

ELECTRON TUBE DATA SHEET  
WESTERN ELECTRIC 396A\* ELECTRON TUBE



DESCRIPTION

The 2C51/396A\* is a 9-pin miniature double triode having separate indirectly heated cathodes. It is designed for use in amplifier, mixer, oscillator, multivibrator and clamp circuits. The useful frequency extends through the VHF range.

CHARACTERISTICS

Heater Voltage . . . . .	6.3 volts
Plate Current per Section	} $E_b = 150$ volts; $E_c = -2.0$ volts {
Transconductance per Section	
	5500 micromhos

GENERAL CHARACTERISTICSELECTRICAL DATA

Heater Voltage . . . . .		6.3 volts
Heater Current . . . . .		300 milliamperes
Direct Interelectrode Capacitances . . . . .	without	with
	external shield	external shield
		(RETMA #315)
Grid to Plate per Section . . . . .	1.3	*1.3 uuf
Input per Section: g to (h+k+i.s.) . . . . .	2.2	*2.3 uuf
Output per Section: p to (h+k+i.s.) . . . . .	1.0	*1.3 uuf
Plate-to-Plate . . . . .	0.04	**0.03 uuf
Plate-to-Plate, Maximum . . . . .	0.11	**0.10 uuf

MECHANICAL DATA

Cathode . . . . .	Coated Unipotential
Bulb . . . . .	T6 1/2
Base . . . . .	Small Button, 9-pin
Mounting Position . . . . .	Any
Dimensions and pin connections shown in outline drawing on Page 4	

MAXIMUM RATINGS, Design-Center Values (Each Section)

Plate Voltage . . . . .	300 volts
Plate Dissipation . . . . .	1.5 watts
Plate Current . . . . .	18 milliamperes
Grid Dissipation . . . . .	0.1 watt
Heater-Cathode Voltage . . . . .	90 volts
Bulb Temperature . . . . .	120° centigrade

## Maximum Grid Circuit Resistance for

Fixed Bias . . . . .	1 megohm
Cathode Bias . . . . .	2 megohms

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS - CLASS A<sub>1</sub> AMPLIFIER

(Each Section)

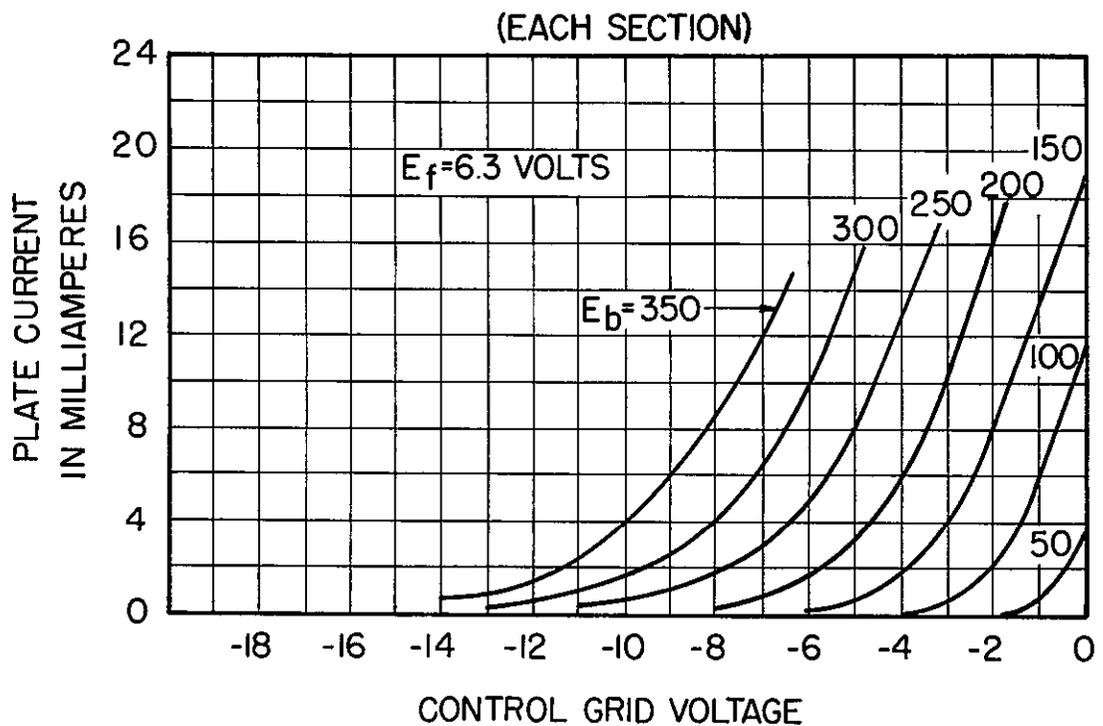
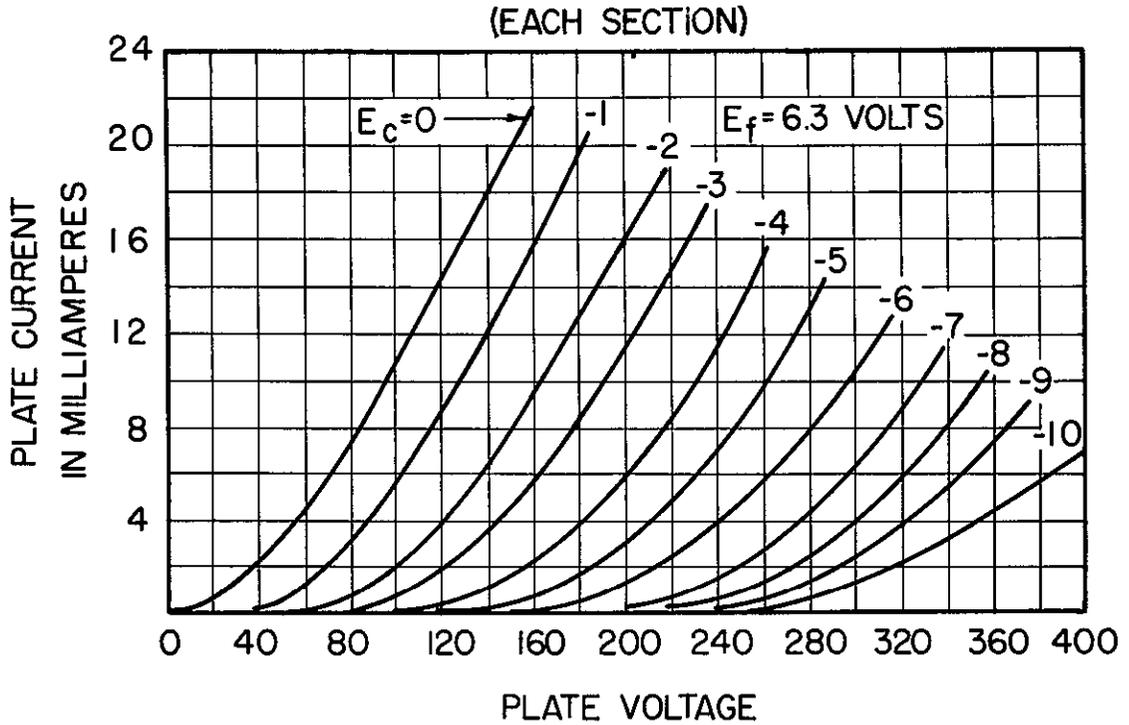
Plate Voltage . . . . .	150	150 volts
Grid Voltage . . . . .	-2.0	--- volts
Cathode Resistor . . . . .	---	240 ohms
Plate Current . . . . .	8.2	8.2 milliamperes
Transconductance . . . . .	5500	5500 micromhos
Amplification Factor . . . . .	35	35
Grid Voltage (approximate) for		
Plate Current of 10 microamperes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

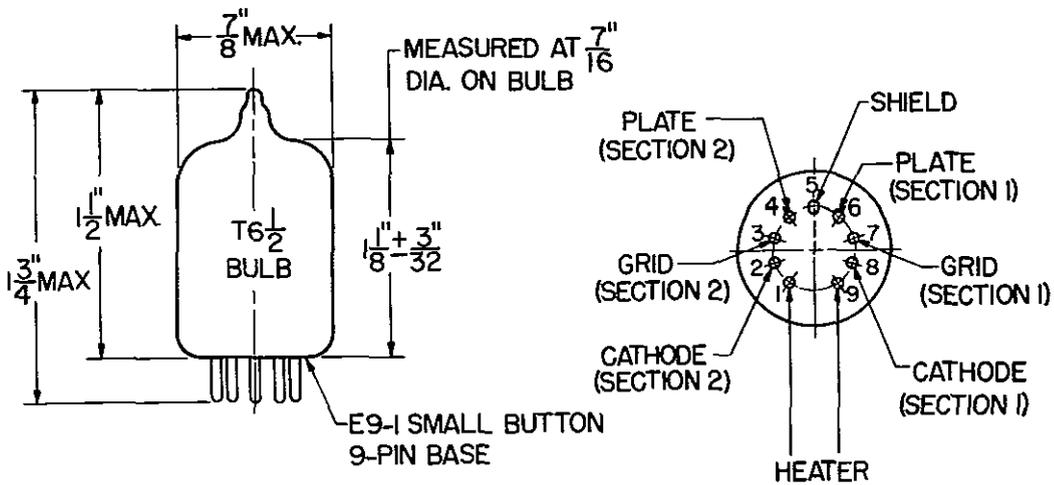
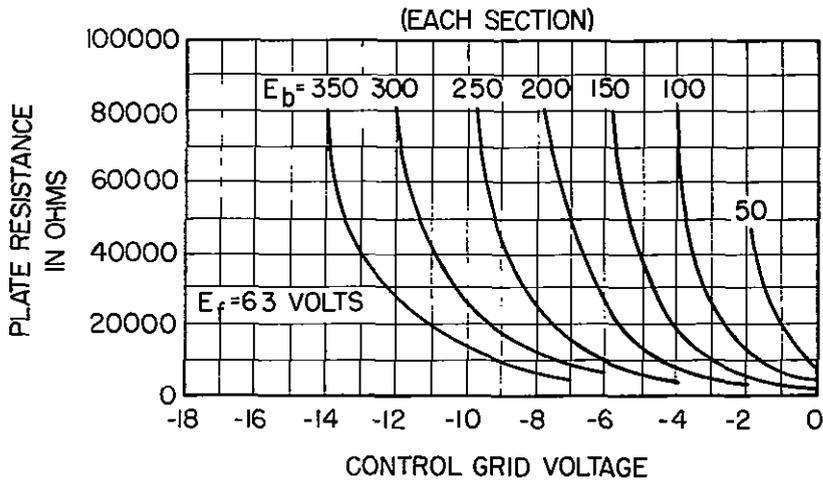
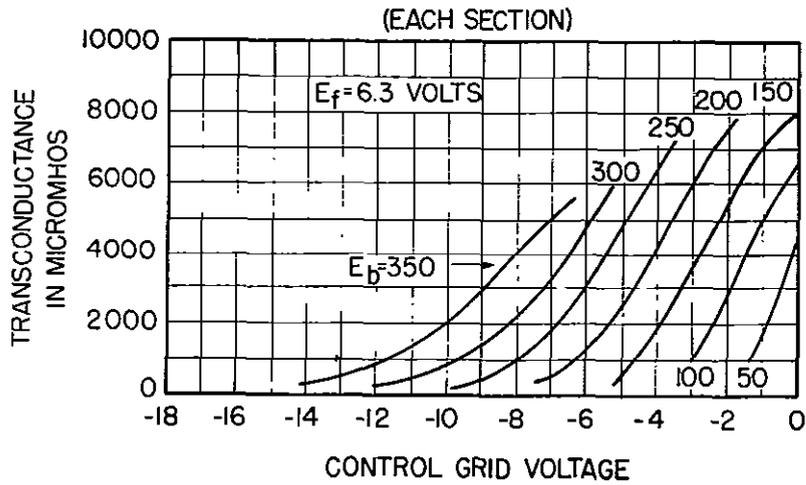
\* Pin 5 and external shield (RETMA #315) connected to cathode pin of section under test. Elements of other section grounded.

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

TYPICAL OPERATING CONDITIONS - CLASS AB<sub>1</sub> PUSH-PULL 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 percent





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