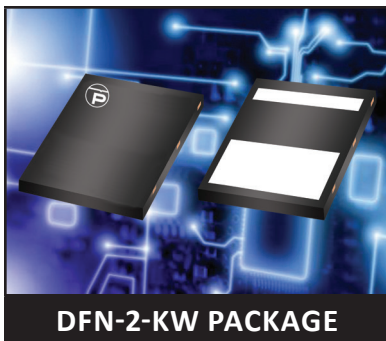


10 KILOWATT TVS COMPONENTS
RTCA DO-160G COMPLIANT PRODUCT

DFN-2-KW PACKAGE
DESCRIPTION

The SM10KWExxA/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 10 kilowatts of peak pulse power dissipation for an 10/1000 μ s waveform. Applications include relay drive protection module and secondary lightning protection.

FEATURES

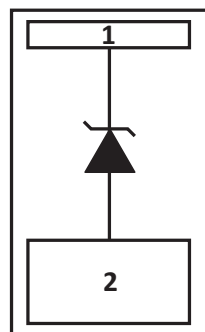
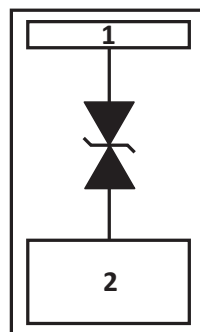
- RTCA DO-160G COMPLIANT PRODUCT
- Compatible with IEC 61000-4-2 (ESD): Air ± 15 kV, Contact ± 8 kV
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 60kW, 8/20 μ s
- 10 kilowatts Peak Pulse Power per Line ($t_p = 10/1000\mu$ s)
- Unidirectional & Bidirectional 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 DFN-2-KW
- 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

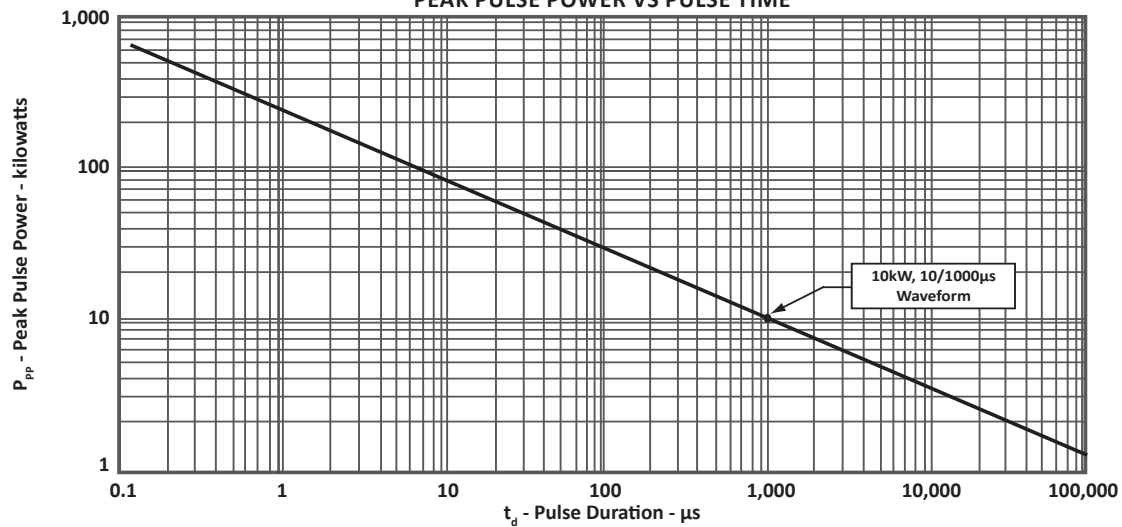
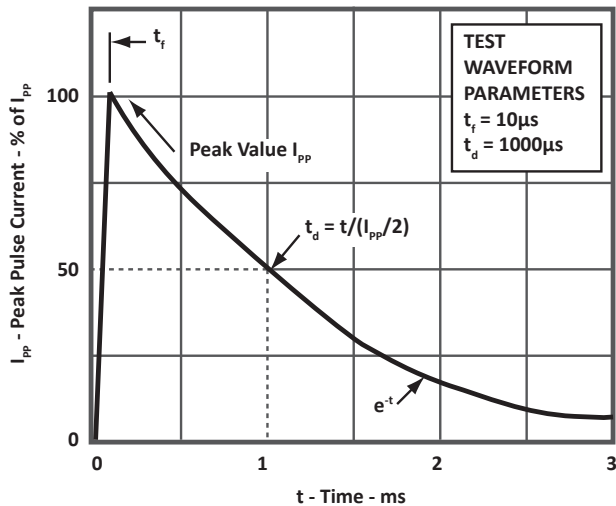
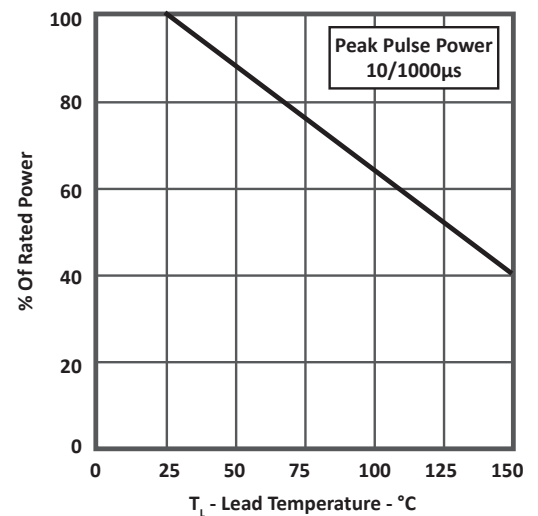
| PARAMETER | SYMBOL | VALUE | UNITS |
|--|------------------|-------------|-----------|
| Peak Pulse Power (tp = 10/1000μs) - See Figure 1 | P _{PP} | 10 | kilowatts |
| Storage Temperature | T _{STG} | -55 to +150 | °C |
| Operating Temperature | T _J | -55 to +150 | °C |

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 @ V _{WM} I _D μA | MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ 10/1000μs V _C @ I _{PP} |
|-------------|--------------|---|-----------------------------------|------------------------|--|--|
| | | | MIN V _(BR) VOLTS | @ I _T mA | | |
| SM10KWE10A | E0U10 | 10 | 11.1 | 5 | 15 | 17.0V @ 588A |
| SM10KWE12A | E0U12 | 12 | 13.4 | 5 | 8 | 19.9V @ 502A |
| SM10KWE22A | E0U22 | 22 | 24.4 | 5 | 8 | 36.5V @ 282A |
| SM10KWE24A | E0U24 | 24 | 26.8 | 5 | 8 | 38.9V @ 258A |
| SM10KWE28A | E0U28 | 28 | 31.2 | 5 | 8 | 45.4V @ 220A |
| SM10KWE30A | E0U30 | 30 | 33.5 | 5 | 8 | 48.4V @ 206A |
| SM10KWE33A | E0U33 | 33 | 36.8 | 5 | 8 | 53.3V @ 187A |
| SM10KWE36A | E0U36 | 36 | 40.0 | 5 | 8 | 58.1V @ 172A |
| SM10KWE12CA | E0B12 | 12 | 13.4 | 5 | 8 | 19.9V @ 502A |
| SM10KWE22CA | E0B22 | 22 | 24.4 | 5 | 8 | 36.5V @ 282A |
| SM10KWE48CA | E0B48 | 48 | 53.0 | 5 | 8 | 77.4V @ 129A |

TYPICAL DEVICE CHARACTERISTICS

RTCA DO-160G COMPLIANT PRODUCT

 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

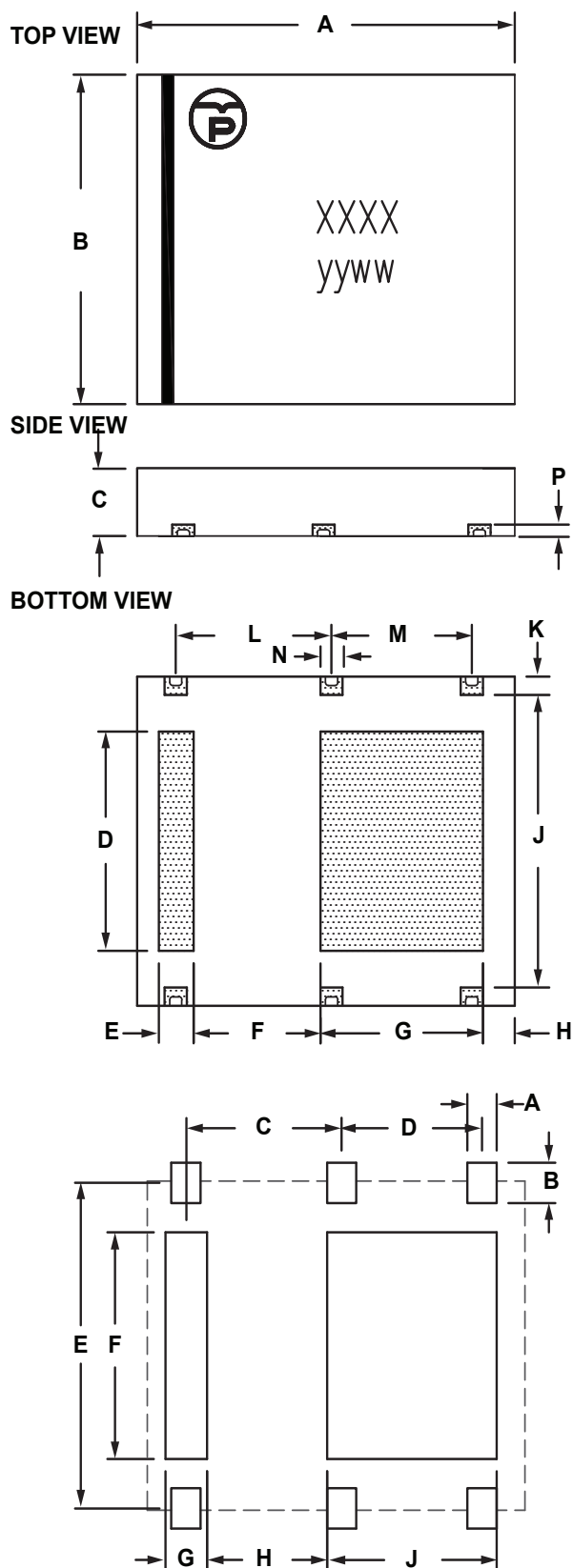
1. Dimensions are exclusive of mold flash and metal burrs.

PCB PAD LAYOUT DIMENSIONS

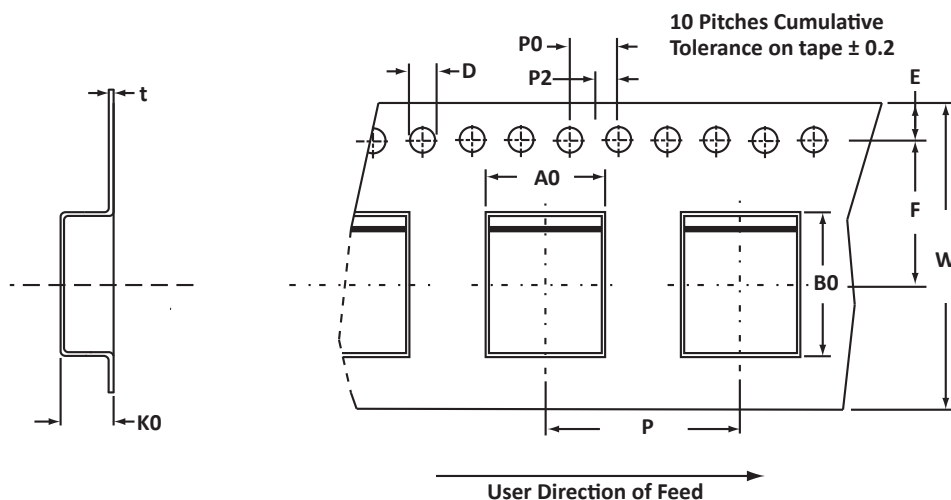
| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.80 | 0.95 | 0.032 | 0.038 |
| B | 1.07 | 1.22 | 0.042 | 0.048 |
| C | 4.54 | | 0.179 | |
| D | 4.11 | | 0.162 | |
| E | 9.04 | | 0.356 | |
| F | 6.25 | 6.40 | 0.250 | 0.252 |
| G | 1.17 | 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 - 800 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 |
|------------------------------------|-----------------|-------------|----------|-----------|----------|
| SM10KWExxA/CA | n/a | -T13 | 800 | 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 ISO 9001:2015 certified.

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