



2K26

# 2K26 KLYSTRON

SINGLE-RESONATOR, REFLEX TYPE  
Frequency: 6250 to 7060 Mc.

### GENERAL DATA

#### Electrical:

Heater, for Unipotential Cathode:

Voltage . . . . .	6.3 ± 0.5 . . . . .	ac or dc volts
Current . . . . .	0.44 . . . . .	amp
Frequency Range . . . . .	6250 to 7060 . . . . .	Mc

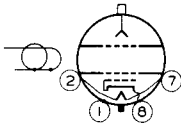
#### Mechanical:

Mounting Position . . . . .	Any
Dimensions, Terminal Connections, and Mechanical Tuning Mechanism . . . . .	See Outline Drawing
Resonant Cavity . . . . .	Integral Part of Tube
Envelope . . . . .	Metal
Cap. . . . .	Miniature with Wafer
Base . . . . .	Small-Wafer Octal 4-Pin with Pin No.4 replaced by Coaxial Output Line

#### BOTTOM VIEW

Pin 1 - Shell,  
Resonator

Pin 2 - Heater



Pin 7 - Heater  
Pin 8 - Cathode

Cap - Reflector  
Terminal

NOTE: COAXIAL OUTPUT LINE PASSES THROUGH  
VACANT PIN POSITION NO. 4

### CW OSCILLATOR - Class C

#### Maximum Ratings, Absolute Values:

DC RESONATOR VOLTAGE . . . . .	330 max.	volts
DC REFLECTOR VOLTAGE:		
Positive Value . . . . .	0 max.	volts
Negative Value . . . . .	350 max.	volts
DC RESONATOR CURRENT . . . . .	35 max.	ma
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	50 max.	volts
Heater positive with respect to cathode.	50 max.	volts
AMBIENT TEMPERATURE OF SHELL . . . . .	110 max.	°C
TEMPERATURE OF COAXIAL OUTPUT LINE . . . . .	90 max.	°C

#### Typical Operation <sup>□</sup> at 6660 Mc in Mode "A" with 3/4" x 1-1/2" Wave Guide

DC Resonator Voltage . . . . .	300	volts
DC Reflector Voltage Range <sup>▲</sup> . . . . .	-65 to -120	volts
DC Resonator Current . . . . .	25	ma
DC Reflector Current . . . . .	less than 7	µa

(continued on next page)

<sup>□</sup>, <sup>▲</sup>: See next page.

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### Half-Power Electronic-Tuning

Frequency Change <sup>■</sup> . . . . .	55	Mc
Power Output . . . . .	120	mw

- ▲ Adjusted for maximum power output at the given operating frequency.
- Change in frequency between the two half-power points when the reflector voltage is varied above and below the point of maximum power output corresponding to the given frequency.
- The coaxial output line is coupled to the specified wave guide through the wide-band coaxial coupling unit shown on following pages.

### INSTALLATION NOTES

A socket for the 2K26 may be obtained by removing the clip from the No.4 pin position of an octal socket and drilling the No.4 opening large enough to admit the coaxial line and the surrounding coupling unit. To guard against excessive strain on the coaxial output line, the tube must be securely fastened by a clamp on the base of the socket mounting. Bumping or continued pressure on the output line will seriously damage the tube. The proper area for clamping on the shoulder of the header skirt is shown on the Outline Drawing.



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### OPERATING NOTES

All tabulated data and curve information shown for the 2K26 were taken with the specified coupling unit and wave guide. It is important that this coupling unit or its electrical equivalent be used to insure tube interchangeability and satisfactory tuning characteristics. In addition, the standing-wave ratio of the coupler should not exceed 0.8 db. (1.1 voltage-standing-wave ratio).

In most applications the cathode of the 2K26 is operated at a negative potential with respect to ground so that the tube shell, which is integral with the resonator, is at ground potential. In those applications which do not operate with the shell at ground potential, it is essential that the 2K26 be surrounded by a grounded shield and tuned with an insulated tool, in order to protect the user from contact with high voltage. The shield design should permit adequate ventilation to assure that ambient temperature, as measured with a thermometer inserted between the metal tube shell and the shield, will be less than the maximum rated value. Ambient temperature changes will cause the resonator to expand or contract, producing a change in frequency. For best frequency stability, the 2K26 should be operated at nearly constant ambient temperature and with a well-regulated power supply.

Shielding of the reflector and resonator voltage leads as close to the tube as possible is essential to avoid modulation of the tube output by any external voltages. In addition, the connection to the reflector terminal must be insulated to withstand the total acceleration and reflector voltage. To avoid damage to the tube, the reflector potential must never become positive with respect to the cathode.

Tuning of the 2K26 is accomplished by mechanical and electronic means. The mechanical tuning system is designed to permit approximate adjustment of frequency, but is not recommended for use where continual or frequent adjustment of frequency is required. Approximately five full turns of the frequency-adjustment screw are sufficient to tune the tube over its rated frequency range. The electronic tuning range is dependent upon reflector voltage, the type of load and the kind of coupling to the load.

Voltage modes are regions within the total range of reflector voltage in which oscillations will occur. The typical operating conditions and curves shown for type 2K26 apply to mode "A", the only mode recommended for this tube.

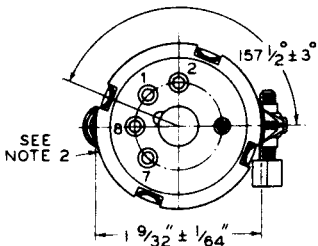
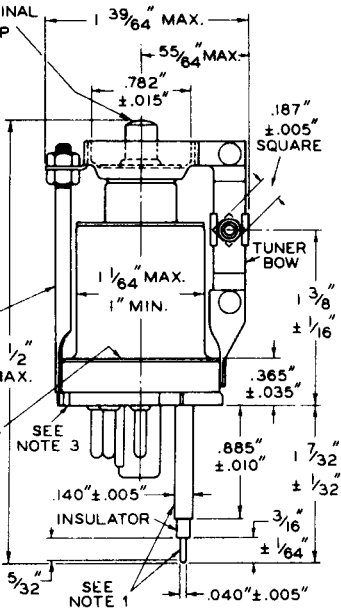
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REFLECTOR TERMINAL  
MINIATURE CAP  
WITH WAFER



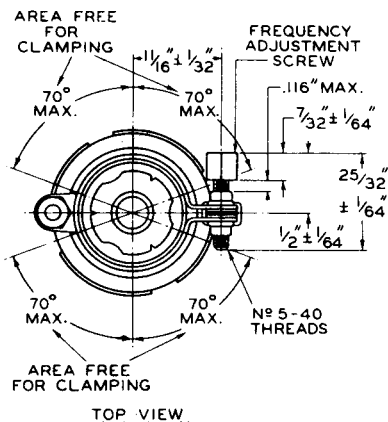
BOTTOM VIEW



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**NOTE 1:** THE INNER AND OUTER CONDUCTORS OF THE COAXIAL OUTPUT LINE ARE CONCENTRIC WITHIN 0.010".

**NOTE 2:** BASE-PIN AND COAXIAL-OUTPUT-LINE POSITIONS ARE HELD TO TOLERANCES SUCH THAT PINS AND OUTPUT LINE WILL FIT FLAT-PLATE GAUGE HAVING (a) THICKNESS OF  $1-\frac{7}{32}$ ", (b) 4 HOLES WITH DIAMETER OF  $0.1030$ "  $\pm 0.0005$ " FROM TOP SURFACE OF GAUGE TO A DEPTH OF 0.25" AND THEN WITH DIAMETER INCREASED BY APPROXIMATELY  $\frac{1}{64}$ " FOR REMAINING DEPTH OF HOLE, SO LOCATED ON A  $0.6870$ "  $\pm 0.0005$ " DIAMETER CIRCLE THAT THE DISTANCE ALONG THE CHORD BETWEEN ANY TWO ADJACENT HOLE CENTERS IS  $0.2630$ "  $\pm 0.0005$ ", (c) ONE HOLE WITH DIAMETER OF  $0.1600$ "  $\pm 0.0005$ " TO DEPTH OF  $1-\frac{7}{32}$ " WHOSE CENTER IS LOCATED ON THE SPECIFIED PIN CIRCLE A DISTANCE DETERMINED BY LAYING OFF ON THE TOP SURFACE OF THE GAUGE COUNTERCLOCKWISE FROM THE LAST OF THE FOUR HOLES TWO CONSECUTIVE CHORDS EACH  $0.2630$ "  $\pm 0.0005$ ", AND (d) A CENTER HOLE WITH A MINIMUM DIAMETER OF 0.400" TO CLEAR THE BASE PLUG AND KEY. PIN AND OUTPUT-LINE FIT IN GAUGE SHALL BE SUCH THAT GAUGE TOGETHER WITH SUPPLEMENTARY WEIGHT TOTALING 2 LBS. WILL NOT BE LIFTED WHEN PINS AND COAXIAL OUTPUT LINE ARE WITHDRAWN.

**NOTE 3:** SMALL-WAFER OCTAL 4-PIN BASE WITH PIN No. 4 REPLACED BY COAXIAL OUTPUT LINE.

**NOTE 4:** MINIMUM WIDTH OF SHOULDER IS 0.045".

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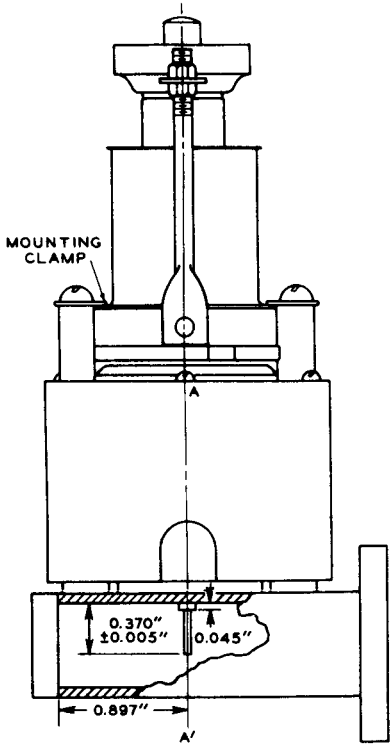


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## COUPLING ARRANGEMENT

RCA-2K26 Coupled to a 3/4" x 1-1/2" Wave Guide  
Through a Coaxial Transducer Coupling  
Circuit



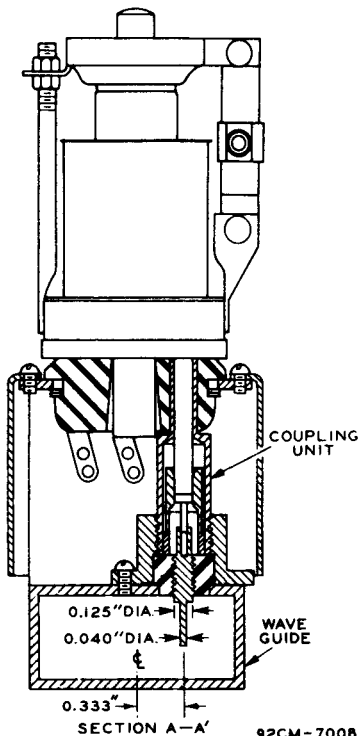


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COUPLING ARRANGEMENT (Cont'd)



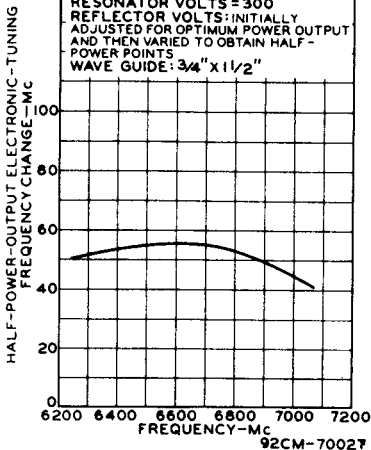
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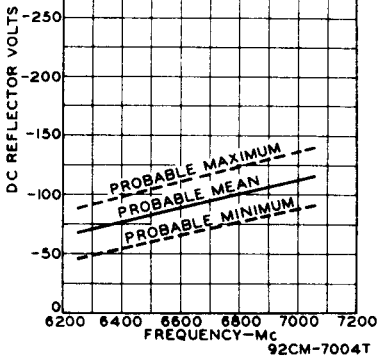
## OPERATION CHARACTERISTIC

TYPE 2K26  
 OPERATING MODE: "A"  
 RESONATOR VOLTS = 300  
 REFLECTOR VOLTS: INITIALLY  
 ADJUSTED FOR OPTIMUM POWER OUTPUT  
 AND THEN VARIED TO OBTAIN HALF-  
 POWER POINTS  
 WAVE GUIDE:  $3/4" \times 1 1/2"$



## OPERATION CHARACTERISTIC

TYPE 2K26  
 OPERATING MODE: "A"  
 RESONATOR VOLTS = 300  
 WAVE GUIDE:  $3/4" \times 1 1/2"$



NOV. 15, 1948

TUBE DEPARTMENT  
 RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

CE-7002T-7004T





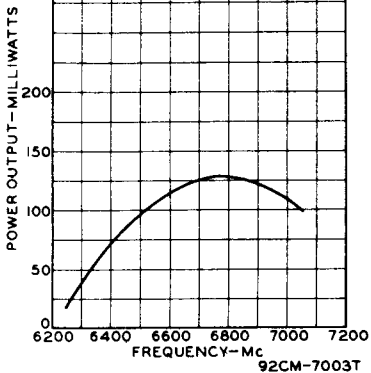
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OPERATION CHARACTERISTIC

TYPE 2K26  
OPERATING MODE: "A"  
RESONATOR VOLTS = 300  
REFLECTOR VOLTS: ADJUSTED  
FOR OPTIMUM POWER OUTPUT  
WAVE GUIDE:  $\frac{3}{4}$ " x  $1\frac{1}{2}$ "



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