



ELECTRONIC TUBE REFERENCE

13201A

Voltage Regulator electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

VOLTAGEREGULATOR

Heavy-duty 100 V neon voltage stabilizer for approximately 15–200 mA operation in industrial and power-supply stabilization service.

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

SECTION 1 Voltage Regulator	
REGULATOR VOLTAGE	100 V
MINIMUM REGULATOR CURRENT	15 mA
MAXIMUM REGULATOR CURRENT	200 mA
STARTING VOLTAGE	135 V
MAINTAINING VOLTAGE	100 V
DYNAMIC IMPEDANCE	80 Ω
<i>Published Mullard/Ferranti ratings and characteristics promoted where applicable; additional electrical values retained as parameters.</i>	

13201A — Heavy-Duty Neon-Filled Voltage Stabiliser

The **13201A** is a heavy-duty, neon-filled gas-discharge voltage stabiliser tube designed for robust voltage regulation applications. Manufactured by Mullard, this cold-cathode device is engineered to maintain a

stable output voltage across a wide range of operating currents, making it suitable for power supply regulation and voltage reference circuits requiring high current-handling capabilities.

Physical Construction and Base Connections

The 13201A is housed in a large glass envelope designed to dissipate the heat generated during high-current gas discharge. The physical dimensions of the tube are as follows:

Dimension	Maximum Value
Overall Length	174 mm
Bulb Diameter	54 mm

The tube features a **British 4-pin base** for its electrical connections. The internal electrode structure consists of a cathode (k) and an anode (a). The base connections are arranged as follows:

- **Top Pin:** Cathode (k)
- **Bottom Pin:** Anode (a)
- The remaining two pins on the British 4-pin base are not electrically connected to the active electrodes.

Electrical Characteristics and Operating Conditions

The 13201A operates on the principle of a glow discharge in a neon gas medium. To initiate conduction, a minimum ignition voltage must be applied, after which the tube drops to its characteristic burning voltage. The electrical parameters under standard operating conditions are:

Parameter	Value
Maximum Ignition Voltage (V ignition max)	135 V
Burning Voltage Range (V burning)	90-110 V
Quiescent Current (I quiescent)	100 mA
Maximum Operating Current (I max)	200 mA
Minimum Operating Current (I min)	15 mA
Alternating Current (A.C.) Resistance	80 Ω

The wide operating current range from 15 mA to 200 mA highlights the heavy-duty nature of this stabiliser, allowing it to handle significant load variations while maintaining regulation. The nominal quiescent operating point is established at 100 mA, which lies centrally within the safe operating region.

Voltage-Current Characteristics and Regulation Performance

The performance of the 13201A is characterized by its dynamic voltage-current relationship. The internal gas discharge maintains a nearly constant potential difference between the anode and cathode despite substantial changes in the through-current.

According to the characteristic curves of the device, the burning voltage exhibits excellent stability across its active operating region:

- At the minimum operating current region near **20 mA**, the burning voltage is approximately **93 V**.
- At the nominal quiescent current of **100 mA**, the burning voltage rises slightly to approximately **96 V**.
- At a high-current operating point of **180 mA**, the burning voltage is approximately **98 V**.

This represents a total voltage variation of only about 5 V over a current change of 160 mA (from 20 mA to 180 mA). This flat characteristic is mathematically reflected in the low dynamic A.C. resistance of **80 Ω** , which ensures that ripple and load-induced voltage fluctuations are heavily attenuated.

Technical Summary

The **13201A** is a heavy-duty neon-filled voltage stabiliser featuring a British 4-pin base, a maximum overall length of 174 mm, and a maximum diameter of 54 mm. It is designed to regulate voltages in the 90–110 V range, with a maximum ignition voltage of 135 V. Capable of supporting currents from 15 mA up to 200 mA, with a quiescent design point of 100 mA, the tube provides stable performance supported by a low dynamic A.C. resistance of 80 Ω .

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1963 Mullard

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

1963 MULLARD

Section 1 · Voltage Regulator

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Ignition/starting voltage maximum	135 V	—
Quiescent current	100 mA	—
Operating current maximum	200 mA	—
Operating current minimum	15 mA	—

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Burning voltage range	90 to 110 V	—
AC resistance	80 ohm	—

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Application	Heavy-duty neon voltage stabilization	—

TUBE TINKER

An independent reference for electronic tubes, vacuum tubes, and their source documents.

[Catalog](#) [Tube types](#) [Full books](#) [Blog](#) [Feedback & corrections](#)

© 2026 Tube Tinker