

ELECTRONIC TUBE REFERENCE

7657

Specialized - Radiation Counter electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

FISSIONCOUNTER

High-temperature guard-ring fission chamber for thermal-neutron detection. Designed for operation to about 500°F, it is ruggedized for severe shock and vibration and provides stable neutron counting across a wide applied-voltage range.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	— / —	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 FissionCounter
No fixed ratings recorded.
Source-derived physical/electrical section.

Westinghouse 7657 April 1, 1960 HIGH TEMPERATURE GUARD RING FISSION CHAMBER 7657 The 7657 fission chamber is designed to detect thermal neutrons in the range of 1.4 to 1.4 x 10⁹ neutrons/cm²/ second. The detector is extremely rugged in construction designed to pass MIL-S-901 for shock and MIL-5td-167 {Type 1} for vibration. The 7657 is of guard ring construction, a feature which minimizes electrical leakage across the internal insulators, and it may be operated in any position at temperatures up to 500°F. The 7657 is constructed of aluminum, with high purity alumina ceramic insulators throughout, including those used in the type HN coaxial connectors. In typical operation, the counter has a thermal neutron sensitivity of 0.7 counts/neutron/cm² throughout a wide range of applied voltage. MECHANICAL: Maximum Diameter, 3-1/32 Inches Maximum Overall Length 13.3/4 Inches Approximate Sensitive Length. 7-1/2 inches Net Weight 2172

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1947 Westinghouse

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1947 WESTINGHOUSE

Section 1 · FissionCounter

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
second. The detector is extremely rugged in construction designed to pass MIL-S	167	second. The detector is extremely rugged in construction designed to pass MIL-S-901 for shock and MIL-5td-167
the internal insulators, and it may be operated in any position at temperatures up to	500	the internal insulators, and it may be operated in any position at temperatures up to 500°F.
0.7 counts/neutron/cm2 throughout a wide range of applied vo	0.7	0.7 counts/neutron/cm2 throughout a wide range of applied voltage.
15t 1 15% Mates With Amphenol Thickness	2	15t 1 15% Mates With Amphenol Thickness 2 mg/em?2
[— Gos Pressure . ,	76	[— Gos Pressure . , ... 76 Cm of Hg
High Voltage Electrode to Cose (approx.)	160	High Voltage Electrode to Cose (approx.) 160 ppf
Temperature , , , , ,	500	Temperature , 500 °F
Operating Voltage , ,	300	Operating Voltage , , ... 300 Yalts
Operoting Voltage Ploteau (See Figure	800	Operoting Voltage Ploteau (See Figure 2)200 to 800 Yalts
Thermal Neutron Flux Range	10	Thermal Neutron Flux Range. ... 1.4 to 1,4 x 10° nv
APPROX. Amplitude {(Unlocaded)	-4	APPROX. Amplitude {(Unlocaded) 2 x 10-4 Volts
Inherent Rise Time (Average)	107	Inherent Rise Time (Average). 2% 107 Seconds

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
adjusted to	5	adjusted to 5 counts/second. By varying the pulse height
available. See Figure	1	available. See Figure 1, aofss the section entitled "Fission
&	1	& 1 t°

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Resistance ot	10	Resistance ot 500°F (minimum). . . . 10? Chms

TUBE TINKER

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