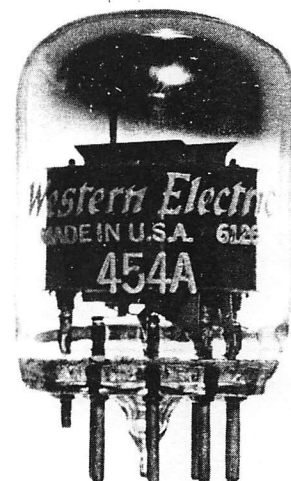
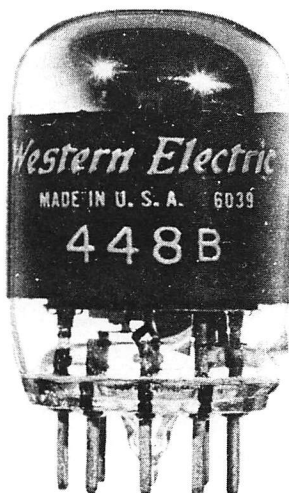
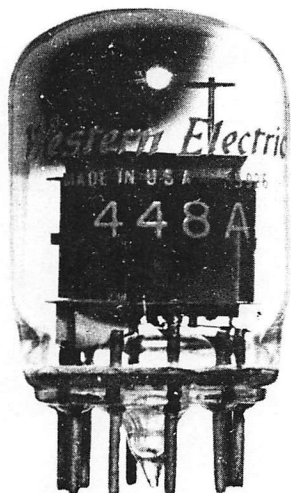


ELECTRON TUBE DATA SHEET  
**WESTERN ELECTRIC 448A, 448B, 454A ELECTRON TUBE**



DESCRIPTION

The 448A, 448B and 454A electron tubes are high figure of merit tetrodes of the indirectly heated cathode type. They have plate characteristics approaching those of a pentode and were designed primarily for use in the TH Radio Relay System.

These three tubes have the same electrical characteristics. The 448B has the same mechanical dimensions and appearance as the 448A except the bulb is aquadag coated to suppress fluorescence effects. The 454A is mechanically equivalent to the 448A except that pin #1 (plate) is shortened to permit its use in a special test probe. (See outline drawing - page 4).

CHARACTERISTICS

Heater Voltage	· · ·	6.3	volts
Cathode Current	· · ·	33.7	milliamperes
Transconductance	· · ·	31500	micromhos

$$\left( \begin{array}{l} E_b = 135 \text{ volts; } E_{c2} = 135 \text{ volts} \\ E_{cc1} = +9.5 \text{ volts; } R_k = 323 \text{ ohms} \end{array} \right)$$

GENERAL CHARACTERISTICS

Electrical Data

Heater Voltage . . . . .	6.3	volts
Heater Current . . . . .	450	milliamperes
Direct Interelectrode Capacitances (without external shield)		
Grid to Plate . . . . .	0.03	$\mu\mu\text{f}$
Input: g to (h + k + $g_2$ + i.s.) . . . . .	15.4	$\mu\mu\text{f}$
Output: p to (h + k + $g_2$ + i.s.) . . . . .	2.03	$\mu\mu\text{f}$

Mechanical Data

Cathode . . . . .	Coated Unipotential
Bulb . . . . .	T-9
Base . . . . .	See outline drawing Page 4
Mounting Position . . . . .	Any
Dimensions and pin connections shown in outline drawing on Page 4	

Maximum Ratings, Absolute System

Plate Voltage . . . . .	150	volts
Screen Grid Voltage . . . . .	150	volts
Control Grid Voltage . . . . .	-50	volts
Plate Dissipation . . . . .	6.0	watts
Screen Grid Dissipation . . . . .	1.75	watts
Control Grid Dissipation . . . . .	See Footnote *	
Cathode Current . . . . .	50	milliamperes
Heater - Cathode Voltage . . . . .	$\pm 50$	volts
Bulb Temperature . . . . .	130*	centigrade

Maximum Grid Circuit Resistance for:

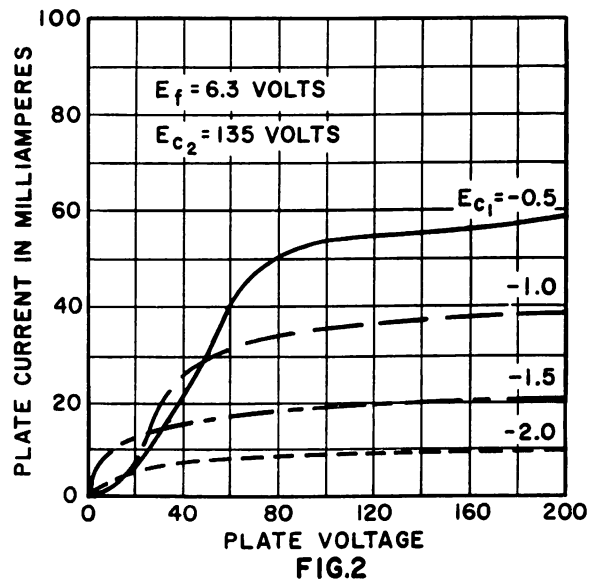
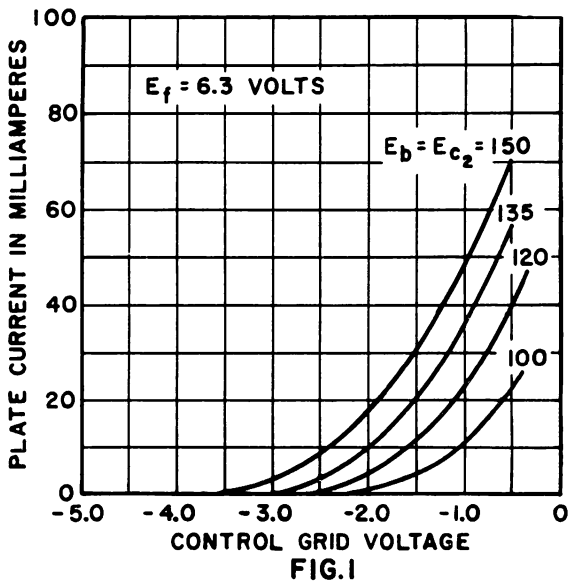
Fixed Bias . . . . .	0.05	megohm
Cathode Bias . . . . .	0.10	megohm

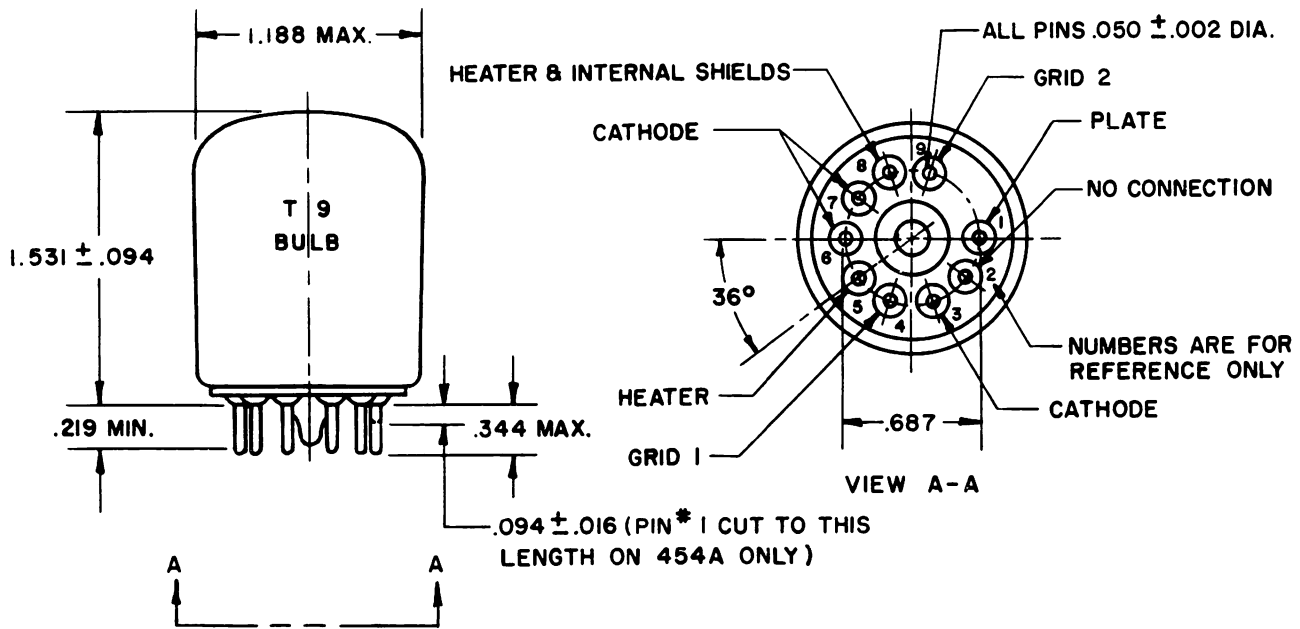
\* Operation with the control grid positive with respect to the cathode is not recommended.

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

Plate Voltage . . . . .	135	volts
Screen Grid Voltage . . . . .	135	volts
Control Grid Voltage (Note 1) . . . . .	+9.5	volts
Cathode Bias Resistor (Note 1) . . . . .	323	ohms
Plate Current . . . . .	24.9	milliamperes
Screen Grid Current . . . . .	8.8	milliamperes
Plate Resistance. . . . .	33000	ohms
Transconductance. . . . .	31500	micromhos

Note 1: Reference point for control grid voltage is the negative end of the cathode bias resistor.





A development of Bell Telephone Laboratories, the research laboratories of the American Telephone and Telegraph Company and the Western Electric Company.

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