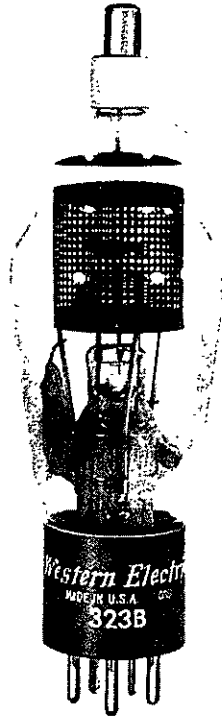


ELECTRON TUBE DATA SHEET
WESTERN ELECTRIC 323B ELECTRON TUBE



ONLY

DESCRIPTION

The 323B is a three-electrode mercury-vapor and gas-filled thyatron with a negative control characteristic. This tube is designed for use in regulated or controlled rectifiers.

MAXIMUM RATINGS

| | |
|-----------------------------------|-------------|
| Peak Anode Voltage | 1250 volts |
| Average Cathode Current | 1.5 amperes |

FILE: THYRATRON SECTION

MAXIMUM RATINGS, Absolute Values

| | |
|--------------------------------------------------------------------------|------------------------|
| Peak Anode Voltage | |
| Inverse | 1250 volts |
| Forward | 1250 volts |
| Cathode Current | |
| Peak | 6 amperes |
| Average | 1.5 amperes |
| Surge (maximum duration 0.1 second) | 120 amperes |
| Averaging Time | 5 seconds |
| Negative Grid Voltage | |
| Before Conduction | 500 volts |
| During Conduction | 10 volts |
| Positive Grid Current, Average (averaging time - one cycle) | .010 amperes |
| Condensed Mercury Temperature Limits ¹ | -55 to + 80 centigrade |

ELECTRICAL DATA

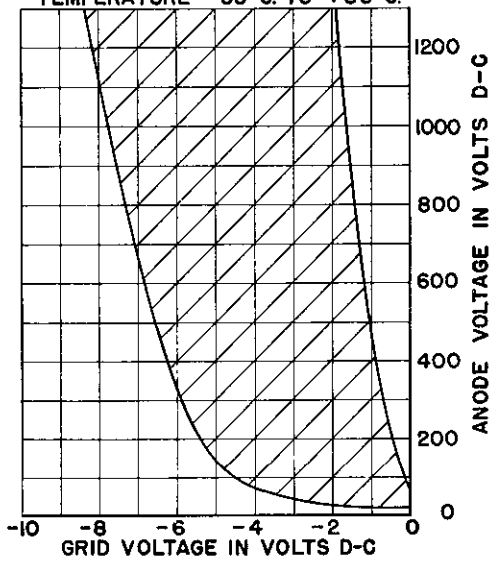
| | <u>Min.</u> | <u>Bogey</u> | <u>Max.</u> | |
|---------------------------------------------------------------------------------------|-------------|--------------|-------------|--------------|
| Filament Voltage | 2.37 | 2.5 | 2.62 | volts |
| Filament Current at 2.5 Volts | --- | 7.0 | 7.75 | amperes |
| Filament Heating Time Required | 15 | --- | --- | seconds |
| Anode to Grid Capacitance | --- | 1.8 | --- | uuf |
| Grid to Filament Capacitance | --- | 5.0 | --- | uuf |
| Deionization Time, Approximate ² | | | | |
| $E_{bb}=1250$ volts; $THg=80C$; $I_b=6$ amperes; | | | | |
| $E_{cc}=-18$ volts; $R_g=20,000$ ohms | --- | 1200 | --- | microseconds |
| Ionization Time, Approximate ³ | | | | |
| $E_{bb}=100$ volts; $THg=40C$; grid overvoltage=5 volts | --- | 35 | --- | microseconds |
| $E_{bb}=100$ volts; $THg=80C$; grid overvoltage=25 volts | --- | 0.5 | --- | microsecond |
| Anode Voltage Drop | --- | 15 | --- | volts |
| Critical Grid Current at 220 Anode Volts | --- | --- | 5 | microamperes |
| Change in Critical Grid Voltage at 500 Anode Volts from +20 to +80 THg | --- | 0.2 | --- | volt |

MECHANICAL DATA

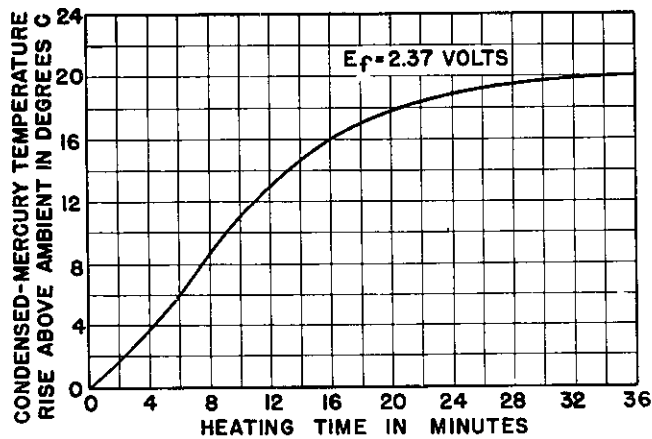
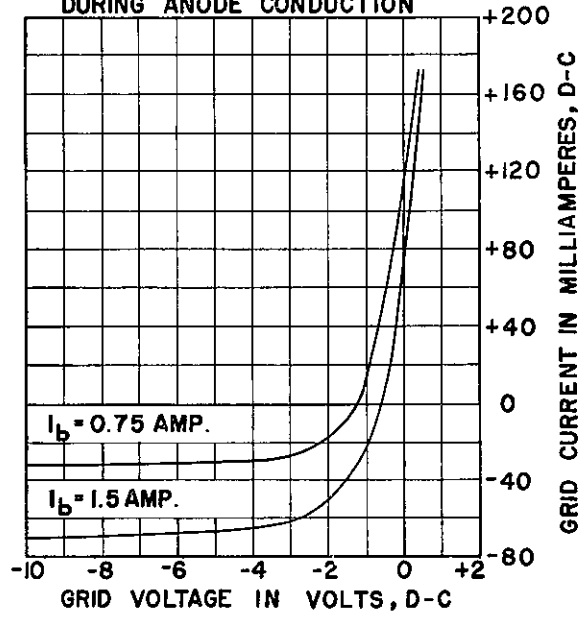
| | |
|------------------------------------------------------------------------------|--------------------|
| Type of Cooling | Convection |
| Equilibrium Condensed Mercury Temperature Rise above Ambient, Approximate | |
| At Full Load | 30 centigrade |
| At No Load | 20 centigrade |
| Mounting Position | Vertical-base down |
| Net Weight, Approximate | 3 ounces |
| Dimensions and pin connections shown in outline drawing on Page 4 | |

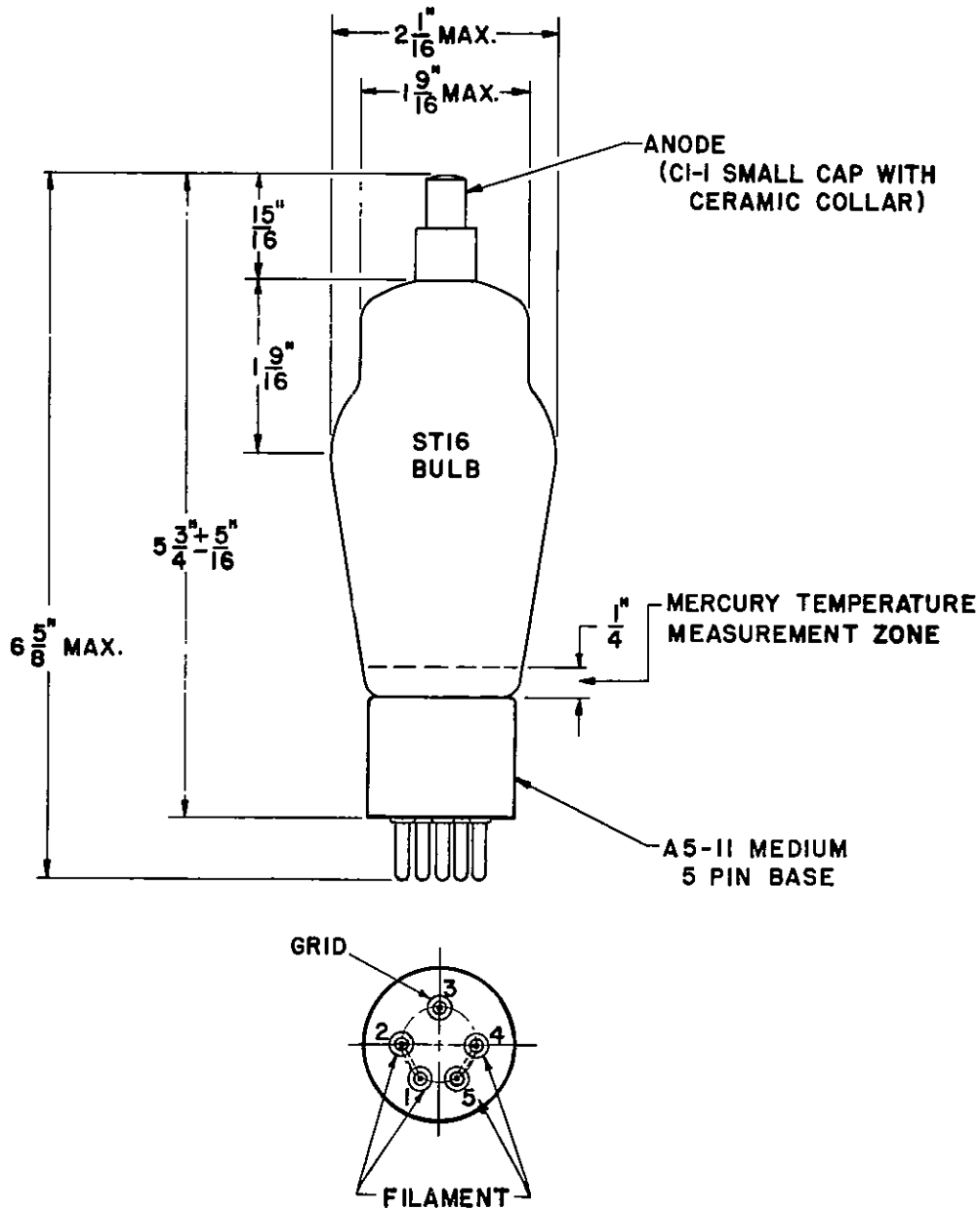
1. For starting conditions only. Equilibrium operation is limited to +20°C minimum condensed mercury temperature.
2. Deionization time decreases with an increase in negative grid voltage or with a decrease in (a) condensed mercury temperature (THg), (b) grid resistance or (c) anode current immediately preceding the end of conduction.
3. Ionization time decreases with an increase in (a) anode voltage, (b) condensed mercury temperature (THg) or (c) grid overvoltage. Grid overvoltage is defined as the magnitude by which the applied voltage exceeds, in a positive direction, the critical grid voltage value. Critical grid voltage is the instantaneous value of grid voltage at the time when anode current starts to flow.

TYPICAL CONTROL CHARACTERISTICS.
 SHADED AREA SHOWS RANGE OF CHARACTERISTICS, CONDENSED MERCURY TEMPERATURE -55°C . TO $+80^{\circ}\text{C}$.



TYPICAL GRID CURRENT CHARACTERISTICS DURING ANODE CONDUCTION





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