

ELECTRONIC TUBE REFERENCE

1B73

Specialized - Radiation Counter electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

GEIGERMULLERCOUNTER

Gas-filled Geiger-Müller radiation counter for pulse-counting detection. Manufacturer information available in this pass supports the general counter role but not a more specific radiation type or application.

GENERAL CHARACTERISTICS

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

SECTION RATINGS

SECTION1	GeigerMullerCounter
No fixed ratings recorded.	
Counter-tube source does not publish ordinary active-electrode promoted fields; counter performance is retained in parameters.	

1B73 Gamma Counter Tube

The **1B73** is a gas-filled gamma counter tube designed for radiation detection applications. Sponsored by the Amperex Electronic Corporation, the device features a copper cathode, an argon and quenching vapor filling, and is designed for high-voltage operation.

Construction and Physical Specifications

The 1B73 is constructed with a copper cathode. The effective dimensions of this cathode are 8 inches in length, with an outside diameter (O.D.) of 1 inch and a wall thickness of 1/16 inch.

The physical dimensions of the tube assembly are as follows:

- **Overall Length:** 9-5/8 inches $\pm$ 3/16 inch
- **Cathode Diameter:** 1.062 inches $\pm$ 0.007 inch
- **End Cap Diameters:** 0.562 inch $\pm$ 0.007 inch

Electrical connections are made directly to the end caps. The anode terminal is located on one end cap, while the opposite end cap is colored black and has no electrical connection.

Electrical and Operating Characteristics

The tube is designed to operate under high-voltage direct-current conditions across a wide temperature range. Its primary electrical and operating parameters include:

- **Operating Voltage:** 1150 V D.C.
- **Operating Temperature Range:** -20°C to +100°C
- **Capacity at Terminals:** 3.6 mmf
- **Cosmic Ray Efficiency:** Greater than 99%
- **Background (Unshielded):** 200 counts per minute
- **Life Expectancy:** Greater than 10⁸ counts

Plateau and Dead Time Parameters

The 1B73 exhibits a plateau in excess of 300 V. The slope of this plateau and the dead time of the tube have both registered and proposed values:

Parameter	Registered Value	Proposed Value (1949)
Slope of Plateau	2% to 5% per 100 V	5% per 100 V maximum
Dead Time	200 μ s	Approximately 100 μ s

Technical Summary

The **1B73** is a copper-cathode, argon-and-quenching-vapor-filled gamma counter tube. Operating at a nominal 1150 V D.C., it offers a plateau exceeding 300 V, a terminal capacity of 3.6 mmf, and a cosmic ray efficiency of over 99%. With an overall length of 9-5/8 inches and a robust operating temperature range of -20°C to +100°C, the 1B73 provides reliable radiation detection performance with a life expectancy exceeding 10⁸ counts.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1953 Amperex

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

1953 AMPEREX

Section 1 · GeigerMullerCounter

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Operating voltage	1150 V	—
Plateau minimum	300 V	—
Dead time approximate	200 us	—