



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 ($t_p = 10/1000\mu$ s)
- Unidirectional & Bidirectional Configurations
- Easy Mounting to Printed Circuit Board
- RoHS Compliant
- REACH Compliant

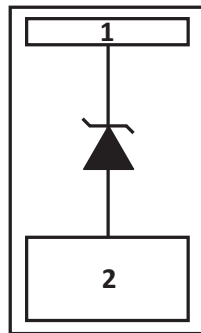
APPLICATIONS

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

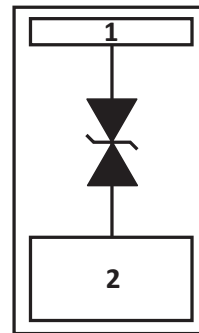
MECHANICAL CHARACTERISTICS

- Molded Surface Mount Package
- Approximate Weight: 2.5 grams
- Lead-Free Pure-Tin Plating
- Solder Reflow Temperature:
Pure-Tin - Sn, 100: 260-270°C
- 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 (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}
	UNI	BI		MIN V _(BR) VOLTS	@I _T mA		
SM15KWE15A	15A	15C	15.0	16.9	5	10	24.4V @ 618A
SM15KWE20A	20A	20C	20.0	22.2	5	10	34.3V @ 437A
SM15KWE24A	24A	24C	24.0	26.7	5	10	38.9V @ 384A
SM15KWE28A	28A	28C	28.0	31.1	5	10	47.5V @ 316A
SM15KWE30A	30A	30C	30.0	33.3	5	10	50.7V @ 296A
SM15KWE33A	33A	33C	33.0	38.6	5	5	54.8V @ 274A
SM15KWE36A	36A	36C	36.0	40.0	5	5	59.7V @ 251A
SM15KWE48A	48A	48C	48.0	53.3	5	5	77.7V @ 193A
SM15KWE54A	54A	54C	54.0	60.3	5	5	87.1V @ 172A
SM15KWE70A	70A	70C	70.0	77.8	5	5	114.0V @ 132A
SM15KWE75A	75A	75C	75.0	83.3	5	5	122.0V @ 123A
SM15KWE78A	78A	78C	78.0	87.0	5	5	126.0V @ 119A

NOTES

1. Part numbers shown are unidirectional devices. Add a "CA" suffix to specify bidirectional devices, such as SM15KWE30CA.

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

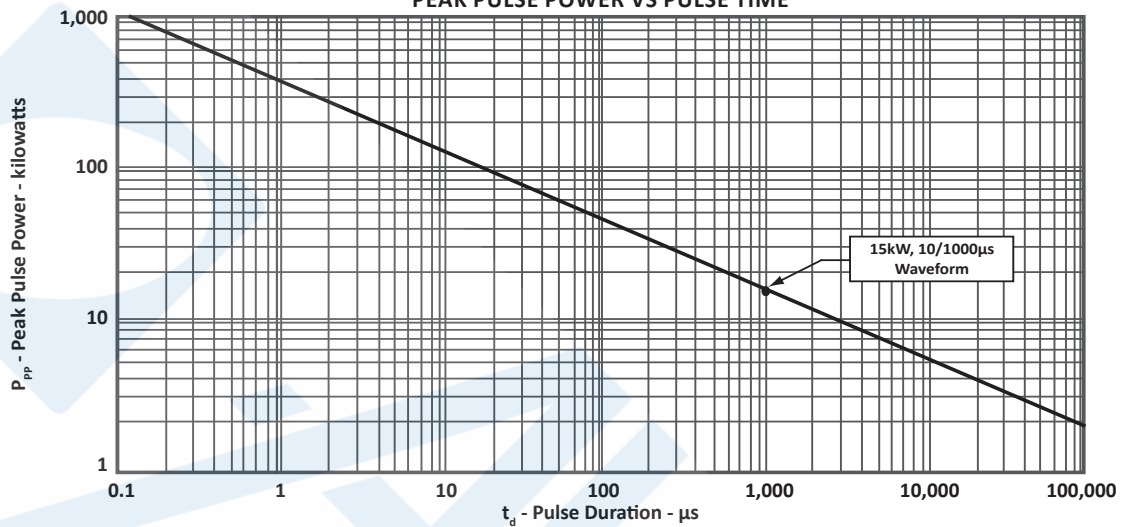
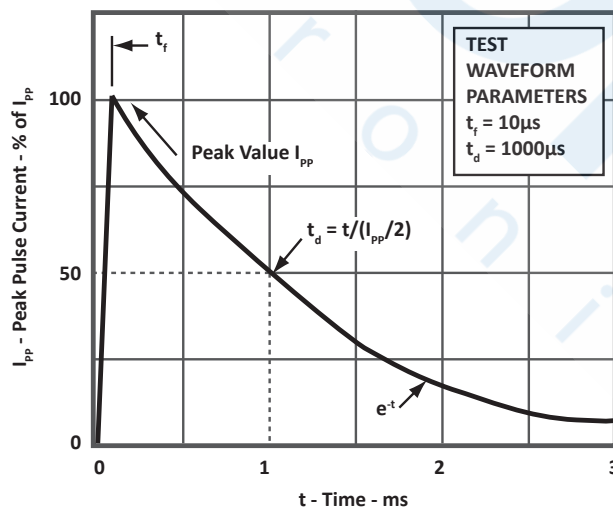
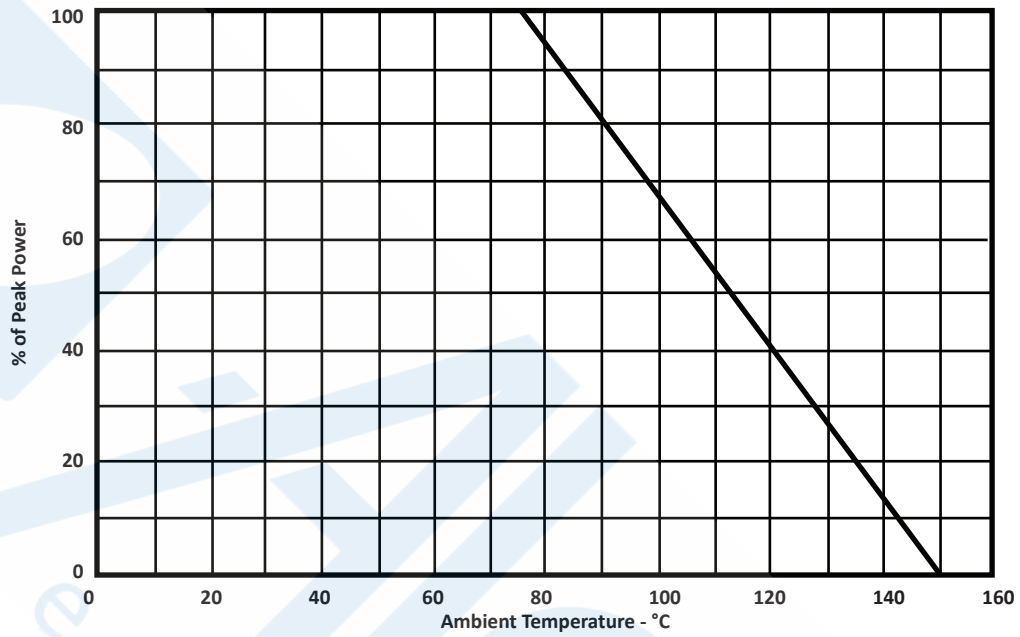


FIGURE 2
PULSE WAVEFORM



TYPICAL DEVICE CHARACTERISTICS

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	3.00	3.10	0.116	0.126
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

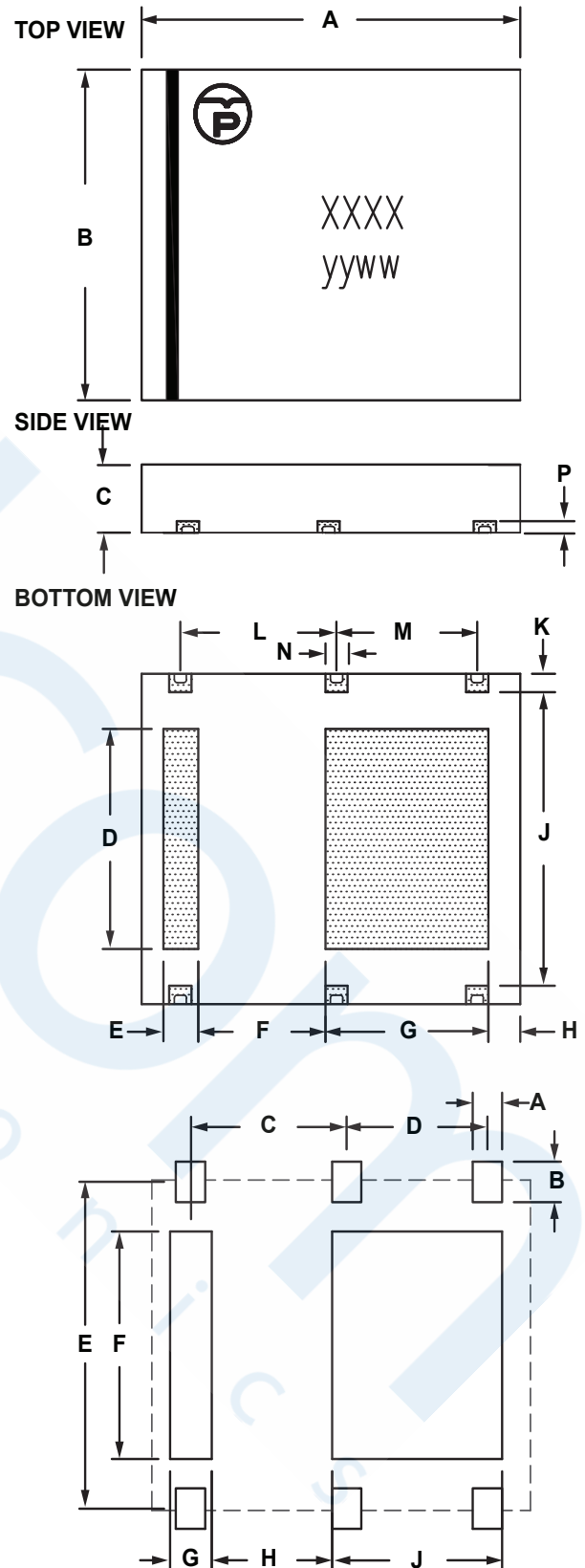
1. Dimensions are exclusive of mold flash and metal burrs.

PCB PAD LAYOUT DIMENSIONS

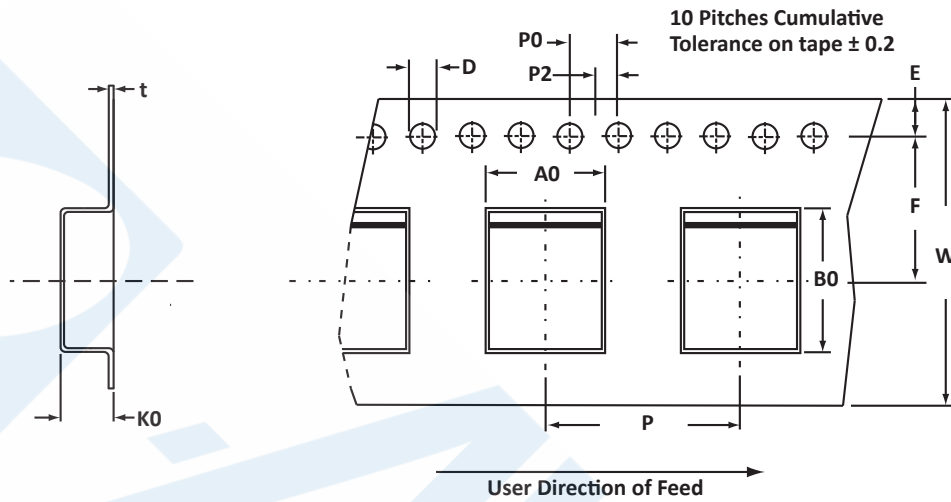
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.80	0.95	0.032	0.038
B	1.07	1.22	0.042	0.048
C	4.54		0.179	
D	4.11		0.162	
E	9.04		0.356	
F	6.25	6.40	0.250	0.252
G	1.17	1.32	0.046	0.052
H	3.46	3.61	0.136	0.143
J	4.91	5.06	0.193	0.199

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	3.175 ± 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

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- 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	-T13	1000	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 25 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. 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



Singel 3 | B-2550 Kontich | Belgium | Tel. +32 (0)3 458 30 33
info@alcom.be | www.alcom.be
 Rivium 1e straat 52 | 2909 LE Capelle aan den IJssel | The Netherlands
 Tel. +31 (0)10 288 25 00 | info@alcom.nl | www.alcom.nl

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