

ELECTRON TUBE DATA SHEET  
 WESTERN ELECTRIC 407A ELECTRON TUBE



DESCRIPTION

The 407A is a 9-pin miniature double triode with separate indirectly heated cathodes. It is designed for use in amplifier, mixer, oscillator, multivibrator and clamp circuits. The useful frequency range extends through the VHF range.

CHARACTERISTICS

	<u>Parallel</u>	<u>Series</u>	
Heater Voltage . . . . .	20	or 40	volts
Plate Current per Section . . .	$E_b = 150$ volts { $E_c = -2.0$ volts {		8.2 milliamperes
Transconductance per Section . .			5500 micromhos

FILE: MINIATURE SECTION

GENERAL CHARACTERISTICS

<u>Electrical Data</u>	<u>Parallel</u>	<u>Series</u>	
Heater Voltage, A-C or D-C (Note 1) . . . . .	20	40	volts
Heater Current . . . . .	100	50	milliamperes
Direct interelectrode Capacitances . . . . .	without	with	
	external shield.	external shield	
		(JEDEC #315)	
Grid-to-Plate per Section . . . . .	1.3	* 1.3	μμf
Input per Section . . . . .	2.2	* 2.3	μμf
Output per Section . . . . .	1.0	* 1.3	μμf
Plate-to-Plate . . . . .	0.04	**0.03	μμf
Plate-to-Plate (maximum) . . . . .	0.11	**0.10	μμf

Mechanical Data

Cathode . . . . .	Coated unipotential
Bulb . . . . .	T 6½
Base . . . . .	Small button, 9-pin
Mounting Position . . . . .	Any

Dimensions and pin connections shown in outline drawing on page 4.

MAXIMUM RATINGS, Absolute System (Note 2)

Values are for each section

Plate Voltage . . . . .	330	volts
Plate Dissipation . . . . .	1.6	watts
Plate Current . . . . .	20	milliamperes
Heater Cathode Voltage . . . . .	130	volts
Maximum Grid Circuit Resistance for		
Fixed Bias . . . . .	1	megohm
Cathode Bias . . . . .	2	megohm

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS - Class A<sub>1</sub> Amplifier

Values are for each section

Plate Voltage . . . . .	150	150	volts
Grid Voltage . . . . .	-2.0	-	volts
Cathode Resistor . . . . .	-	240	ohms
Plate Current . . . . .	8.2	8.2	milliamperes
Transconductance . . . . .	5500	5500	micromhos
Amplification Factor . . . . .	35	35	
Grid Voltage (Approximate) for			
Plate Current of 10 microamperes . . . . .	- 8	-	volts

\* Pin 5 and external shield (EIA #315) connected to cathode pin of section under test. Elements of other section grounded.

\*\* Pin 5 and external shield (EIA #315) connected to ground with other elements.

TYPICAL OPERATING CONDITIONS - Class AB<sub>1</sub> Amplifier

Plate Voltage . . . . .	200	300	volts
Cathode Resistor (Cathodes Tied Together). . . . .	400	800	ohms
Peak A-F Grid-to-Grid Voltage. . . . .	9.0	20	volts
Zero Signal Plate Current per Section . . . . .	5.0	4.7	milliamperes
Maximum Signal Plate Current per Section . . . . .	5.6	6.0	milliamperes
Load Impedance, Plate-to-Plate . . . . .	30000	40000	ohms
Signal Power Output. . . . .	0.40	0.95	watt
Total Harmonic Distortion Less Than . . . . .	5	10	per cent

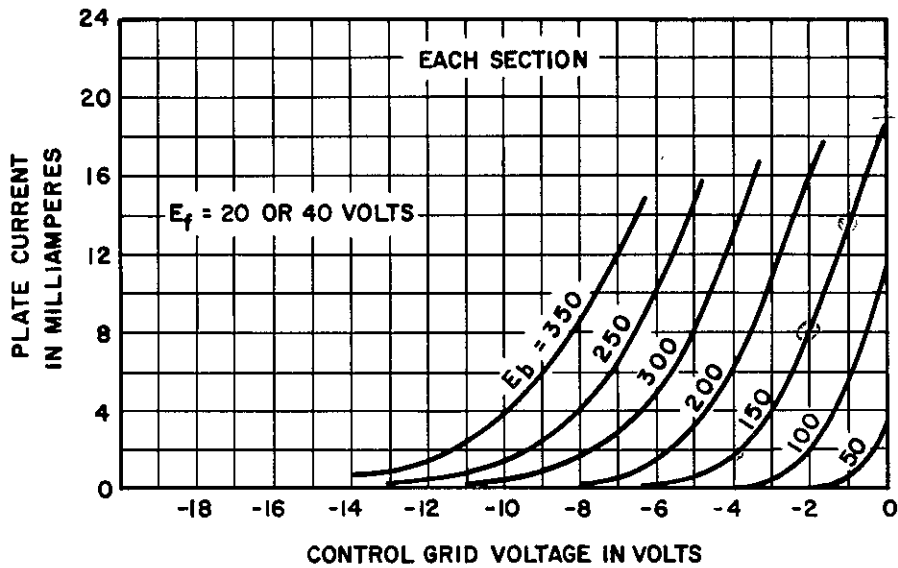


FIG. 1

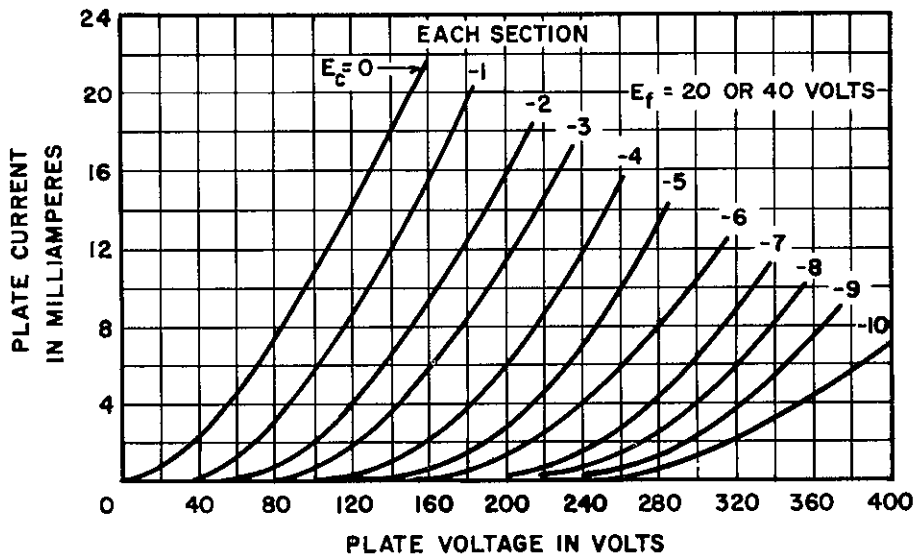


FIG. 2

Note 1: For optimum tube life the heater voltage specified (20 or 40 volts) should be regulated to  $\pm 5\%$ .

Note 2: In the "Absolute System" the maximum ratings specified are limiting values above which the serviceability of the device may be impaired from the viewpoint of life and satisfactory performance. Maximum ratings, as such, do not constitute a set of operating conditions and all values may not, therefore, be attained simultaneously.

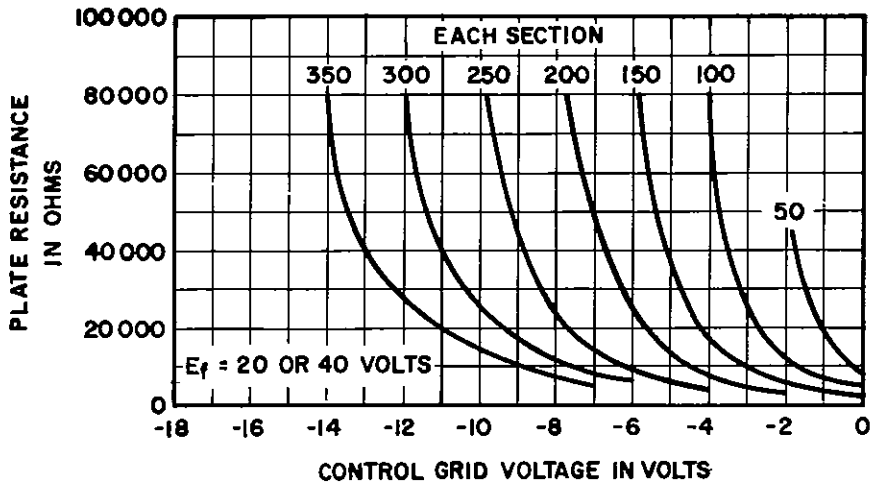


FIG. 3

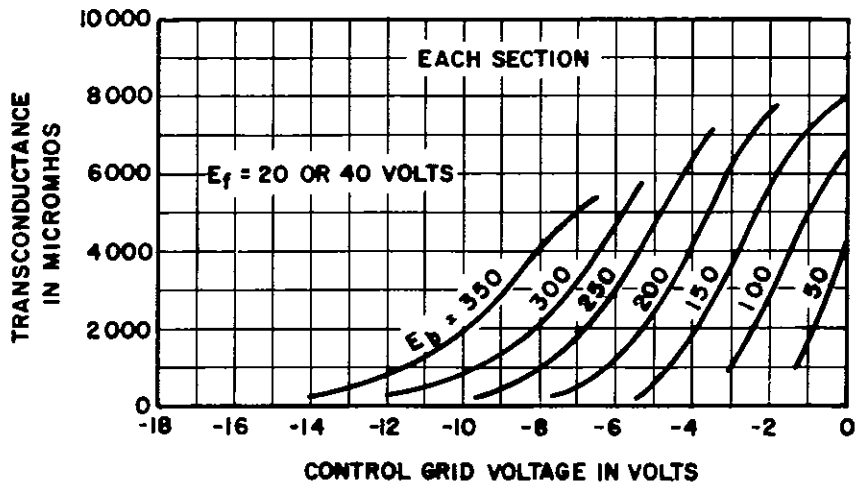
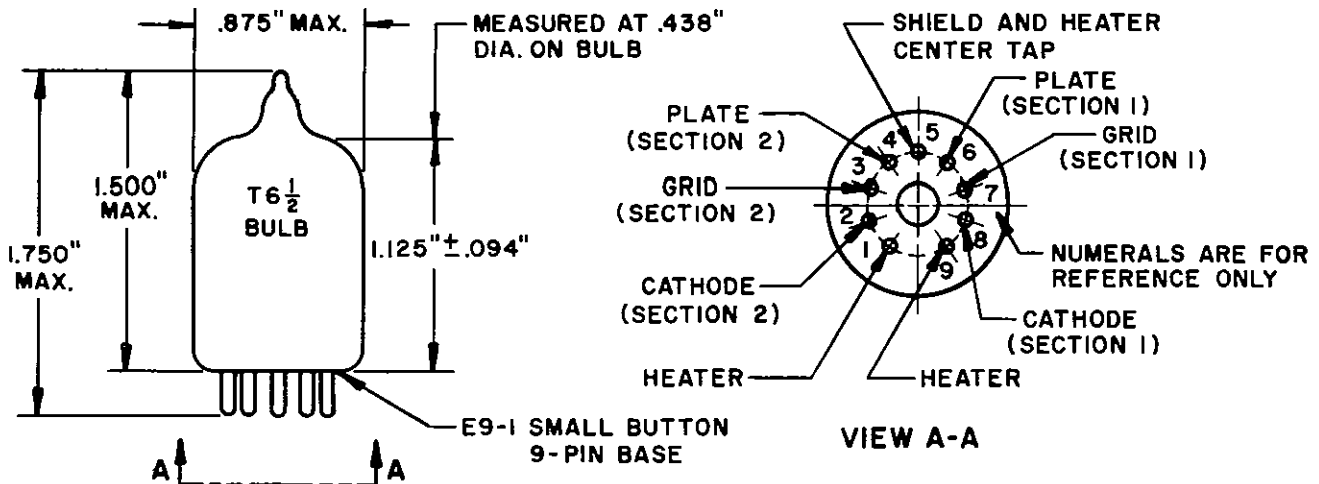


FIG. 4



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