



DESCRIPTION

The SM36KWE_{xx}A/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 surface mount package configuration provides a lower profile compared to legacy axial lead package configurations.

These devices provide 36 kilowatts 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

- RTCA DO-160G COMPLIANT PRODUCT
- Waveforms (Pin Injection) 3 and 4 - Level 5; Waveform 5A - Level 4
- Low Clamping Voltage
- 36 kilowatts Peak Pulse Power per Line ($t_p = 10/1000\mu s$)
- Unidirectional & Bidirectional Configurations
- Easy Mounting to Printed Circuit Board
- Available in Multiple Voltages
- RoHS Compliant

APPLICATIONS

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

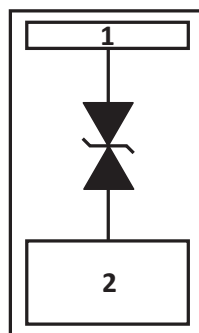
MECHANICAL CHARACTERISTICS

- Molded Surface Mount Package
- Approximate Weight: 1.2 grams
- Lead-Free 100%Tin Plating
- Solder Reflow Temperature: 260-270°C, 10 seconds
- Flammability Rating UL 94V-0

CIRCUIT DIAGRAMS



UNIDIRECTIONAL



BIDIRECTIONAL

TYPICAL DEVICE CHARACTERISTICS

RTCA DO-160G COMPLIANT PRODUCT

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

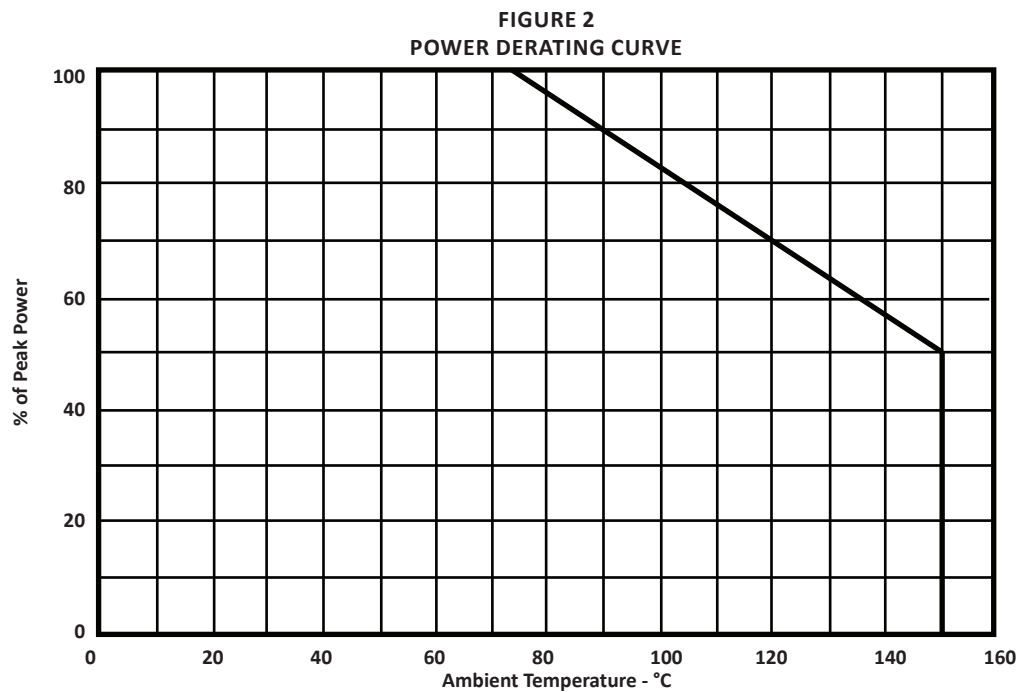
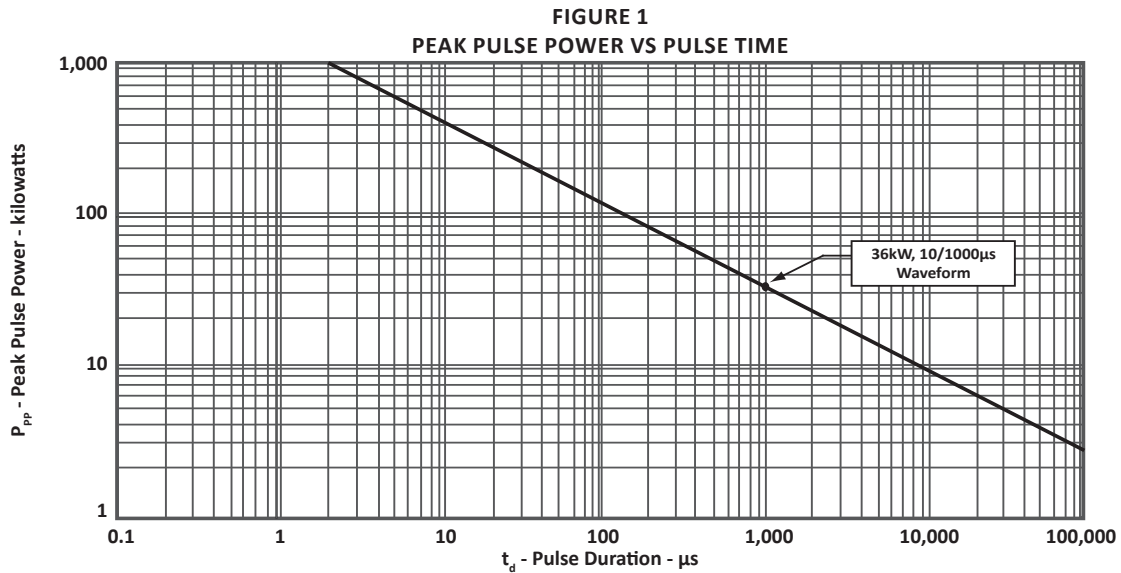
PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp = 10/1000μs) - See Figure 1	P _{PP}	36	kilowatts
Forward Surge Rating (Unidirectional Only)	I _F	200	Amps
Steady Power Dissipation	P _P	1.0	Amps
Storage Temperature	T _{STG}	-55 to +150	°C
Operating Temperature	T _J	-55 to +150	°C

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 @V _{WM} I _D μA	MAXIMUM CLAMPING VOLTAGE @ 10/1000μs V _C @ I _{PP}
	UNI	BI		MIN V _(BR) VOLTS	@I _T mA		
SM36KWE16A	36U16	36B16	16.0	17.8	5	100	29.0V @ 1241A
SM36KWE20A	36U20	36B20	20.0	22.1	5	15	37.3V @ 965A
SM36KWE24A	36U24	36B24	24.0	26.7	5	15	43.7V @ 824A
SM36KWE28A	36U28	36B28	28.0	31.1	5	15	50.5V @ 713A
SM36KWE30A	36U30	36B30	30.0	33.3	5	10	53.7V @ 670A
SM36KWE33A	36U33	36B33	33.0	36.7	5	10	57.8V @ 623A
SM36KWE36A	36U36	36B36	36.0	40.0	5	10	62.7V @ 574A
SM36KWE40A	36U40	36B40	40.0	44.3	5	10	69.0V @ 522A
SM36KWE43A	36U43	36B43	43.0	48.5	5	10	74.0V @ 486A
SM36KWE48A	36U48	36B48	48.0	53.3	5	10	76.2V @ 472A

NOTES

- Part numbers shown are unidirectional devices. Add a "CA" suffix to specify bidirectional devices, such as SM36KWE20CA.



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	2.95	3.15	0.116	0.124
D	7.06	7.16	0.278	0.282
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

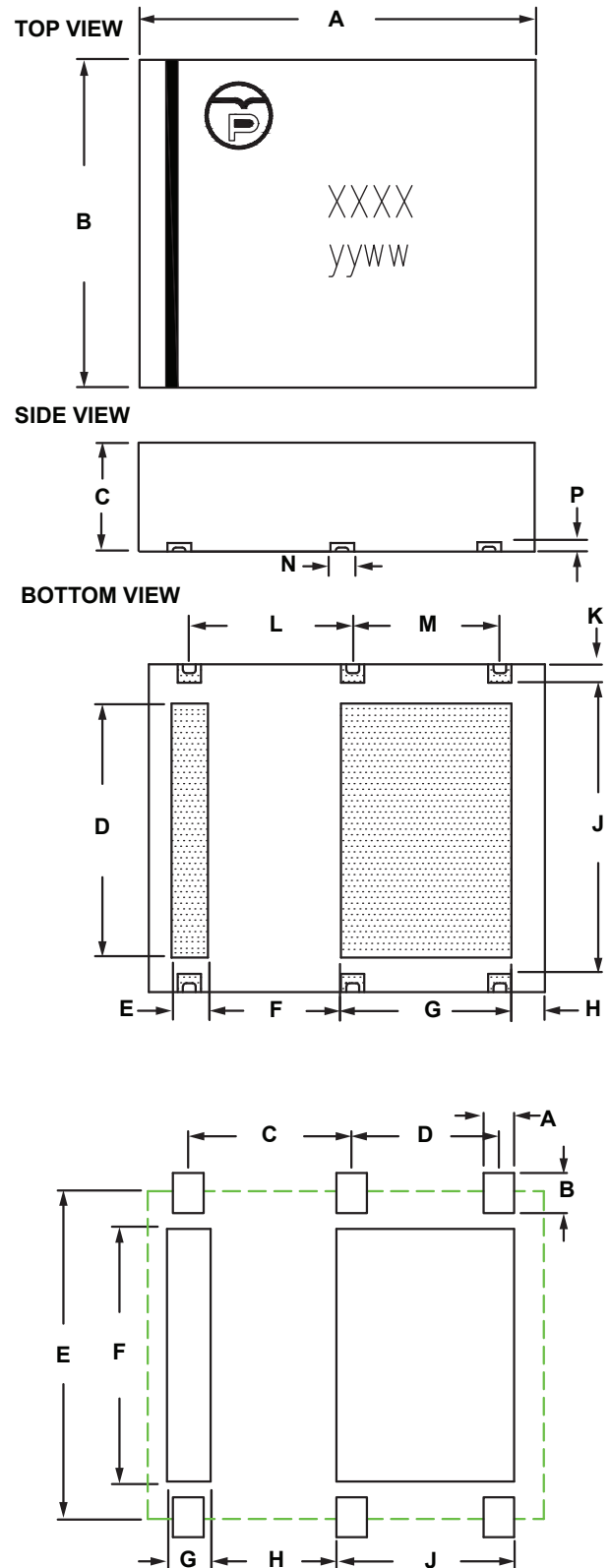
1. Dimensions are exclusive of mold flash and metal burrs.
2. Polarity band for unidirectional parts only.

PCB PAD LAYOUT DIMENSIONS

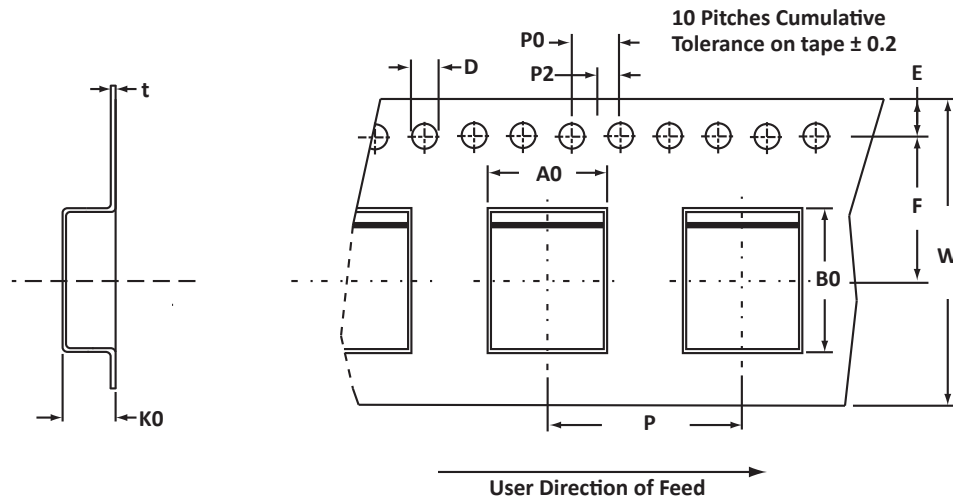
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.80	0.95	0.032	0.038
B	1.07	1.22	0.042	0.048
C	4.54		0.179	
D	4.11		0.162	
E	9.04		0.356	
F	7.26	7.36	0.286	0.290
G	1.17	1.32	0.046	0.052
H	3.46	3.61	0.136	0.143
J	4.91	5.06	0.195	0.199

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 (Unidirectional only).

ORDERING INFORMATION

BASE PART NUMBER (xx = Voltage)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
SM36KWExxA/CA	n/a	-T13	1000	13"	n/a
SM36KWExxA/CA	n/a	-T71	100	7"	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 30 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection that include Transient Voltage Suppressor (TVS) Arrays, Steering Diode Array Hybrids, High-power Components and Modules, as well as Steering Diodes, EMI Filter/TVS Arrays and Thyristor Surge Suppressors. These components deliver circuit protection in electronic systems from numerous overvoltage events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices is an ISO 9001 certified company.

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