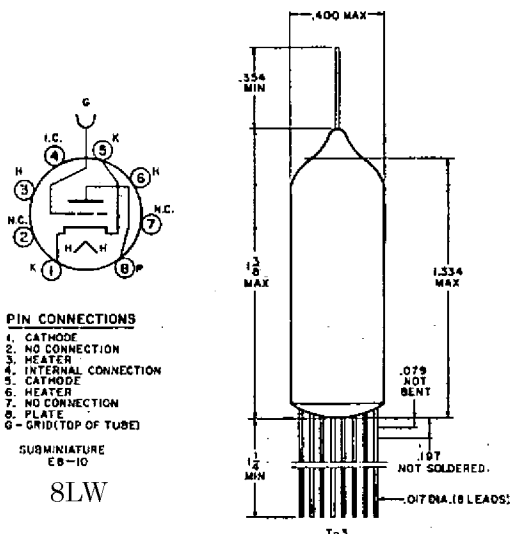


# AMPEREX TUBE TYPE 8254/EC1000

## TENTATIVE DATA

The Amperex 8254/EC1000 is a Premium Quality, subminiature, frame grid Triode designed for use as a high-frequency probe tube. It features a transconductance of 14,500  $\mu$ mhos at 14 ma, and a maximum grid current of only .01 micro-ampere. The tube has a resonant frequency of 400 mc, while the input impedance at 250 mc is 450 ohms. The input grid is brought out through the top.



## GENERAL CHARACTERISTICS

### MECHANICAL

Bulb  
Base  
Dimensions  
Mounting Position

Subminiature, T-3  
See outline drawing, E8-10  
See outline drawing  
Any

### ELECTRICAL

Cathode  
Heater Arrangement  
Heater Voltage (AC or DC)  
Heater Current

Indirectly heated  
Parallel supply  
6.3 volts  
185 ma

### Interelectrode Capacitance (Without External Shield)

|                  | Symbol   | Avg. Values |
|------------------|----------|-------------|
| Grid to Cathode  | $C_{gk}$ | 3.5 pf      |
| Grid to Plate    | $C_{gp}$ | 1.9 pf      |
| Grid to Filament | $C_{gf}$ | 0.05 pf     |
| Plate to Cathode | $C_{pk}$ | 0.5 pf      |
| Plate to Heater  | $C_{pn}$ | 0.3 pf      |

# 8254/EC1000

## MAXIMUM RATINGS, ABSOLUTE VALUES

|                                    | Symbol   | Value      |
|------------------------------------|----------|------------|
| Plate Voltage, Zero Plate Current  | $E_{bb}$ | 275 volts  |
| Plate Voltage                      | $E_b$    | 110 volts  |
| Plate Dissipation                  | $P_p$    | 1.5 watts  |
| Grid Voltage                       | $e_c$    | -55 volts  |
| Cathode Current                    | $I_k$    | 22 ma      |
| Voltage Between Heater and Cathode | $E_{hk}$ | 55 volts   |
| Bulb Temperature                   |          | 170°C      |
| Grid Resistance                    |          | See note 4 |

## OPERATING CHARACTERISTICS

| Parameter                                           | Operating Conditions |                |                |                   | Values |      |            |                  | Comment                 |
|-----------------------------------------------------|----------------------|----------------|----------------|-------------------|--------|------|------------|------------------|-------------------------|
|                                                     | $E_f$<br>volts       | $E_b$<br>volts | $E_c$<br>volts | $I_{b0}$<br>volts | Avg.   | Min. | Max.       | Units            |                         |
| Filament Current, $I_f$                             | 6.3                  | -              | -              | -                 | 185    | -    | -          | ma               | -                       |
| Plate Current, $I_b$                                | 6.3                  | 80             | -2             | -                 | 14     | -    | -          | ma               | -                       |
| Transconductance, $G_m$                             | 6.3                  | 80             | -              | 14                | 14500  | -    | -          | $\mu\text{mhos}$ | -                       |
| Amplification Factor, $\mu$                         | 6.3                  | 80             | -              | 14                | 24     | -    | -          | -                | -                       |
| High Frequency Input Impedance                      | 6.3                  | 80             | -2             | -                 | 450    | -    | -          | ohms             | at 250 mc               |
| Grid Current, $I_g$                                 | 6.3                  | 80             | -2             | -                 | -      | -    | $-10^{-8}$ | amp              | See Note 3              |
| Input Resonant Frequency                            | 6.3                  | 80             | -2             | -                 | 400    | -    | -          | mc               |                         |
| Hum                                                 | 6.3                  | -              | -              | -                 | -      | -    | 1          | mv               | See Notes 1 and 2       |
| Noise (Flat response filter 0 to 10,000 cps)        | 6.3                  | 80             | -2             | -                 | -      | -    | 1          | mv               | See Note 2 <sup>1</sup> |
| Microphonics (Acceleration; peak value 4 g, 50 cps) | 6.3                  | 80             | -2             | -                 | -      | -    | 1          | mv               | See Note 2              |

<sup>1</sup>  $R_g = 500 \text{ K ohms}$ ,  $R_k = 100 \text{ ohms}$  at 60 cps. The heater is grounded at its center. Frequency of heater supply = 60 cps  $\pm 3\%$ . 500 cps flat response low pass filter.

<sup>2</sup> The noise voltage refers to the equivalent RMS value at grid.

<sup>3</sup> Maximum value at 1000 hours.

<sup>4</sup> The grid resistance,  $R_g$ , should be restricted to a value which will not permit maximum ratings to be exceeded at a grid current of  $-10^{-8}$  ampere. To calculate the maximum permissible value of  $R_g$ , the DC feedback of the operating circuit may be taken into account. In practice the maximum value of  $R_g$  will also be defined by the required current stability and the permissible hum level.

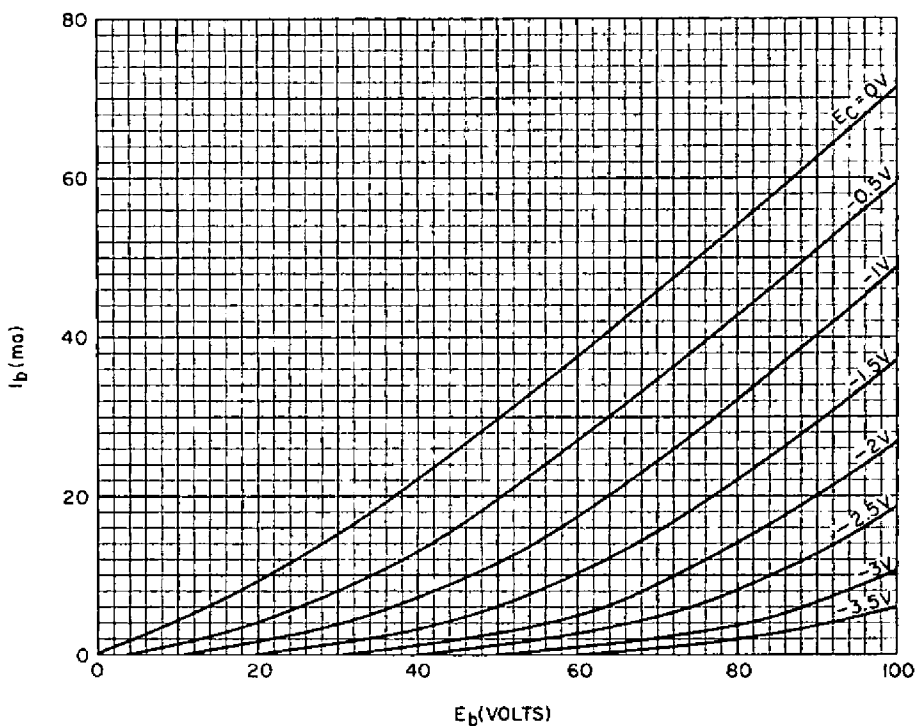
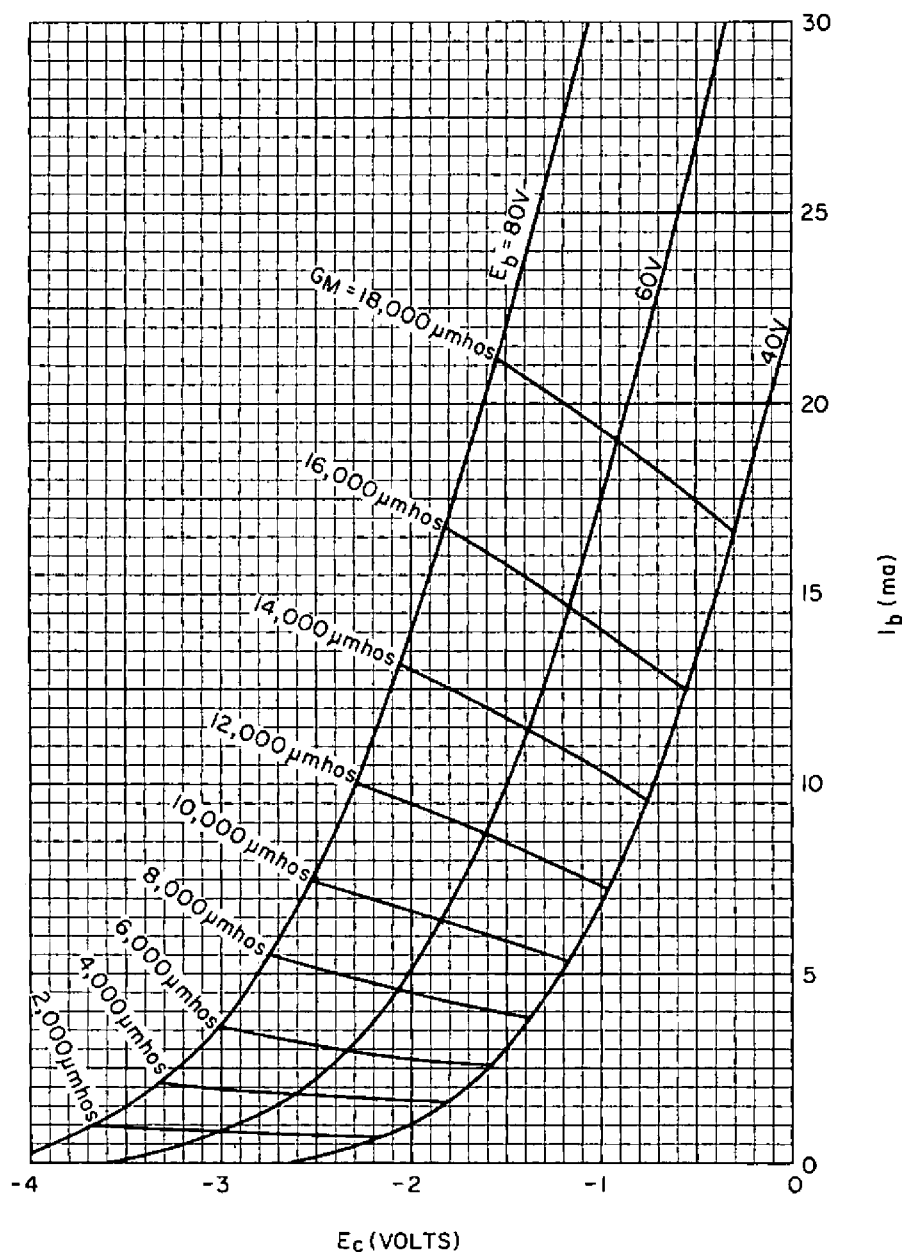


PLATE CHARACTERISTICS

FIGURE 1

# 8254/EC1000



TRANSFER CHARACTERISTICS