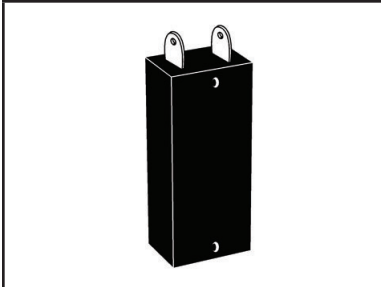
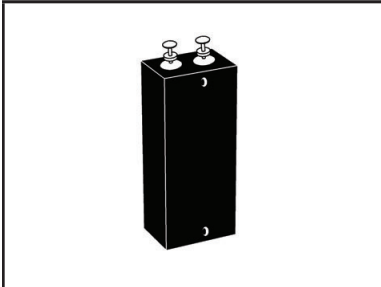


## HIGH POWER AIRCRAFT/ VEHICLE DC BUS VOLTAGE SUPPRESSOR

### RTCA DO-160G COMPLIANT PRODUCT



**704 PACKAGE**



**704T PACKAGE**

### DESCRIPTION

The 704-15K36 and 704-15K36T are 15 kilowatt silicon transient voltage suppressors (TVS) designed for use primarily in 28 Volt aircraft applications in accordance with MIL-STD-704 and MIL-STD-19500. These assemblies typically operate with a minimum source impedance of 0.25 Ohms.

These devices have a peak pulse power rating of 15,000 Watts for a 1 ms waveshape and therefore can be used in applications where induced lightning on rural or remote transmission lines present a hazard to electronic circuitry. The 704-15K36 is designed for high current short peak pulse transient applications, where as the 704-15K36T is designed for extended peak pulse transients greater than 1 millisecond.

This series can be screened upon request for military requirements in accordance with MIL-PRF-19500 (applicable tests).

### FEATURES

- RTCA DO-160G COMPLIANT PRODUCT
- Meets MIL-STD-704
- 15 kilowatts Peak Pulse Power per Line ( $t_p = 10/1000\mu s$ )
- Each Device 100% Tested
- 28 Volt Power Supply Protection

### MECHANICAL CHARACTERISTICS

- Molded Plastic Case
- 704-15K36 Approximate Weight: 38 grams
- 704-15K36T Approximate Weight: 65 grams
- Flammability Rating UL 94V-0
- Military Screening Available Upon Request for IAW MIL-PRF-19500
- Standard Screening Available Upon Request:
  - H1 - Submodule Screening (Test Plans 05231 & 05232)
  - H2 - Submodule & Module Screening (Test Plan 05233)
  - H3 - Submodule & Module Screening with Group B & C Lot Testing (Test Plans 05234 & 05235)

### APPLICATIONS

- DC Power Supply Protection
- MIL-STD-704 Power Bus Protection

## TYPICAL DEVICE CHARACTERISTICS

## RTCA DO-160G COMPLIANT PRODUCT

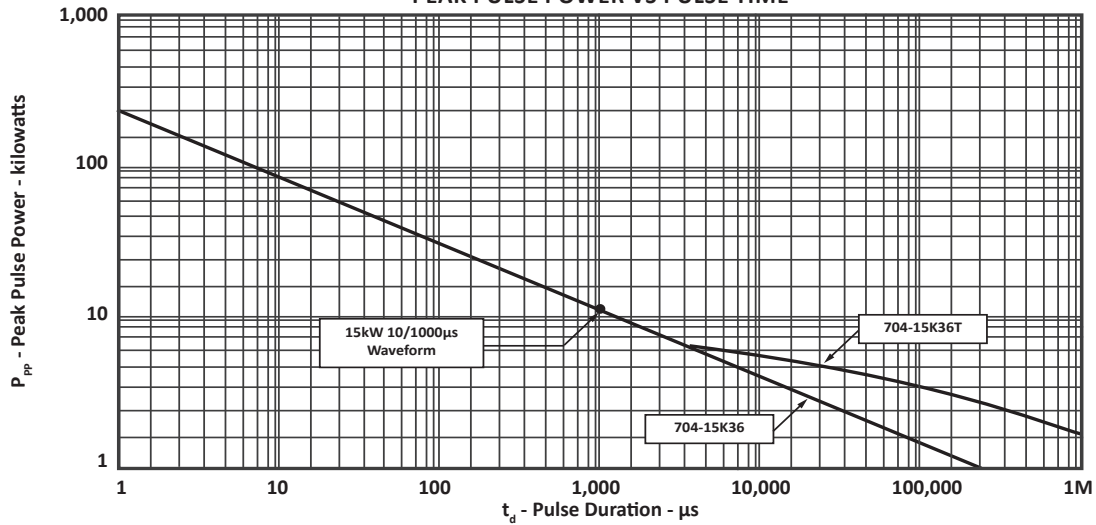
## MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

| PARAMETER                                      | SYMBOL    | VALUE      | UNITS     |
|--|-----------|------------|-----------|
| Peak Pulse Power (tp = 10/1000) - See Figure 1 | $P_{PP}$  | 15         | kilowatts |
| Operating Temperature                          | $T_L$     | -55 to 150 | °C        |
| Storage Temperature                            | $T_{STG}$ | -55 to 150 | °C        |
| Steady State Power Dissipation @ 50°C          | $T_A$     | 10.0       | Watts     |
| Forward Surge Rating @ 25°C 1/120 seconds      | FI        | 300        | Amps      |

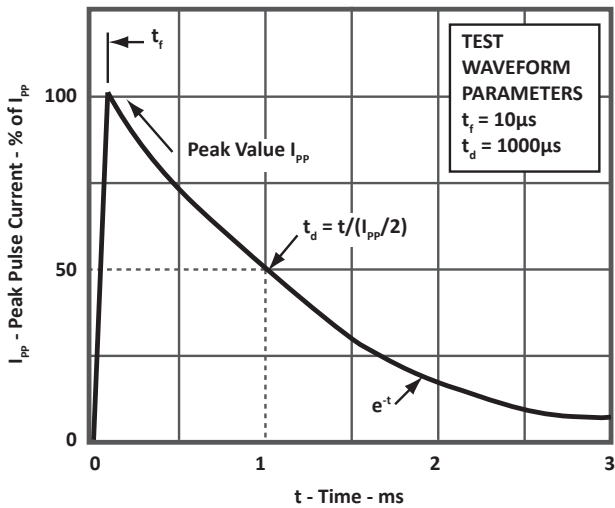
## ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

| PART NUMBER | RATED STAND-OFF VOLTAGE<br>$V_{WM}$<br>VOLTS | MINIMUM BREAKDOWN VOLTAGE<br>@10mA<br>$V_{(BR)}$<br>VOLTS | MAXIMUM CLAMPING VOLTAGE (Fig. 2)<br>@ $I_{PPM}$<br>$V_C$<br>VOLTS | MAXIMUM LEAKAGE CURRENT<br>@ $V_{WM}$<br>$I_D$<br>$\mu A$ | MAXIMUM PEAK PULSE CURRENT (Fig. 2)<br>$I_{PPM}$<br>AMPS | MAXIMUM FORWARD VOLTAGE<br>@100A, 8.3ms<br>$V_F$<br>VOLTS DC |
|-------------|--|---|--|---|--|--|
| 704-15K36   | 31.5   | 36  | 53   | 100   | 300  | 3.0  |
| 704-15K36T  | 31.5   | 36  | 53   | 500   | 300  | 15.0   |

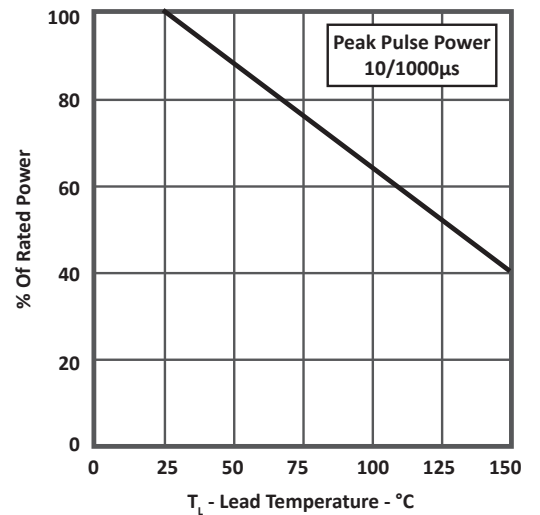
**FIGURE 1**  
**PEAK PULSE POWER VS PULSE TIME**



**FIGURE 2**  
**PULSE WAVEFORM**



**FIGURE 3**  
**POWER DERATING CURVE**



## PACKAGE INFORMATION

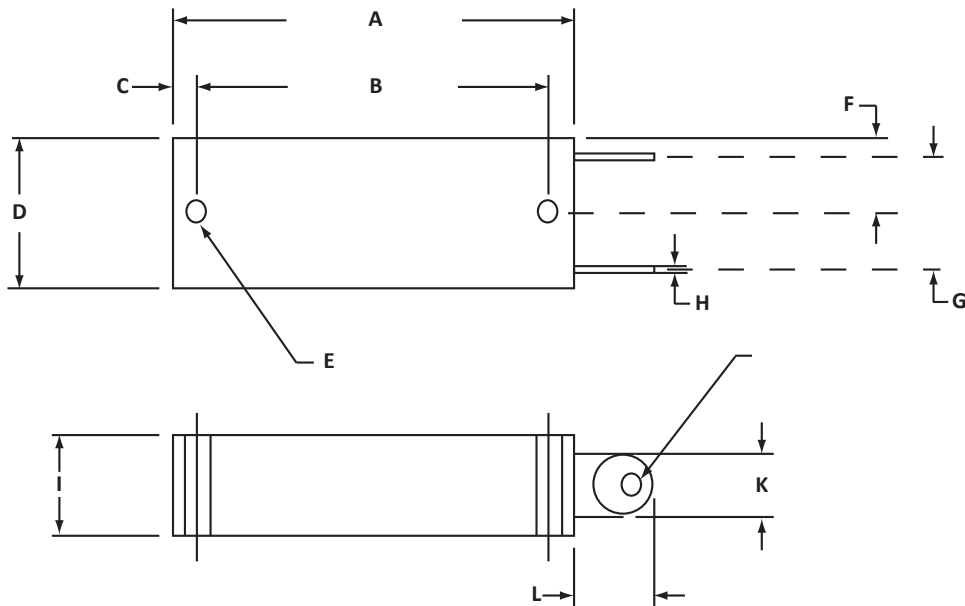
## RTCA DO-160G COMPLIANT PRODUCT

## 704 OUTLINE DIMENSIONS

| DIM | MILLIMETERS |       | INCHES    |       |
|-----|-------------|-------|-----------|-------|
|     | MIN         | MAX   | MIN       | MAX   |
| A   | 49.28       | 51.56 | 1.97      | 2.03  |
| B   | 43.92       | 44.96 | 1.73      | 1.77  |
| C   | 2.79        | 3.56  | 0.11      | 0.14  |
| D   | 18.29       | 19.81 | 0.72      | 0.78  |
| E   | 3.18 DIA    |       | 0.125 DIA |       |
| F   | 8.76        | 10.29 | 0.345     | 0.405 |
| G   | 13.51       | 15.04 | 0.532     | 0.592 |
| H   | 0.66        | 0.71  | 0.026     | 0.028 |
| I   | 11.94       | 13.46 | 0.47      | 0.53  |
| J   | 2.41        | 2.92  | 0.095     | 0.115 |
| K   | 7.70        | 8.20  | 0.303     | 0.323 |
| L   | 9.40        | 10.92 | 0.37      | 0.43  |

## NOTES

- Dimension "E" is nominal.



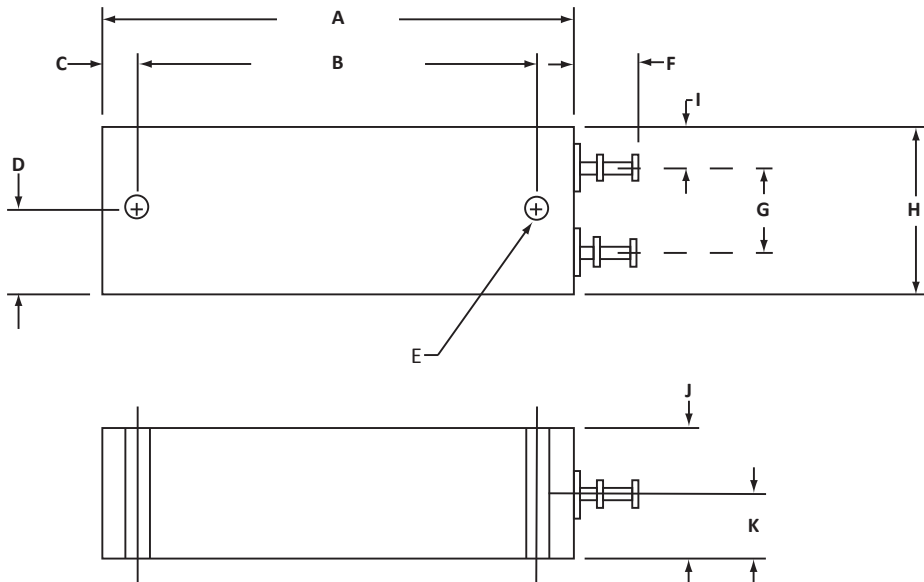
## PACKAGE INFORMATION

## RTCA DO-160G COMPLIANT PRODUCT

## 704T OUTLINE DIMENSIONS

| DIM | MILLIMETERS |       | INCHES    |       |
|-----|-------------|-------|-----------|-------|
|     | MIN         | MAX   | MIN       | MAX   |
| A   | 62.74       | 64.26 | 2.47      | 2.53  |
| B   | 53.34       | 54.48 | 2.10      | 2.145 |
| C   | 4.32        | 5.33  | 0.17      | 0.21  |
| D   | 10.54       | 12.07 | 0.415     | 0.475 |
| E   | 3.18 DIA    |       | 0.125 DIA |       |
| F   | 8.26        | 9.27  | 0.325     | 0.365 |
| G   | 11.43       |       | 0.45      |       |
| H   | 21.84       | 23.37 | 0.86      | 0.92  |
| I   | 5.59        |       | 0.22      |       |
| J   | 16.51       | 17.53 | 0.65      | 0.69  |
| K   | 8.51        |       | 0.335     |       |

**NOTES**  
1. Dimensions "E", "G", "I" and "K" are nominal.



## ORDERING INFORMATION

| BASE PART NUMBER | SUBMODULE SCREENING | SUBMODULE & MODULE SCREENING | SUBMODULE, MODULE, GROUP B & C LOT TESTING |
|------------------|---------------------|------------------------------|--|
| 704-15K36        | H1                  | H2                           | H3   |
| 704-15K36T       | H1                  | H2                           | H2   |

## NOTES

1. Marking on Part - logo, date code, polarity dot (for positive terminal) and part number.

**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.

**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](mailto:asiasales@protekdevices.com)  
Europe Sales: [europesales@protekdevices.com](mailto:europesales@protekdevices.com)  
U.S. Sales: [ussales@protekdevices.com](mailto:ussales@protekdevices.com)  
Distributor Sales: [distysales@protekdevices.com](mailto:distysales@protekdevices.com)  
Customer Service: [service@protekdevices.com](mailto:service@protekdevices.com)  
Technical Support: [support@protekdevices.com](mailto: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](http://www.protekdevices.com)

COPYRIGHT © ProTek Devices 1998 - This literature is subject to all applicable copyright laws and is not for resale in any manner.

SPECIFICATIONS: ProTek reserves the right to change the electrical and or mechanical characteristics described herein without notice.

DESIGN CHANGES: ProTek reserves the right to discontinue product lines without notice and that the final judgement concerning selection and specifications is the buyer's and that in furnishing engineering and technical assistance. ProTek assumes no responsibility with respect to the selection or specifications of such products. ProTek makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ProTek assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability without limitation special, consequential or incidental damages.

LIFE SUPPORT POLICY: ProTek Devices products are not authorized for use in life support systems without written consent from the factory.