

BENDIX AVIATION CORPORATION
RED BANK DIVISION
ELECTRON TUBE PLANT
EATONTOWN, NEW JERSEY

September 19, 1957

SUBJECT: TECHNICAL DATA

TYPE 7101
Red Bank Type TD-29

DESCRIPTION: GAS NOISE SOURCE - NEON

This tube is designed for use as a noise source in UHF measurements. It is constructed for use with a 90° H plane mount in RG-69U waveguide or equivalent to provide noise in the 1.12 to 1.70 KMC frequency range. When used in a properly matched mount it functions essentially as an untuned noise generator over the recommended transmission bandwidth of the mount. 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 18 Db above 290°K.

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.

The use of pure inert gas eliminates any dependence of noise output on operating temperature. The noise source is available for measurement at practically zero warm-up time. The performance of the tube is non-critical with respect to variations in the discharge current. When operated in an A.C. circuit there is a small correction to the available excess noise depending upon circuit components and the A.C. frequency. When operated in a D.C. circuit, only one cathode is active, the other serving as the anode.

Mechanical Data

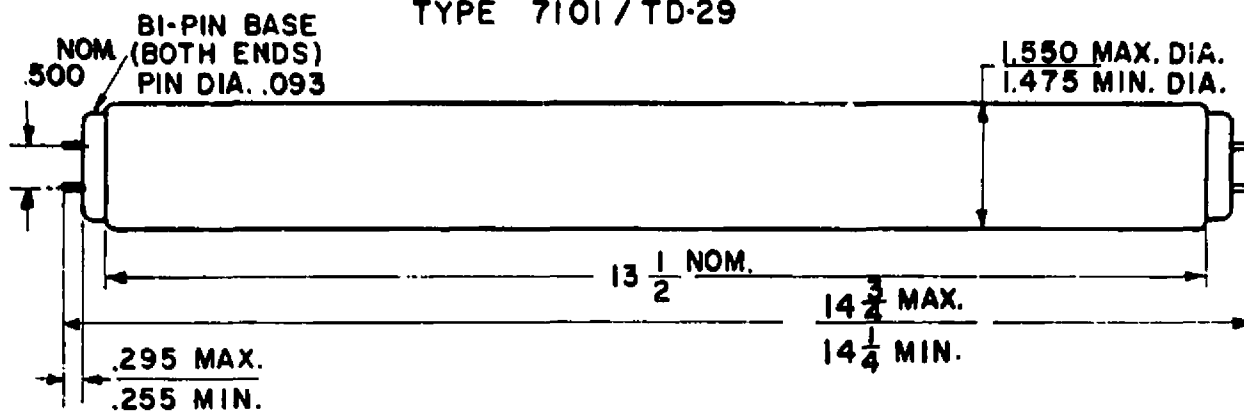
Coated filamentary cathodes - ionically heated
Maximum diameter - 1.55"
Maximum overall length - 14 3/4"
Bases - Bipin each end
Mounting position - any

Electrical Data

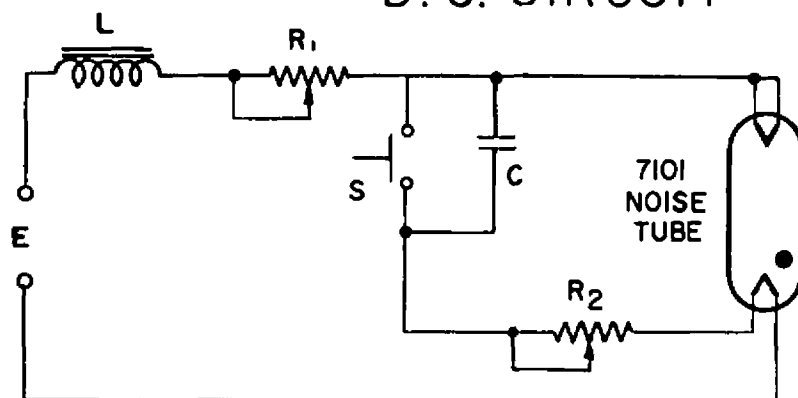
	D.C.		A.C.
Anode Current	250 mA _{dc}	Anode Current	250 mA _{ac}
Filament Current	350 mA _{dc}	Filament Current *	350 mA _{ac}
Tube Drop	125 V _{dc}	Tube Drop *	155 V _{ac}
Tube Dissipation	31 watts	Anode Striking Voltage	2500 V _{ac} max.
Ambient Temperature	(-) 55°C min.		
Bulb Temperature	(+) 125°C max.		

*As read on RMS meter

OUTLINE TYPE 7101/TD-29

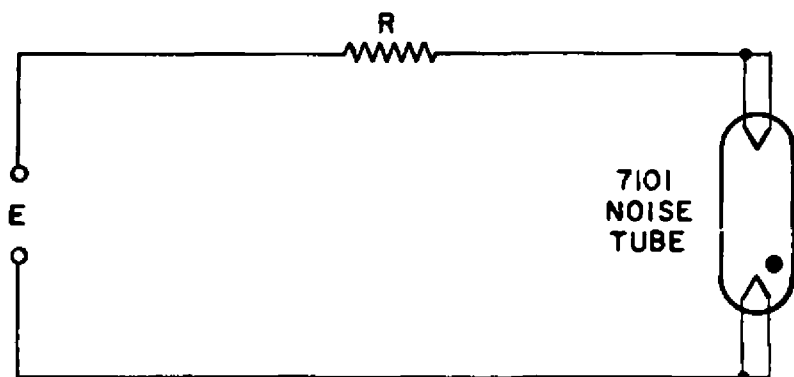


D. C. CIRCUIT



E = 250 vdc C = .002 μ f
 R₁ = 500 $\sim$ 50 w 2500 v
 R₂ = 500 $\sim$ 50 w S = N.O. MOMENT-
 L = 2 HY 250 mA ARY
 ADJUST R₁ FOR 250 mA
 ADJUST R₂ FOR 350 mA
 WITH S CLOSED

A.C. CIRCUIT



E = 2500 V
 R = 9500 $\sim$ 600 W

NOTE:
 R MAY BE INCLUDED IN
 SUPPLY AS REACTANCE