

**PENTODE  
MINIATURE**

*Western Electric*

**DESCRIPTION**

The 5590/401A\* is a 7-pin miniature pentode having an indirectly heated cathode. It is designed for use in amplifier circuits at high and ultra high frequencies.

**CHARACTERISTICS**

|   |                  |
|---|------------------|
| Heater Voltage . . . . .  | 6.3 volts        |
| Plate Current<br>( $E_b = E_{c2} = 90$ volts, $E_{c1} = -5.0$ volts) . . . . .    | 3.9 milliamperes |
| Transconductance<br>( $E_b = E_{c2} = 90$ volts, $E_{c1} = -5.0$ volts) . . . . . | 2000 micromhos   |

ELECTRON TUBE DATA SHEET  
FILE: MINIATURE SECTION  
11-47

**401A\***  
**PENTODE**

**GENERAL CHARACTERISTICS**

**ELECTRICAL DATA**

|                                    |                         |                      |
|------------------------------------|-------------------------|----------------------|
| Heater Voltage                     |                         | 6.3 volts            |
| Heater Current                     |                         | 150 milliamperes     |
| Direct Interelectrode Capacitances | without external shield | with external shield |
|                                    |                         | (RMA #316)           |
| Grid to Plate (max.)               | 0.017                   | *0.010 uuf           |
| Input                              | 3.2                     | * 3.4 uuf            |
| Output                             | 2.0                     | * 2.9 uuf            |

**MECHANICAL DATA**

|   |                        |
|---|------------------------|
| Cathode   | Coated Unipotential    |
| Bulb  | T 5½                   |
| Base  | Miniature Button 7-pin |
| Mounting Position   | Any                    |
| Dimensions and pin connections shown in outline drawing on Page 4 |                        |

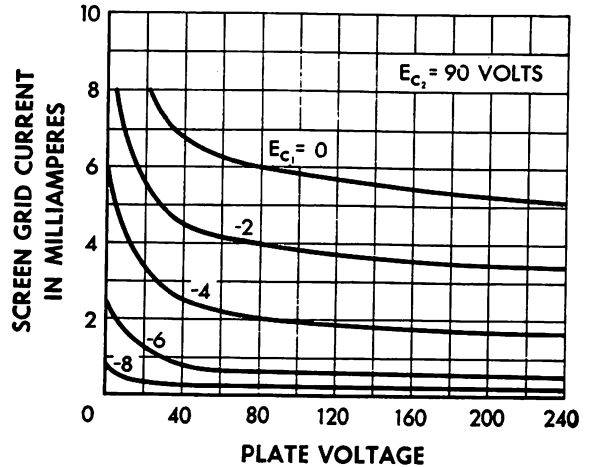
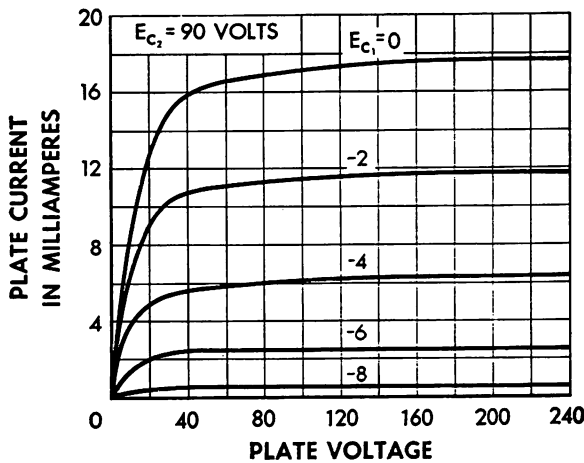
**MAXIMUM RATINGS, Design-Center Values**

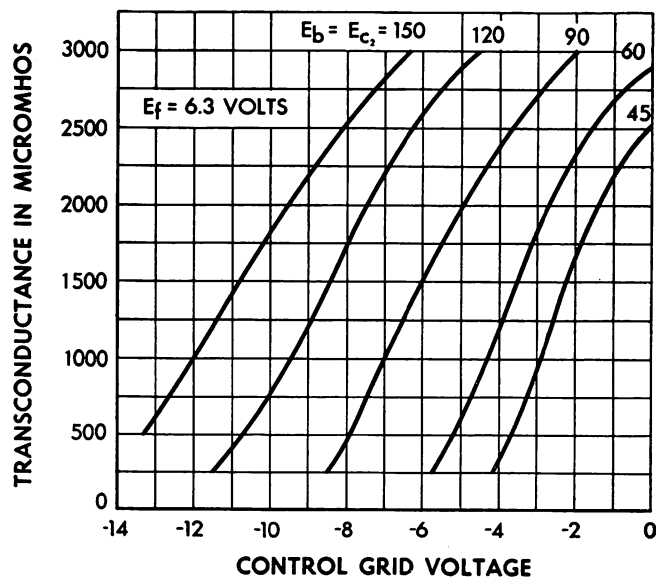
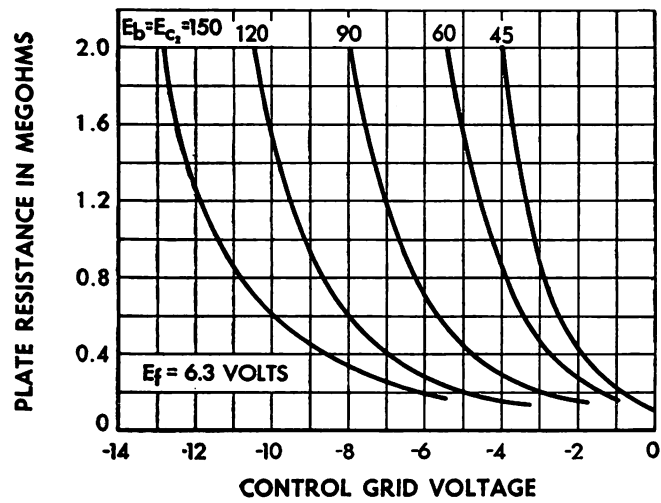
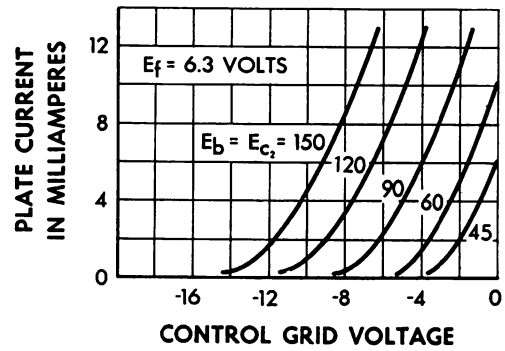
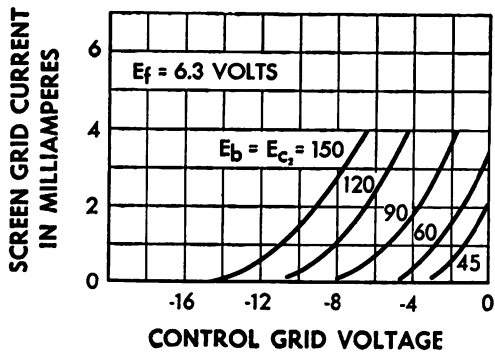
|                        |                 |
|------------------------|-----------------|
| Plate Voltage          | 180 volts       |
| Screen Voltage         | 140 volts       |
| Plate Dissipation      | 1.7 watts       |
| Screen Dissipation     | 0.5 watts       |
| Cathode Current        | 18 milliamperes |
| Heater-Cathode Voltage | 90 volts        |
| Bulb Temperature       | 120 centigrade  |

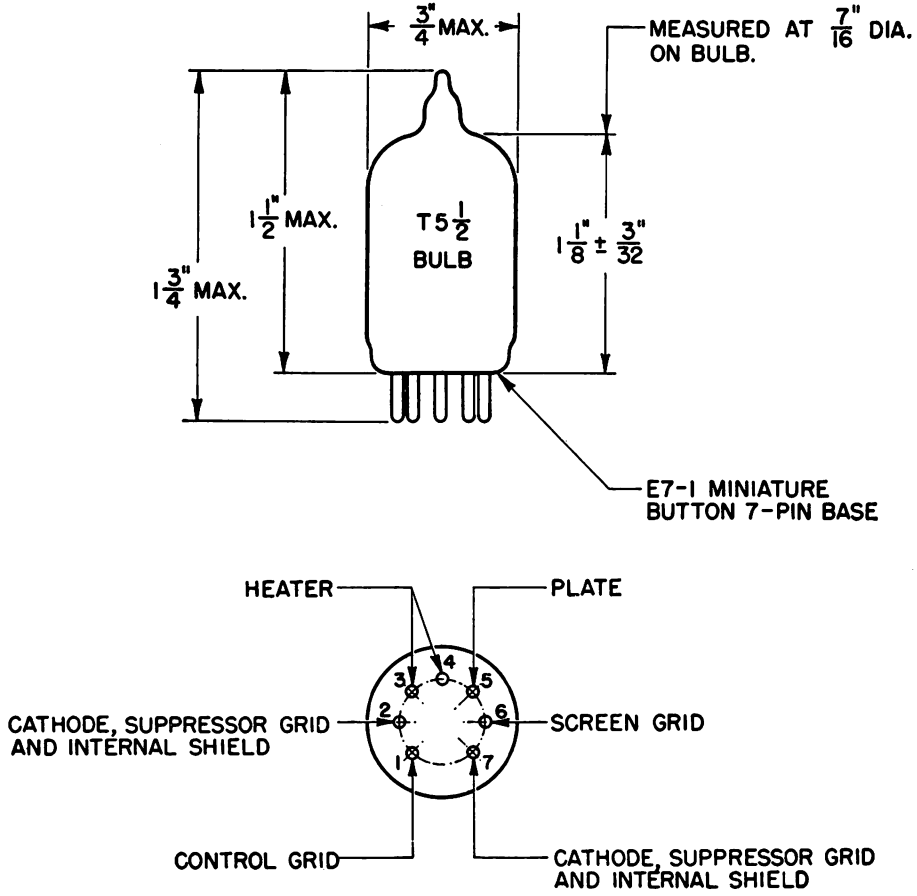
**TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS, CLASS A<sub>1</sub> AMPLIFIER**

|   |       |       |       |                  |
|---|-------|-------|-------|------------------|
| Plate Voltage   | 45    | 90    | 90    | 120 volts        |
| Screen Grid Voltage   | 45    | 90    | 90    | 120 volts        |
| Control Grid Voltage  | -1.5  | -5.0  | ..... | -7.0 volts       |
| Cathode Bias Resistor   | ..... | ..... | 820   | ..... ohms       |
| Plate Current   | 3.0   | 3.9   | 4.3   | 5.1 milliamperes |
| Screen Grid Current   | 1.1   | 1.3   | 1.4   | 1.8 milliamperes |
| Plate Resistance  | 0.29  | 0.45  | 0.41  | 0.41 megohm      |
| Transconductance  | 2000  | 2000  | 2100  | 2200 micromhos   |
| Grid Voltage (approximate) for Plate Current of 10 microamperes | -5.3  | -10.6 | ..... | -14.3 volts      |

\*External shield connected to cathode pins 2 and 7







*Western Electric*

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