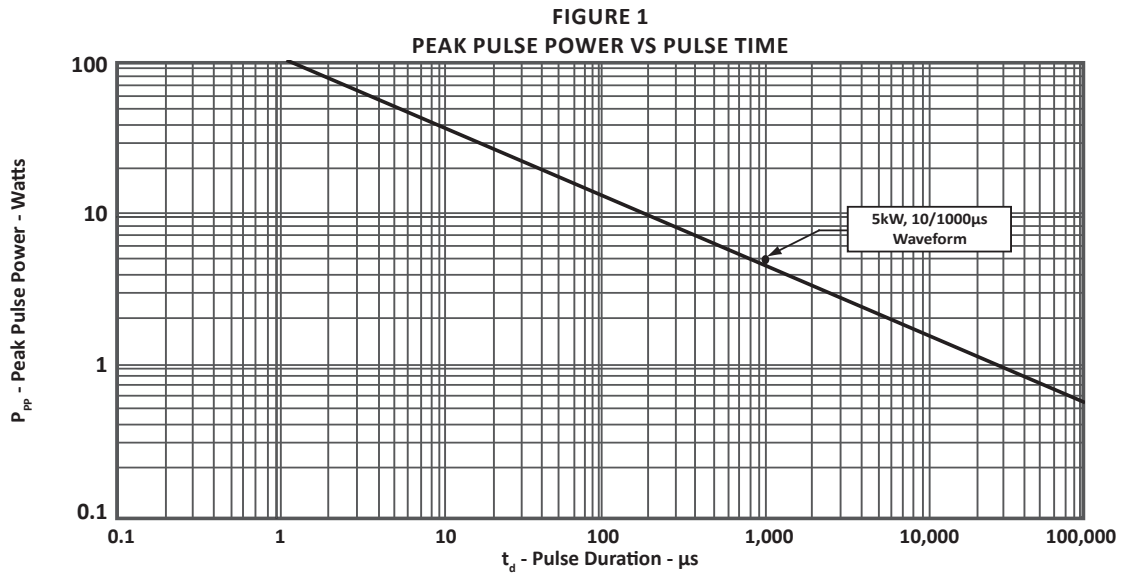
## RTCA DO-160G COMPLIANT PRODUCT

## MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp = 10/1000μs) - See Figure 1	P <sub>PP</sub>	5,000	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	MARKING CODE	RATED STAND-OFF VOLTAGE  V <sub>WM</sub> VOLTS	MINIMUM 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>
			MIN V <sub>(BR)</sub> VOLTS	@I <sub>T</sub> mA		
SM5KW10A	5U10	10	11.1	5	15	17.0V @ 296.0A
SM5KW33A	5U33	33	36.8	5	8	53.3V @ 94.0A
SM5KW36A	5U36	36	40.2	5	8	58.1V @ 86.0A
SM5KW10CA	5B10	10	11.1	5	15	17.0V @ 296.0A
SM5KW33CA	5B33	33	36.8	5	8	53.3V @ 94.0A
SM5KW36CA	5B36	36	40.2	5	8	58.1V @ 86.0A



## DFN-2-5KW PACKAGE INFORMATION

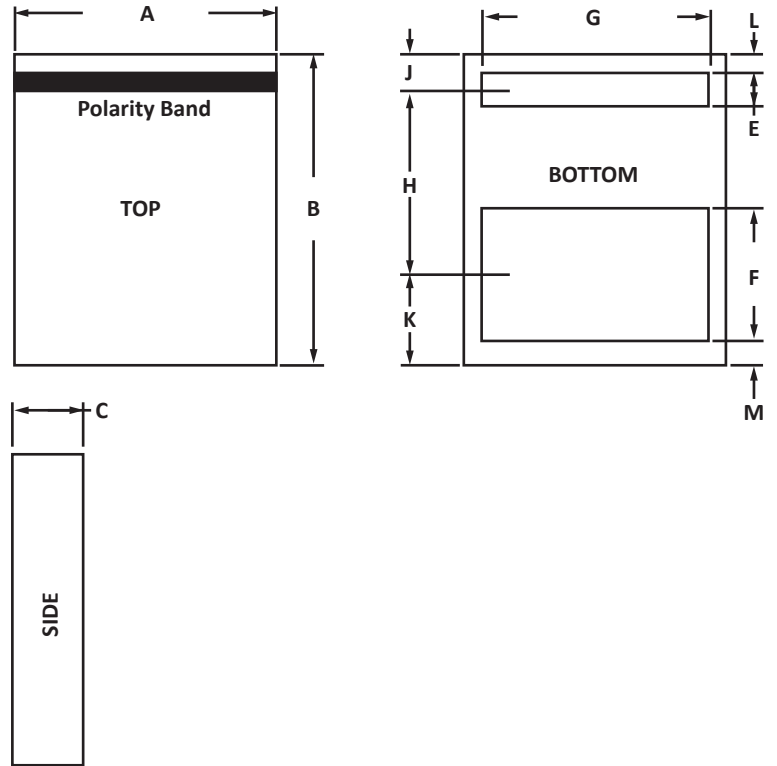
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## OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	6.53	6.68	0.257	0.263
B	7.54	7.70	0.297	0.303
C	1.32	1.48	0.052	0.058
E	0.69	0.84	0.027	0.033
F	3.05	3.30	0.120	0.130
G	5.08	5.33	0.200	0.210
H	4.70	4.88	0.185	0.192
J	0.72	0.80	0.028	0.032
K	2.00	2.10	0.079	0.083
L	0.33	0.43	0.013	0.017
M	0.45	0.55	0.018	0.022

## NOTES

1. Dimensioning and tolerances per ANSI Y14.M, 1985.
2. Controlling dimension: millimeters.
3. Dimensions are exclusive of mold flash and metal burrs.
4. Polarity band, unidirectional device only.

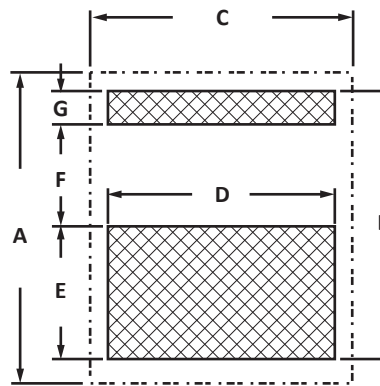


## PAD LAYOUT

DIM	MILLIMETERS	INCHES
	NOMINAL	NOMINAL
A	7.62	0.300
B	6.99	0.275
C	6.60	0.260
D	5.33	0.210
E	3.35	0.132
F	2.62	0.103
G	1.02	0.040

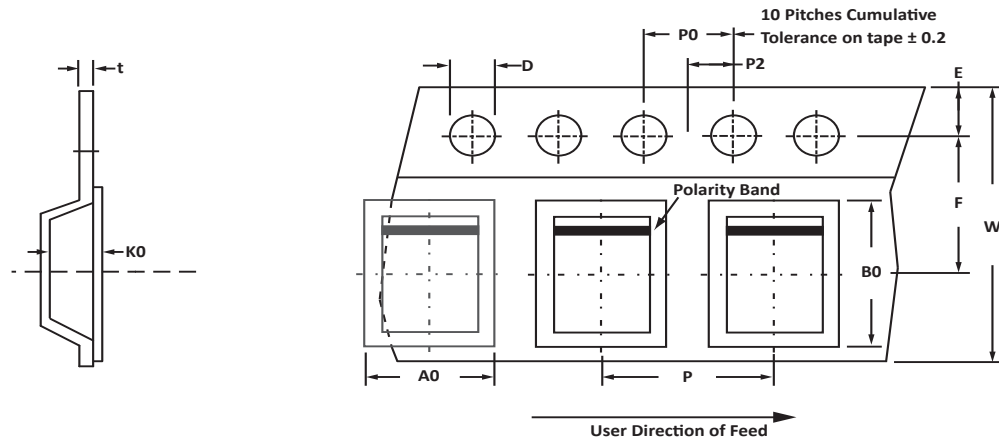
## NOTES

1. Controlling dimension: millimeters.



## TAPE AND REEL

## RTCA DO-160G COMPLIANT PRODUCT



## SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	t <sub>max</sub>
330mm (13")	16mm	6.98 ± 0.10	8.00 ± 0.10	1.66 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	16.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.05	8.00 ± 0.10	0.25

## NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T13 = 13" Reel - 2,500 pieces per 16mm tape.
- Marking on Part - marking code (see page 2), date code, logo and polarity band (Unidirectional only).

## ORDERING INFORMATION

BASE PART NUMBER (XX=VOLTAGE)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
SM5KWxxA/CA	n/a	-T13	2,500	13"	n/a

This device is only available in a Lead-Free configuration.

**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.

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