AMPEREX TUBE TYPE 3EJ7/XF184

TENTATIVE DATA

The Amperex 3EJ7/XF184 is a frame grid sharp cut-off pentode designed for use as an IF amplifier in television receivers. Its high transconductance with low interelectrode and feed-back capacitance, enables the construction of simplified broad band amplifiers with high stability. The higher gain per stage in many instances reduces the number of tubes required in the television IF strip. The 3EJ7/XF184 is designed for 600 mA controlled warm-up series string operation.

PIN CONNECTIONS

1 - CATHODE
2 - GRID NO. 1
3 - CATHODE
4 - HEATER
5 - HEATER
6 - SHIELD
7 - PLATE
8 - GRID NO.2
9 - GRID NO.3

GENERAL CHARACTERISTICS

MECHANICAL

Bulb
Base
Dimensions

ELECTRICAL

Cathode
Heater current
Heater voltage

Direct Interelectrode Capacitances

Input
Output
Plate to grid No. 1

Coated, unipotential
600 mA
3.4 volts

10 µuf
3 µuf
0.005 µuf max

Revised 6/60
## 3EJ7/XF184

### Maximum Ratings, Design Center Values

- **Plate voltage, cut-off condition**
  - Plate voltage: 250 volts max
  - Plate dissipation: 2.5 watts max

- **Screen grid voltage, cut-off condition**
  - Screen grid voltage: 250 volts max
  - Screen grid dissipation: 0.9 watts max
  - Cathode current: 25 mA max
  - Control grid series resistance: 1 megohm max
  - Heater-cathode voltage: 150 volts max
  - Heater-cathode circuit resistance: 20,000 ohms max

- **Negative grid no. 1 voltage**
  - (Grid No. 1 current = + 0.3 μA)
  - Peak negative grid no. 1 voltage: 1.3 volts max

### Typical Operation\(^1,2\)

- **Plate voltage**: 200 volts
- **Grid No. 3 voltage**: 0 volts
- **Screen grid voltage**: 200 volts
- **Negative control grid voltage**: 2.5 volts
- **Plate current**: 10 mA
- **Screen grid current**: 4.1 mA
- **Transconductance**: 15,000 micromhos
- **Plate resistance**: 350,000 ohms

- **Amplification factor of grid No. 2**
  - with respect to grid no. 1: 60

- **Input resistance (f = 40 Mc/s)**: 10,000 ohms

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1. Operation with cathode bias resistor is recommended.

2. In order to ensure good performance with respect to cross modulation and microphonics, the 3EJ7/XF184 should not be used in circuits with automatic gain control. For such applications a tube with a variable amplification factor is recommended.
PLATE CHARACTERISTICS

PLATE DISSIPATION = 2.5 WATTS

GRID NO. 1 VOLTAGE = -1.5 V
GRID NO. 2 VOLTAGE = 200 V
GRID NO. 3 VOLTAGE = 0 V

PLATE CURRENT (mA)

0  10  20  30

PLATE VOLTAGE (V)

0  100  200  300  400