



**RADIO MANUFACTURERS ASSOCIATION
ENGINEERING DEPARTMENT**

Release No. 434

September 6, 1945

TYPE 3C34

sponsor:

TRIODE AMPLIFIER-OSCILLATOR

Heintz & Kaufman, Ltd.

GENERAL CHARACTERISTICS

ELECTRICAL

(a)	Filament	<u>Thoriated Tungsten</u>	
	Voltage	<u>6.3</u>	volts
	Current	<u>3.0</u>	amps
Average Characteristics at ($E_b = 1000$ volts); ($I_b = 35$ MA); ($E_f = 6.3$ volts) ($E_{c1} = -19$ volts)			
	Amplification Factor	<u>25</u>	
	Grid Plate Transconductance	<u>2600</u>	Micromhos
Direct Interelectrode Capacitances			
(b)	Grid-Plate	<u>1.3</u>	uuf
	Input, grid - filament	<u>2.1</u>	uuf
	Output, plate - filament	<u>0.2</u>	uuf
	Frequency for Maximum Ratings	<u>60</u>	Mc

MECHANICAL

Type of Cooling			
Convection (Max. Ambient 60°C)			
(c)	Base Description	<u>Small 4-Pin</u>	
	(see attached outline drawing)		
Maximum Overall Dimensions (See Outline Drawing)			
	Length	<u>4 3/8</u>	in.
	Diameter	<u>1 7/16</u>	in.
	Base Connections	<u>30</u>	

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS SECTION

CLASS B AUDIO-FREQUENCY POWER AMPLIFIER, TWO TUBES

	<u>Typical Operation</u>	<u>Max. Ratings</u>
D-c Plate Voltage	<u>1250</u> volts	<u>1500</u> volts
Max. Signal Plate Current per tube (note 1)		<u>75</u> ma
D-c Max. Signal Plate Input, per tube (note 1)		_____ watts
Plate Dissipation, per tube (note 1)		<u>25</u> watts
D-c Grid Voltage (Grid #1)	<u>-42</u> volts	
Peak A-F Grid Input Voltage	<u>256</u> volts	
Zero Signal Plate Current	<u>24</u> ma	
Max. Signal Plate Current	<u>136</u> ma	
Max. Signal Driving Power (approx.)	<u>4.2</u> watts	
Effective Load, Plate-to-plate	<u>21,200</u> ohms	
Max. Signal Plate Power Output	<u>120</u> watts	

(Note 1) Averaged over any audio-frequency cycle.

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS SECTION

CLASS C RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR, PLATE MODULATED

(Carrier Conditions Per Tube for use with a Maximum Modulation Factor of 1.0)

	<u>Typical Operation</u>	<u>Max. Ratings</u>
D-c Plate Voltage	<u>1500</u> volts	<u>1500</u> volts
D-c Grid Voltage (Grid #1)	<u>-145</u> volts	<u>-250</u> volts
D-c Plate Current	<u>50</u> ma	<u>60</u> ma
D-c Grid Current	<u>20</u> ma	<u>20</u> ma
Plate Input		<u>75</u> watts
Plate Dissipation		<u>17</u> watts
Peak R-F Grid Input Voltage	<u>245</u> volts	
Driving Power	<u>4.5</u> watts	
Plate Power Output	<u>60</u> watts	

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS SECTION

CLASS C RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR

(Key down conditions per tube without modulation. Modulation, essentially negative, may be used if positive peak of A-F envelope does not exceed 115% of carrier conditions.)

	<u>Typical Operation</u>	<u>Max. Ratings</u>
D-c Plate Voltage	<u>2000</u> volts	<u>2000</u> volts
D-c Grid Voltage	<u>-140</u> volts	<u>-250</u> volts
D-c Plate Current	<u>56</u> ma	<u>75</u> ma
D-c Grid Current, approx	<u>18</u> ma	<u>20</u> ma
Plate Input		<u>112</u> watts
Plate Dissipation		<u>25</u> watts
Peak R-F Grid Input voltage, approx	<u>250</u> volts	
Driving Power, approx.	<u>4</u> watts	
Plate Power Output	<u>90</u> watts	

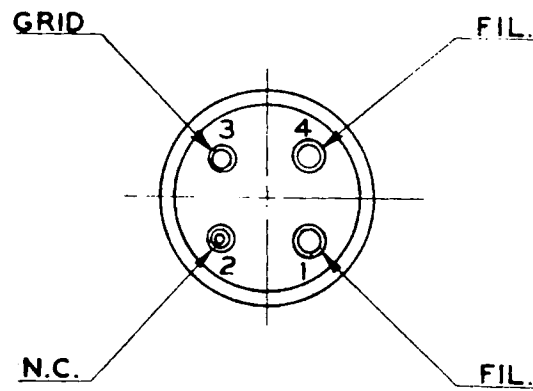
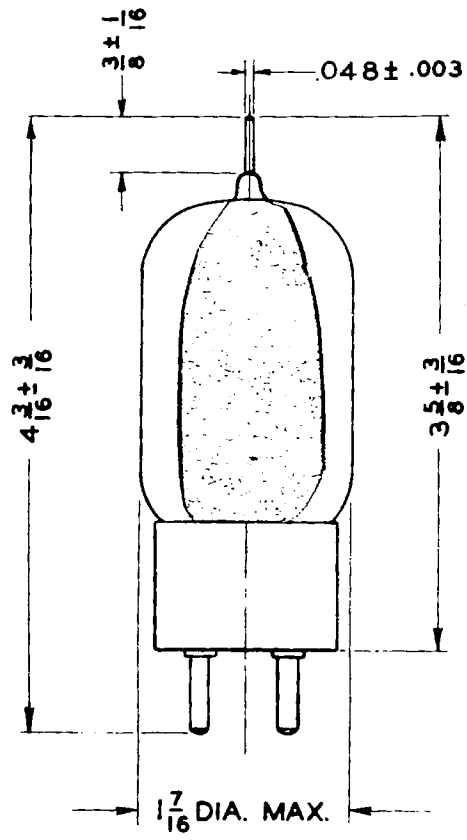
FREQUENCY LIMITS

The upper frequency limit at which the type 3C34 tube may be operated at the ratings given above is 60 Mc. It may be operated above this frequency if the plate voltage and power input are appropriately decreased as the operating frequency is increased and if adequate ventilation of the bulb is provided. The maximum values of plate voltage and power input at which the tube may be operated at the higher frequencies is given below in which these maximum values are expressed as per cent of the rated values given above.

	Class B	Service	
		Class C Plate Modulated	Class C Unmodulated
(a) Max. Frequency = 60 Mc	100 %	100%	100%
(b) ⊙ 125 Mc			
(c) ⊙ 225 Mc			

- (a) The frequency at which the normal maximum rated plate voltage and current given above are valid.
- (b) The frequency at which the most severe of the services permits acceptable operation at 75% of normal rated maximum plate voltage and input.
- (c) The frequency at which the most severe of the services permits acceptable operation at 50% of normal rated maximum plate voltage and input.

3C34



STD. SMALL 4-PIN CERAMIC BASE