Grounded Grid Oscillator Triode

3A/147J (CV82)

This valve is intended primarily as an oscillator at frequencies up to 750 Mc/s. In this range outputs between 1 and 2 watts are readily obtainable.

CATHODE.

Indirectly heated oxide-coated. The cathode is strapped inside the glass bulb to one heater lead.

Voltage	4	V
Nominal current	0.7	A

RATING.

Amplification factor	Measured at Va250V, Vg_1—3	35	
Mutual conductance		6	mA/V

DIRECT INTER-ELECTRODE CAPACITIES.

Anode to grid	Measured with an earthed shield around the bulb	1.4	pF
Anode to cathode		0.4	pF
Grid to cathode		4.2	pF

DIMENSIONS.

Maximum overall length	82.55	mm.
Maximum disc diameter	51.3	mm.
Maximum bulb diameter	31.5	mm.
Maximum disc thickness	0.25	mm.
Net weight	24	g.

MOUNTING.

The valve is designed to mount by means of the grid disc between coaxial lines. Spade tags are attached to the heater leads one of which, that connected to the cathode, is painted red.

MAXIMUM RATINGS.

Maximum direct anode voltage	350	V
Maximum direct anode current	28	mA
Maximum anode dissipation	6	W
Maximum grid dissipation	0.5	W

Tentative data
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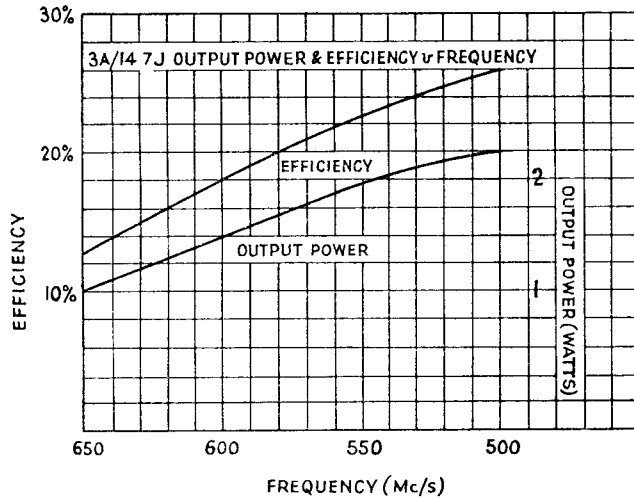
TYPICAL OPERATION

Oscillator at 550 to 650 Mc/s.

A convenient oscillator circuit takes the form of that shown in the accompanying sketch, the anode resonator being the only variable and the cathode being choked back by either the inductance of its own leads or small chokes. Using this circuit, an output of from 1 to 2 watts at an efficiency varying between 13 and 26 per cent. has been obtained over the above frequency band. The curve below indicates the variation of efficiency and output with frequency over the range.

650 Mc/s is the highest frequency obtainable with a closed resonator owing to physical limitations, i.e., the length and diameter of the anode lead. Higher frequencies can be obtained with an open line. The highest frequency at which the valve will oscillate is about 850 Mc/s. Appreciable power has been obtained at frequencies as high as 750 Mc/s.

NOTE : The internal diameter of the outer conductor of any coaxial line system employed with this valve should not be less than 1.38 inches if possible damage to the grid disc seal is to be avoided.



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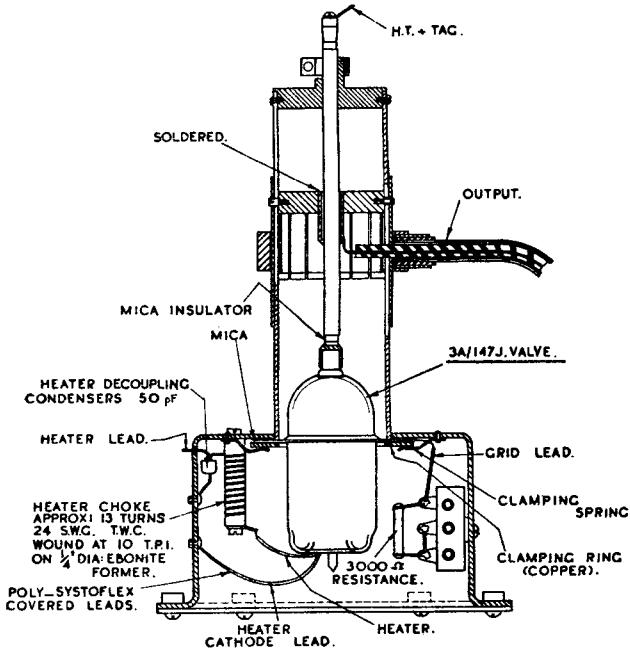

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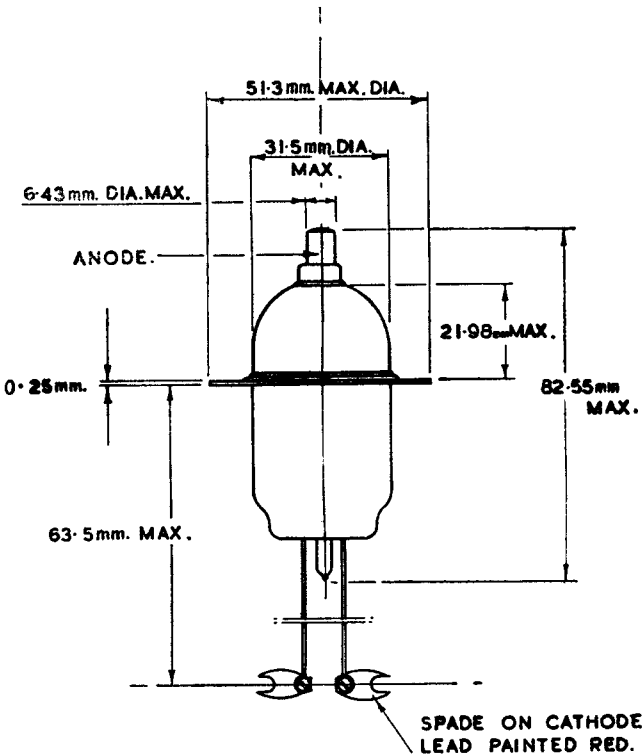

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