5964GEDØ



Electronic TUBES

# 5964

## TWIN TRIODE

### FOR COMPUTER APPLICATIONS

**7-PIN MINIATURE** **MEDIUM-MU**

## DESCRIPTION AND RATING

The 5964 is a miniature, medium-mu twin triode for use as a frequency divider in computer applications. In this service it will maintain its emission capabilities after long periods of operation under cutoff conditions.

Intended primarily for computer applications, the tube is not in general superior to other types for conventional amplifier applications, nor should it be used in applications critical as to microphonics or plate-current unbalance.

### GENERAL

**ELECTRICAL**

Cathode—Coated Unipotential

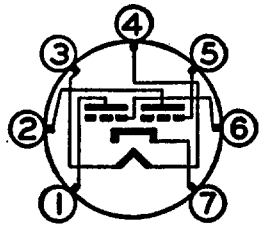
| | | |
|---|---|---|
| Heater Voltage, AC or DC | 6.3 ±10% | Volts |
| Heater Current | 0.45 | Amperes |
| Direct Interelectrode Capacitances, approximate* | | |
| Grid to Plate, Each Section | 1.3 | μμf |
| Input, Each Section | 2.1 | μμf |
| Output, Each Section | 0.4 | μμf |
| Grid to Grid, maximum | 0.4 | μμf |

* Without external shield.

**MECHANICAL**

Mounting Position—Any
Envelope—T-5½, Glass
Base—E7-1, Miniature Button 7-Pin

**BASING DIAGRAM**

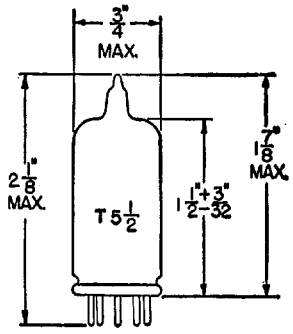



RETMA 7BF

**TERMINAL CONNECTIONS**

Pin 1—Plate (Section 2)
Pin 2—Plate (Section 1)
Pin 3—Heater
Pin 4—Heater
Pin 5—Grid (Section 1)
Pin 6—Grid (Section 2)
Pin 7—Cathode

**PHYSICAL DIMENSIONS**




RETMA 5-2

GENERAL ELECTRIC

## MAXIMUM RATINGS

### ABSOLUTE MAXIMUM VALUES, EACH SECTION

| | | |
|---|---|---|
| Plate Voltage | 250 | Volts |
| Positive DC Grid Voltage | 0 | Volts |
| Negative DC Grid Voltage | 100 | Volts |
| Peak Negative Grid Voltage | 200 | Volts |
| Plate Dissipation | 1.5 | Watts |
| Grid Input | 0.1 | Watts |
| DC Cathode Current | 15 | Milliamperes |
| Peak Cathode Current | 75 | Milliamperes |
| Heater-Cathode Voltage | | |
| Heater Positive with Respect to Cathode | 90 | Volts |
| Heater Negative with Respect to Cathode | 90 | Volts |
| Grid Circuit Resistance | | |
| With Fixed Bias | 0.5 | Megohms |
| With Cathode Bias | 1.0 | Megohms |
| Bulb Temperature at Hottest Point | 150 | C |

## CHARACTERISTICS AND TYPICAL OPERATION

### AVERAGE CHARACTERISTICS†

| | | |
|---|---|---|
| Plate Voltage | 100 | Volts |
| Cathode-Bias Resistor | 50 | Ohms |
| Amplification Factor | 39 | |
| Plate Resistance, approximate | 6500 | Ohms |
| Transconductance | 6000 | Micromhos |
| Plate Current | 9.5 | Milliamperes |

### COMPUTER SERVICE, EACH SECTION

| | | | |
|---|---|---|---|
| Plate-Supply Voltage | 150 | 150 | Volts |
| Plate-Load Resistance | 20,000 | 20,000 | Ohms |
| Grid-Supply Voltage | −10 | 0 | Volts |
| Grid Resistance | 47,000 | 47,000 | Ohms |
| Plate Current | | 5.0 | Milliamperes |
| Plate Current, maximum | 0.2 | .... | Milliamperes |

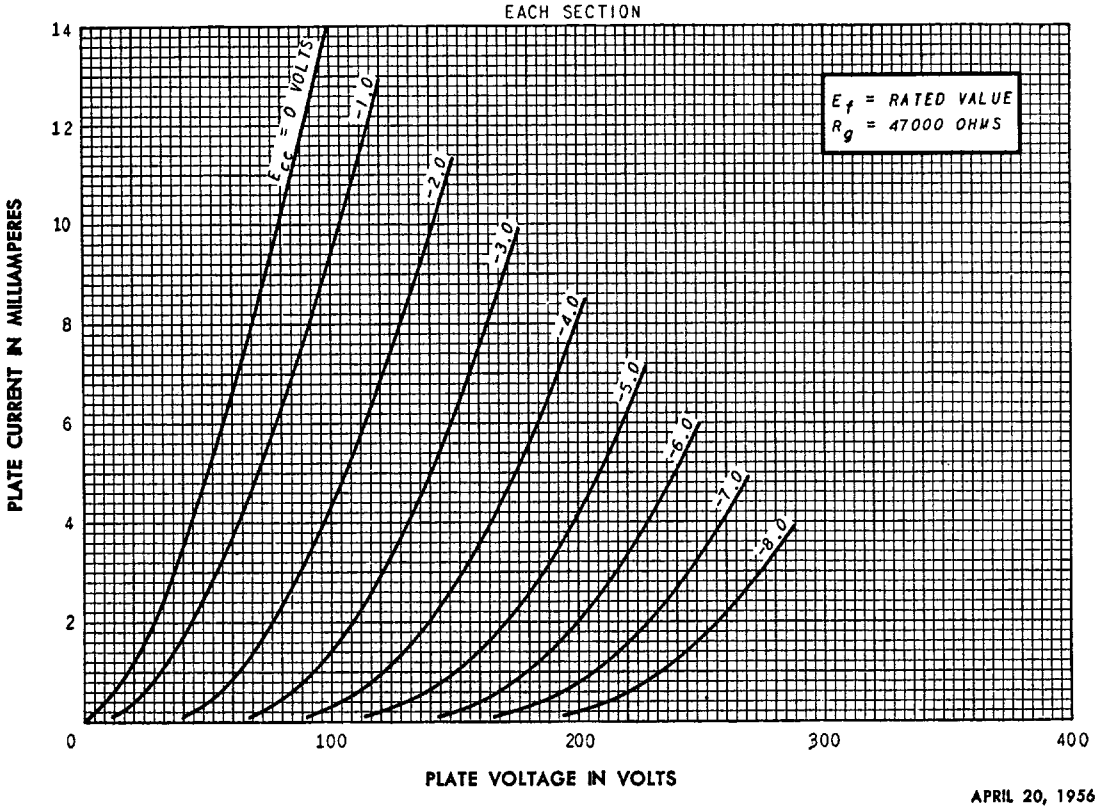
† Values are for each section with specified plate voltage applied to both sections.

## INITIAL CHARACTERISTICS LIMITS

| | Minimum | Maximum | |
|---|---|---|---|
| Zero-Bias Plate Current, Each Section | | | |
| Ef = 6.3 volts, Ebb = 150 volts, $R_L$ = 20,000 ohms, Ecc = 0 volts, Rg = 47,000 ohms | 4.3 | 5.7 | Milliamperes |
| Plate Current Cutoff, Each Section | | | |
| Ef = 6.3 volts, Ebb = 150 volts, $R_L$ = 20,000 ohms, Ecc = −10 volts, Rg = 47,000 ohms | 0 | 0.2 | Milliamperes |

## AVERAGE PLATE CHARACTERISTICS

EACH SECTION




APRIL 20, 1956