

GAS NOISE SOURCE, ARGON



DESCRIPTION

This tube is designed for use as a noise source in super high frequency (SHF) measurements. It is constructed for use with a 90° H-plane mount in RG/48U waveguide to provide noise in the 7.6-11.5 cm waveband. When used in the suggested mount assembly it functions essentially as an untuned noise generator over the recommended transmission bandwidth of the mount.

RATINGS

DC

Filament Voltage..... 12 Vdc
Anode Current..... 250 mAdc
Filament Current..... 170 mAdc
Tube Dissipation..... 11 watts
Tube Voltage Drop..... 44 Vdc

AC

Anode Current*..... 250 mAac
Anode Current Striking Voltage..... 2000 Vac max.
Tube Dissipation..... 16 watts max.
Tube Voltage Drop*..... 65 Vac

* These values are those read on RMS reading meters.

ENVIRONMENTAL

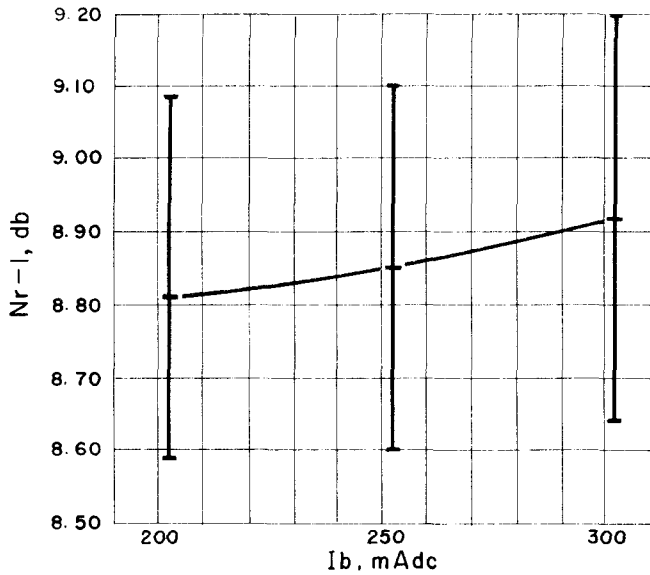
Ambient Temp. Range..... -55°C to +85°C
Bulb Temp..... +125°C max.

PHYSICAL CHARACTERISTICS

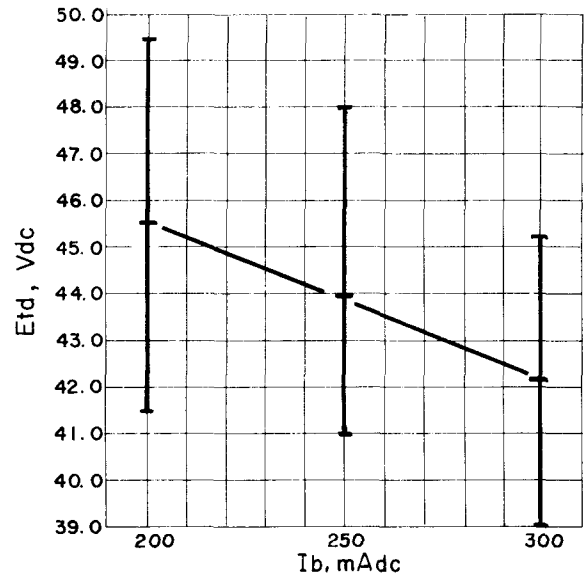
Max. overall length..... 9³/₁₆"
Max. diameter..... .565
Mounting position..... Refer to Page 4

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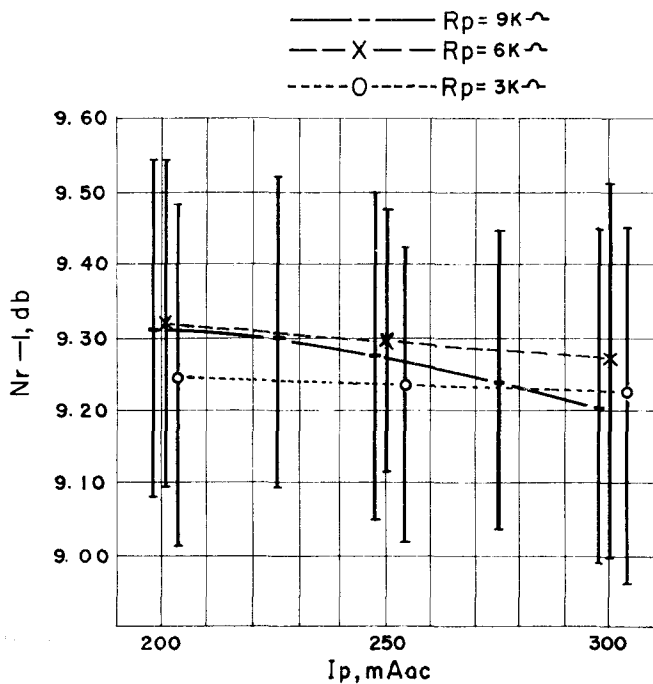
EXCESS NOISE RATIO VS.
D-C TUBE CURRENT



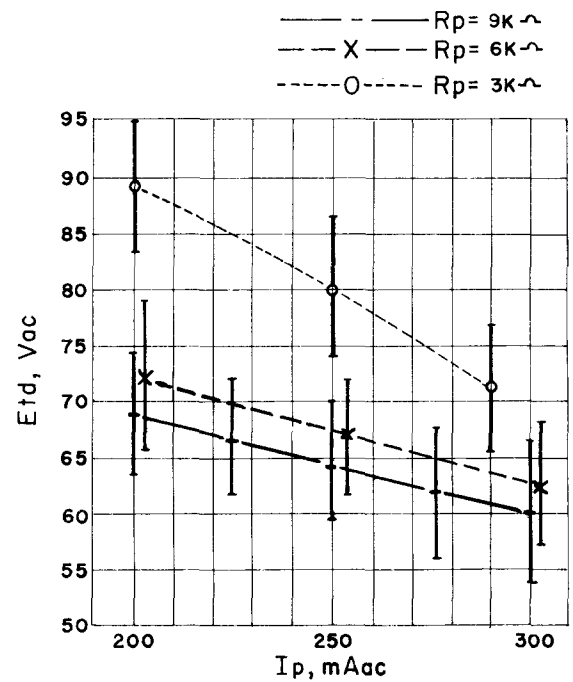
TUBE DROP VS.
D-C TUBE CURRENT

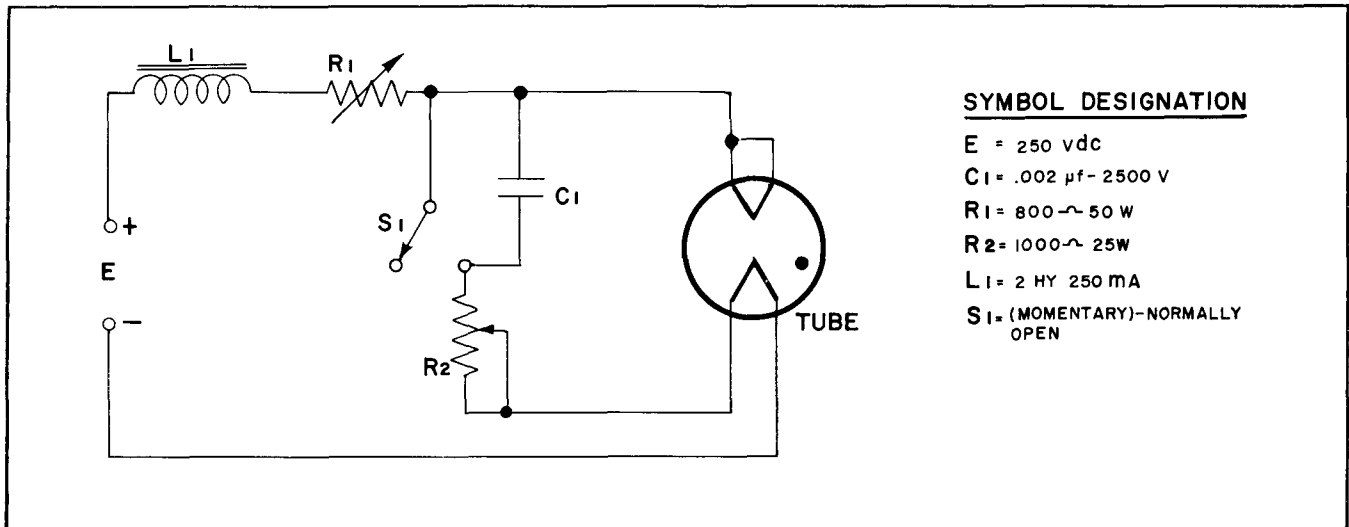


EXCESS NOISE RATIO VS.
A-C (60 CYCLES) TUBE CURRENT

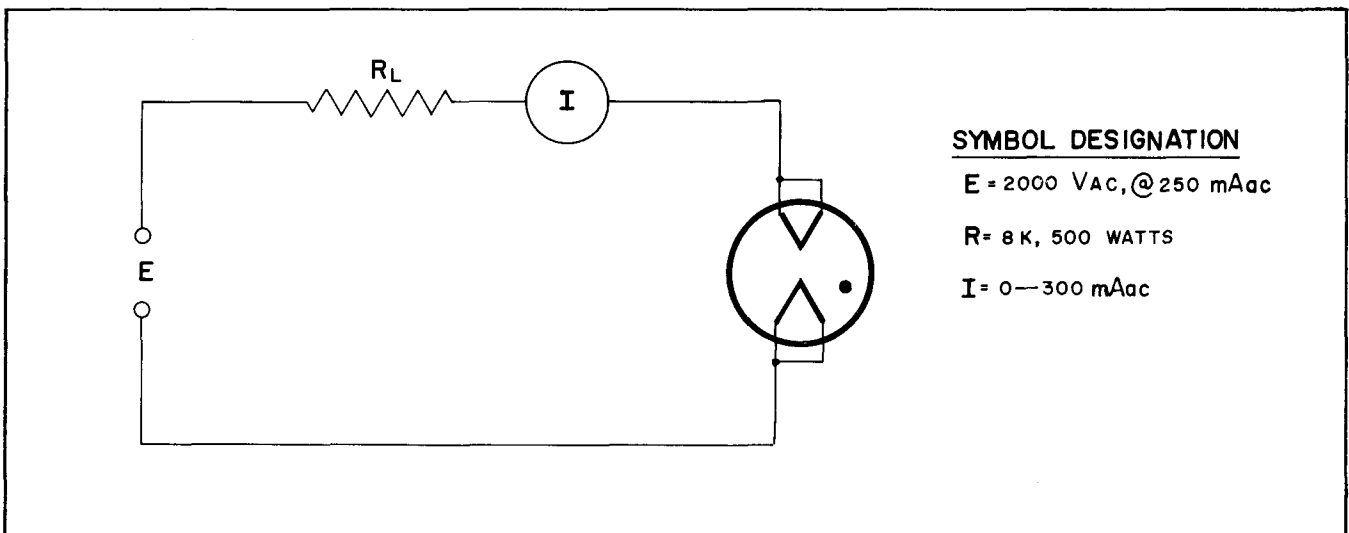


TUBE DROP VS.
A-C (60 CYCLES) TUBE CURRENT





TYPICAL STARTING AND OPERATING CIRCUIT (DC)



TYPICAL STARTING AND OPERATING CIRCUIT (AC)

OPERATING CHARACTERISTICS

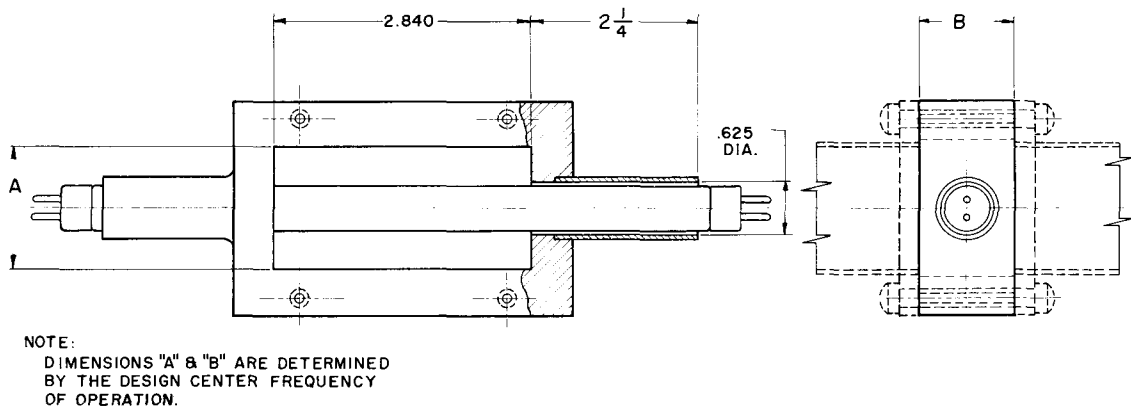
The use of pure inert gas eliminates the dependence of noise output on the operating temperature. The noise source is available for measurement at zero warm-up time with little change due to ambient temperature variations.

The performance of the tube is non-critical with respect to variations in the discharge current.

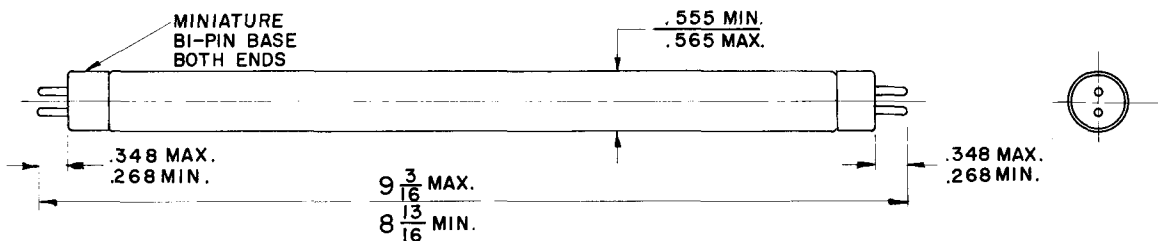
This tube may be operated either in a d-c circuit which provides a starting filament current or in an a-c circuit without initial filament operation. In either case the operating circuit should have sufficient series resistance to limit the current through the tube to the rated value during operation.

When used in the suggested mount assembly, the average operating voltage standing wave ratio (VSWR) at the design center frequency of the mount is $2.50 (\pm 0.5)$ db. In such a mount when the tube is operated at the rated d-c current, $\pm 20\%$, the excess noise coupled into the wave guide over the recommended transmission bandwidth of the mount is $8.85 (\pm 0.25)$ db above 290°K . When the tube is operated in an a-c circuit, there is a small correction to the available excess noise depending on the circuit components and the a-c frequency.

When used in a 90° H-plane mount which is terminated by a piston adjusted to match the susceptance of the tube and mount, the excess noise coupled into the guide is $15.3 (\pm 0.3)$ db above 290°K .



SUGGESTED TYPE OF WAVEGUIDE MOUNT ASSEMBLY, RG-48/U



OUTLINE DRAWING

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