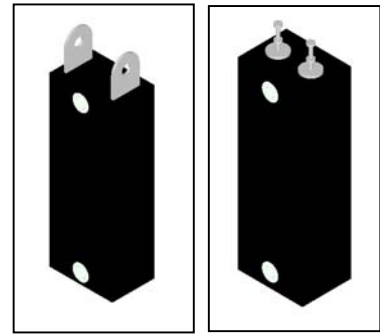


# **SENSITRON** **SEMICONDUCTOR**

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## TECHNICAL DATA DATA SHEET 561, REV. -

704-15K36  
704-15K36T



## Transient Voltage Suppressor, Unidirectional

704-15K36

704-15K36T

### FEATURES:

- ◆ Equivalent Industry Standard Part Numbers – 704-15K36 & 704-15K36T
- ◆ Designed For MIL-STD-704
- ◆ 28 Volt Power Supply Protection
- ◆ Can be supplied with JAN/JANTX parts

This series is primarily for use in avionics equipment. It meets all applicable environmental requirements of MIL-S-19500. These 15kW assemblies are designed typically to operate with a minimum source impedance of .25 Ohms for transients.

### MAXIMUM RATINGS

Rating	Condition	Minimum	Maximum	Units
Peak Pulse Power Dissipation	@ 25°, 1ms	-	15,000	Watts
Steady State Power Dissipation	-	-	10	Watts
$t_{clamping}$	0 Volts to $V_{(BR)}$	-	$< 1 \times 10^{-12}$	Seconds
Operating & Storage Temp.	-	-65	+ 150	°C
Forward Surge Current	1/120 sec. @ 25°C	-	300	Amps
Duty Cycle	-	-	0.01	%

### ELECTRICAL CHARACTERISTICS @ 25° (Test Both Polarities)

Part Number	Reverse Stand-Off Voltage (Note 1) $V_{WM}$ Volts	Maximum Reverse Leakage @ $V_{wm}$ $I_D$ $\mu A$	Minimum Breakdown Voltage @ 10 mA $V_{(BR)}$ Volts	Maximum Clamping Voltage @ $I_{PP}$ $V_c$ Volts	Maximum Peak Pulse Current (Fig. 2) $I_{PP}$ Amps	Maximum Forward Voltage $V_F$ @ 8.3 msec. 100A Volts DC
<b>704-15K36</b>	31.5	100	36	51	300	3.0
<b>704-15K36T</b>	31.5	100	36	51	300	3.0

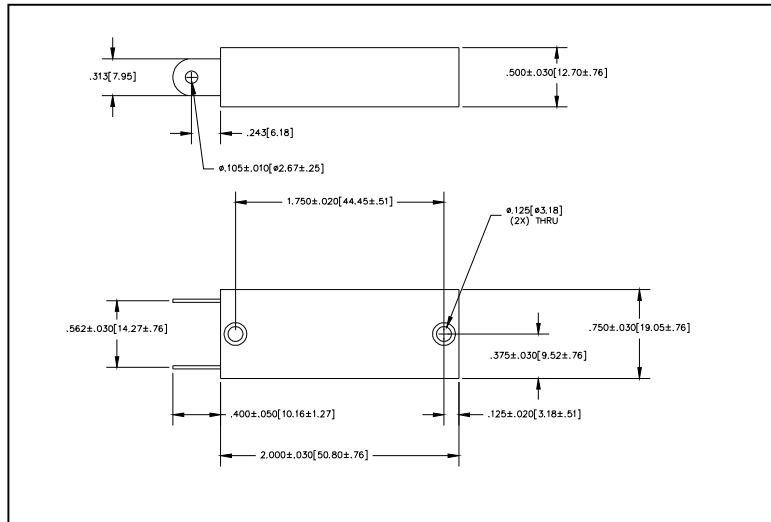
**Note 1:** A device is normally selected according to the reverse "Stand Off Voltage" ( $V_{WM}$ ) which should be equal to or greater than the DC or continuous peak operating voltage level. Special Voltages available from the factory.

**TECHNICAL DATA**  
**DATA SHEET 561, REV. -**

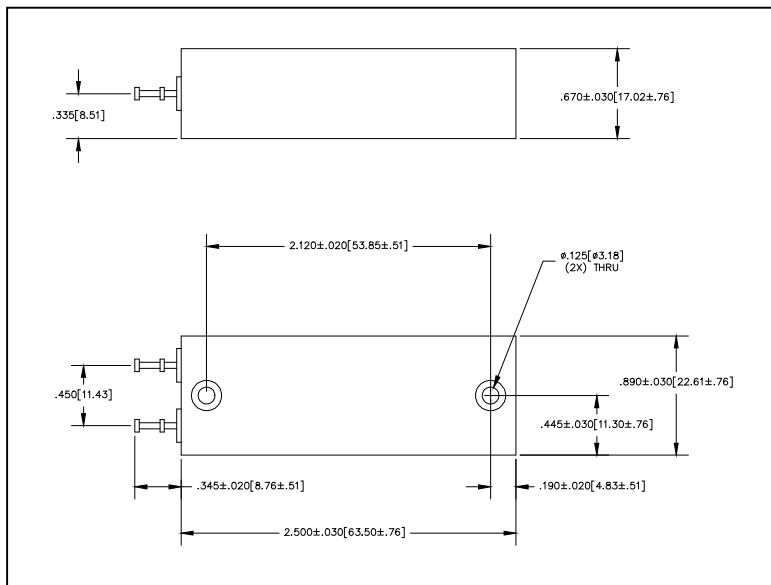
**MECHANICAL CHARACTERISTICS**

CASE: Molded Case  
 TERMINAL: Silver Plated Brass  
 POLARITY: Cathode terminal marked with a dot  
 WEIGHT: 38 grams  
 MOUNTING POSITION: Any

**MECHANICAL DIMENSIONS: In Inches / mm**



**Flat Leads**



**Turret Leads**

**SUBMODULE SCREENING TEST PLAN  
For Modules H1, H2, and H3**

<b>Test</b>	<b>Condition</b>	<b>MIL-STD-750 Test Method</b>
Storage	TA = +175C for 24 hours	1032
Temp Cycle	-65C to +175C, 20 cycles, 15 minutes each extreme	1051
Acceleration	20KG, Y1 axis, no hold time	2006
Electrical	Reverse Current (IR) @ rated VR Breakdown voltage (BV) @ IZ	4016 4022
Pulse	20 pulses @ rated Ipp tp = 10µS X 1000µS	
Electrical	Reverse Current (IR) @ rated VR	4016
Burn - In	TA = +125C @ rated VR for 96 hours	1038
Electrical	Reverse Current (IR) @ rated VR D-IR = 50% or 1µA, whichever is > Breakdown voltage (BV) @ IZ D-BV = +-2% from initial reading	4016 4022
Fine Leak	5 X 10-8 atmcc/sec	1071G/H
Gross Leak	T = +125C for 1 min, no bubbles	1071C/D
Group A	Reverse Current (IR) @ rated VR Breakdown voltage (BV) @ IZ Clamping voltage (VC) @ Ipp tp = 10µS X 1000µS Forward voltage (VF) @ IF tp = 8.3 msec	4016 4022 4011

**NOTE:** For bidirectional devices test both polarities-split hours on Burn-in test and surge pulses to 50% each polarity.

**Attributes Data Supplied**  
Module - H1, H2, H3

**MODULE SCREENING TEST PLAN  
For Module H1**

**Test**

**MIL-STD-750 Test Method**

Group A Electricals

4016, 4022

Attributes Data Supplied  
Module - H1

**MODULE SCREENING TEST PLAN  
For Module H2**

<b><u>Test</u></b>	<b><u>Condition</u></b>	<b><u>MIL-STD-750 Test Method</u></b>
Storage	TA = +150C for 24 hours	1032
Temp Cycle	-65C to +150C, 10 cycles, 30 minutes each extreme	1051
Electrical	Reverse Current (IR) @ rated VR Breakdown voltage (BV) @ IZ	4016 4022
Pulse	20 pulses @ rated Ipp tp = rated	
Electrical	Reverse Current (IR) @ rated VR	4016
Burn - In	TA = +125C @ rated VR for 96 hours	1038
Electrical	Reverse Current (IR) @ rated VR D-IR = 50% or 1 $\mu$ A, whichever is > Breakdown voltage (BV) @ IZ D-BV = +-2% from initial reading	4016 4022
Group A	Reverse Current (IR) @ rated VR Breakdown voltage (BV) @ IZ Clamping voltage (VC) @ Ipp tp = rated Forward voltage (VF) @ IF tp = 8.3 msec	4016 4022  4011

NOTE: For bidirectional devices test both polarities-split hours on Burn-in test and surge pulses to 50% each polarity.

Attributes Data Supplied  
Module - H2

**MODULE GROUP B TESTING  
For Module H3**

<u>Test</u>	<u>Condition</u>	<u>MIL-STD-750 Test Method</u>
<b><u>SUBGROUP 1:</u></b>		
Solderability		2026
Resistance to solvents		1022
<b><u>SUBGROUP 2:</u></b>		
Temp Cycling	-65C/+150C, 10 cycles, 30 minutes each extreme	1051
Electrical	Reverse Current (IR) @ rated VR	4016
	Breakdown voltage (BV) @ IZ	4022
<b><u>SUBGROUP 3:</u></b>		
Electrical	Reverse Current (IR) @ rated VR	4016
	Breakdown voltage (BV) @ IZ	4022
Operating Life	@ rated VR, TA = +125C for 340 hours	1026
Electrical	Reverse Current (IR) @ rated VR	4016
	D-IR = 50% or 1 $\mu$ A, whichever is >	
	Breakdown voltage (BV) @ IZ	4022
	D-BV = +-5% from initial	

**NOTE:** For bidirectional devices test both polarities-split hours on Operating Life to 50% each polarity.

Attributes Data Supplied  
Sampling per MIL-S-19500  
Module - H3 (Group B)

**MODULE GROUP C TESTING  
For Module H3**

<u>Test</u>	<u>Condition</u>	<u>MIL-STD-750 Test Method</u>
<u>SUBGROUP 1:</u>		
Physical dimensions		2066
<u>SUBGROUP 2:</u>		
Terminal strength (tension)	Test condition A, W = 10lbs., t = 15 seconds	2036
Moisture resistance	Omit initial conditioning	1021
Electrical	Reverse Current (IR) @ rated VR Breakdown voltage (BV) @ IZ	4016 4022
<u>SUBGROUP 3:</u>		
Shock	1500G's, 0.5ms, 5 blows in each orientation X1, Y1, Z1	2016
Vibration, var. freq.		2056
Electrical	Reverse Current (IR) @ rated VR Breakdown voltage (BV) @ IZ	4016 4022
<u>SUBGROUP 4:</u>		
Salt atmosphere		1041
<u>SUBGROUP 5:</u>		
Operating Life	@ rated VR, TA = +125C for 1000 hours	1026
Electrical	Reverse Current (IR) @ rated VR D-IR = 50% or 1 $\mu$ A, whichever is > Breakdown voltage (BV) @ IZ D-BV = +-5% from initial	4016 4022

NOTE: For bidirectional devices test both polarities-split hours on Operating Life to 50% each polarity.

Attributes Data Supplied  
Sampling per MIL-S-19500  
Module - H3 (Group C)

**TECHNICAL DATA**

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