

DESCRIPTION

The SM15KWExxA/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-KW surface mount package configuration provides a lower profile at a reduce cost.

These devices provide 15 kilowatts of peak pulse power dissipation for an 10/1000 μ 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 ± 15 kV, Contact ± 8 kV
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 60kW, 8/20 μ s
- 15 kilowatts Peak Pulse Power per Line (tp = 10/1000 μ s)
- Unidirectional & Bidirectional Configurations
- Easy Mounting to Printed Circuit Board
- RoHS Compliant
- REACH Compliant

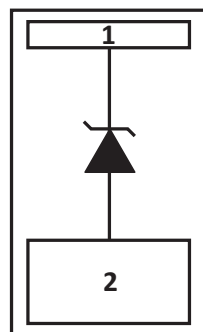
APPLICATIONS

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

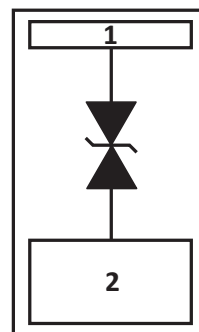
MECHANICAL CHARACTERISTICS

- Molded DFN-2-KW
- Approximate Weight: 2.5 grams
- Lead-Free Silver Plating
- Solder Reflow Temperature: 260-270°C, 10 seconds
- Flammability Rating UL 94V-0

PIN CONFIGURATIONS



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}	15	kilowatts
Storage Temperature	T_{STG}	-55 to +150	°C
Operating Temperature	T_J	-55 to +150	°C

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER	MARKING CODE		RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE		MAXIMUM LEAKAGE CURRENT I_D @ V_{WM} μA	MAXIMUM CLAMPING VOLTAGE (Fig. 2) V_C @ I_{PP}
	UNI	BI		MIN $V_{(BR)}$ VOLTS	@ I_T mA		
SM15KWE24A	24A	24C	24.0	26.7	5	15	38.9V @ 384A
SM15KWE30A	30A	30C	30.0	33.3	5	15	50.7V @ 296A
SM15KWE48A	48A	48C	48.0	53.3	5	10	77.7V @ 193A
SM15KWE70A	70A	70C	70.0	77.8	5	10	114.0V @ 132.0A

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

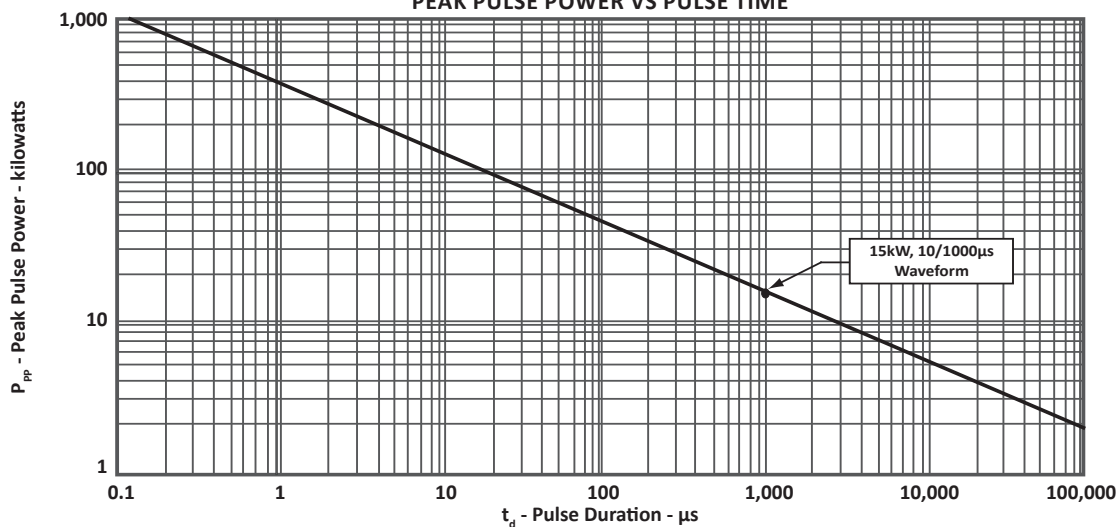


FIGURE 2
PULSE WAVEFORM

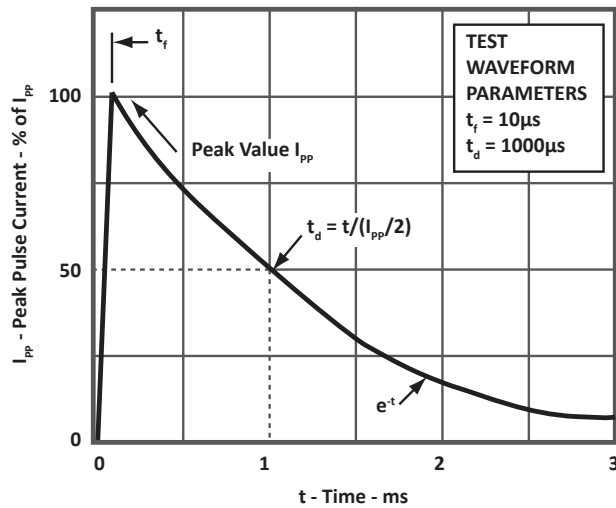
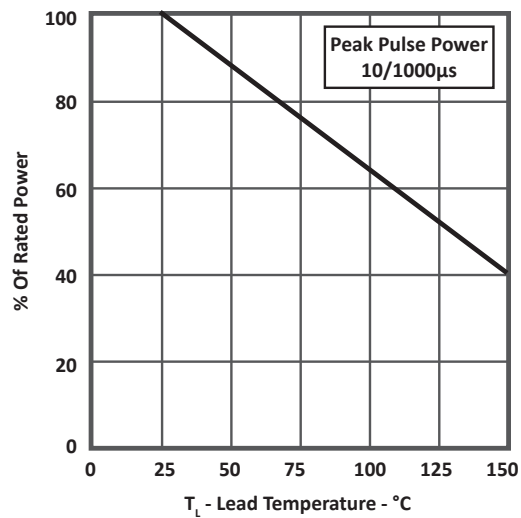


FIGURE 3
POWER DERATING CURVE



PACKAGE INFORMATION

RTCA DO-160G COMPLIANT PRODUCT

OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	10.95	11.15	0.431	0.439
B	9.04	9.24	0.356	0.364
C	1.23	1.31	0.047	0.053
D	6.05	6.15	0.238	0.242
E	0.97	1.07	0.038	0.042
F	3.61	3.81	0.142	0.150
G	4.62	4.72	0.185	0.189
H	0.83	1.03	0.033	0.041
J	8.03	8.23	0.316	0.324
K	0.46	0.56	0.018	0.022
L	4.46	4.66	0.174	0.184
M	4.01	4.21	0.158	0.166
N	0.60	0.70	0.024	0.028
P	0.20	0.30	0.008	0.012

NOTES

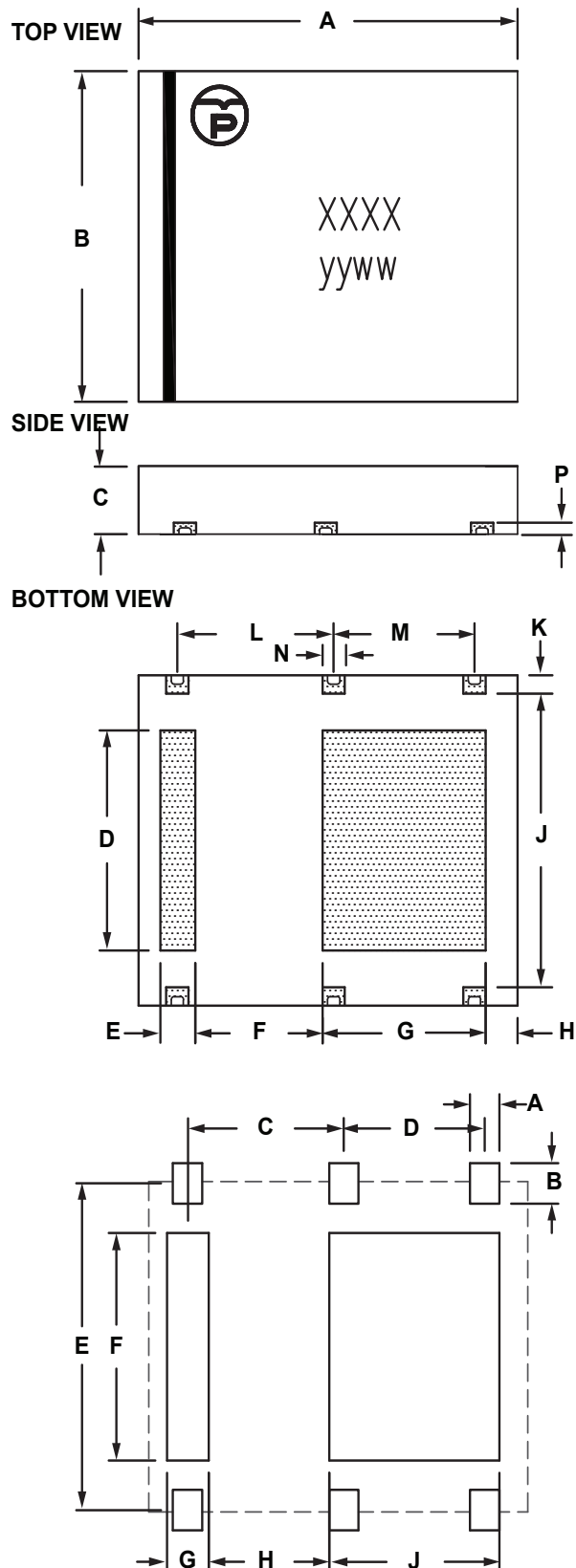
1. Dimensions are exclusive of mold flash and metal burrs.

PCB PAD LAYOUT DIMENSIONS

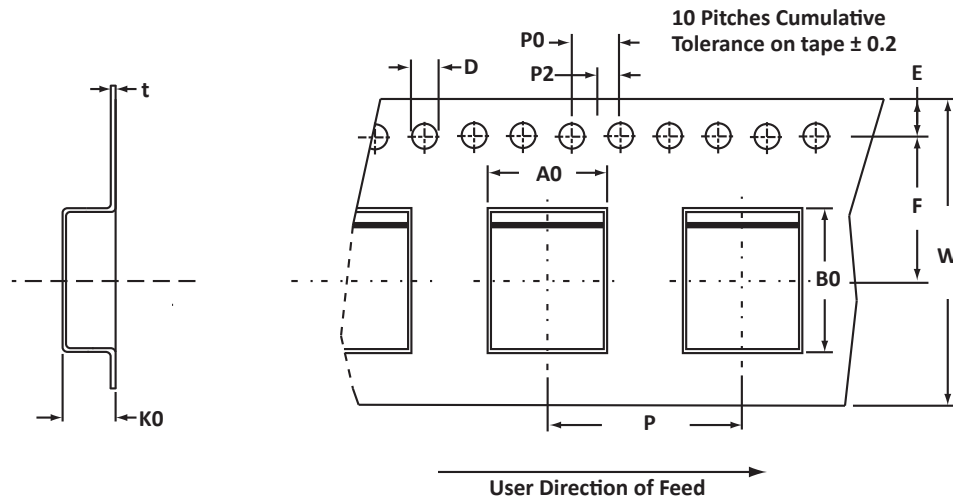
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.80	0.95	0.032	0.038
B	1.07	1.22	0.042	0.048
C	4.54		0.179	
D	4.11		0.162	
E	9.04		0.356	
F	6.25	6.40	0.250	0.252
G	1.17	1.32	0.046	0.052
H	3.46	3.61	0.136	0.143
J	4.91	5.06	0.193	0.199

NOTES

1. Suggested solder print uses some dimensions as PCB pad layout.



TAPE AND REEL



SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
330mm (13")	24mm	9.40 ± 0.10	11.60 ± 0.10	1.80 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	11.5 ± 0.10	24.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.10	16.00 ± 0.10	0.30

NOTES

1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T13 = 13" Reel - 1,500 or -T7 = 7" Reel - 400 pieces per 16mm tape.
4. Marking on Part - marking code (see page 2), date code, logo and polarity band.

ORDERING INFORMATION

BASE PART NUMBER (xx = Voltage)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
SM15KWExxA/CA	n/a	-T7	400	7"	n/a
SM15KWExxA/CA	n/a	-T13	1,500	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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