

ELECTRONIC TUBE REFERENCE

1B43

Specialized - Switching Tube electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

SPARKGAPPULSESWITCH

Gas-filled spark-gap pulse-switching tube with a specified ignition-voltage range for controlled high-voltage breakdown service.

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 SparkGapPulseSwitch
No fixed ratings recorded.
Physical section extracted from supplied datasheet.

1B43 Gas-Filled Spark Gap Tube

Overview

The **1B43** is a two-electrode, gas-filled spark gap tube designed for electrical discharge applications. It features a double-ended cylindrical construction with nickel-plated terminal caps and is designed to operate reliably across a wide range of environmental conditions. The device is non-directional in its physical orientation, permitting mounting in any position. Production of the 1B43 has ceased, with the type officially designated as obsolete in the late 1940s.

Mechanical Design and Physical Dimensions

The 1B43 is constructed with a double-ended cylindrical envelope containing two electrodes. Electrical connection is established via nickel-plated terminal caps located at opposite ends of the cylinder. To ensure proper alignment in mounting clips or receptacles, the terminal caps must be concentric with each other within a tolerance of 1/32 inch.

The physical dimensions of the device are tightly controlled:

- **Overall Length:** 1 5/16 inches $\pm$ 1/16 inch
- **Terminal Cap Diameter:** 0.250 inch $\pm$ 0.005 inch
- **Terminal Cap Length:** 9/32 inch $\pm$ 1/64 inch
- **Maximum Diameter:** 7/16 inch, measured over the bulb or the cap skirt

The mechanical design allows the tube to be mounted in any position without affecting its operation or electrical characteristics.

Electrical Characteristics and Ratings

The electrical parameters of the 1B43 define its performance as a spark gap. The tube is characterized by its specific ignition threshold, low capacitance, and thermal tolerance:

- **Ignition Voltage:** 200 to 400 Vdc. This is the direct-current voltage range required to initiate breakdown and establish conduction across the gas-filled gap between the two electrodes.
- **Inter-electrode Capacitance:** 0.3 μ f. The extremely low capacitance between the active electrodes minimizes high-frequency loading and capacitive coupling when the tube is in its non-conducting state.
- **Ambient Temperature Range:** -40°C to +100°C. The device is rated to operate safely and maintain its electrical characteristics throughout this temperature span, allowing for deployment in both low-temperature and high-temperature environments.

Historical Status and Obsolescence

The 1B43 is an obsolete device. It was officially classified as obsolete on October 30, 1947. Following this classification, the specialized manufacturing equipment required to produce the tube was decommissioned and is no longer available, preventing any subsequent production of this specific spark gap model.