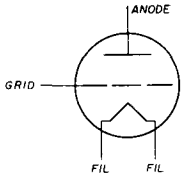
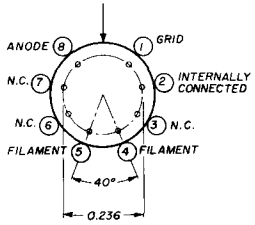
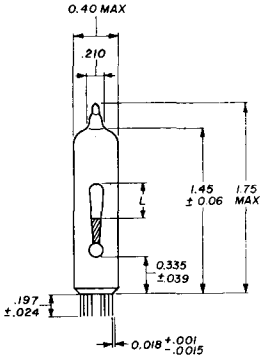
AMPEREX TUBE TYPE 1N3/DM71

The 1N3/DM71 is a subminiature tuning indicator tube specially designed for use in FM tuners where the demand for high-fidelity sound reproduction makes highly accurate tuning very desirable. This visual tuning tube is also suitable for application in wire and tape recorders where it simplifies proper recording by indicating the depth of modulation.

The 1N3/DM71 features extreme sensitivity, clear visual indication, low filament consumption, small size and "on-off" signal indication. The filament is directly heated.







GENERAL CHARACTERISTICS

MECHANICAL

Maximum overall length (excluding pins)	1¾ inches
Maximum Diameter	0.4 inches
Base	Miniature, 8 pin

Accessories

Socket	Amperex #S-19883

ELECTRICAL

Heater	directly heated AC or DC series or parallel connection

1N3/DM71

HEATER CIRCUIT

A. In Battery Receivers

Heater Voltage	1.4 volts
Heater Current	25 mA

Either pin 4 or 5 must be connected to the grounded point of the detector circuit.

B. In A.C. Receivers

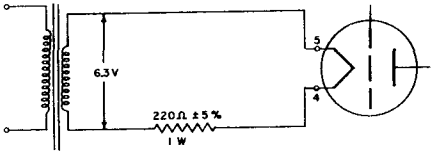


FIG. 1
With 6.3 volt transformer winding

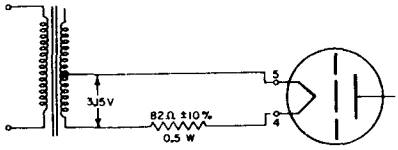


FIG. 2
With 6.3 volt winding with center tap

C. In A.C./D.C. Receivers

The heater, together with a suitable shunt resistor, can be connected in series with other tube heaters providing a negative temperature coefficient resistor is incorporated in the circuit.

Pin 5 must be connected to the grounded point of the detector circuit.

GRID CIRCUIT
(A.C. Filament Supply)

In order to minimize hum, a filter is recommended in the grid circuit according to the diagram below. R_1 is the detector resistor. R_2 and C_1 are already a part of the grid circuit in the case of non-delayed A.G.C.

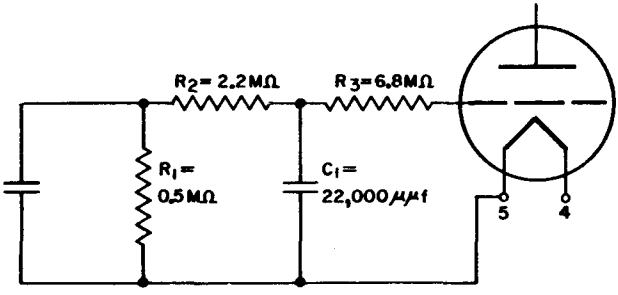


FIG. 3

PLATE CIRCUIT
(A.C. Filament Supply)

In order to minimize hum, an external plate resistor is recommended according to the table below.

Plate Voltage	Plate Resistor
250 volts	1.8 megohms
170 volts	1.0 megohms
110 volts	0.47 megohms

Maximum Ratings, Design Center Values

Supply Voltage (Plate Current = 0)	450 volts
Supply Voltage	300 volts
Plate Voltage [1]	90 volts
Plate Voltage	45 volts
Plate Dissipation (Plate Voltage $\leq$ 90 volts) [2]	45 mW
Plate Dissipation (Plate Voltage = 200 volts) [2]	10 mW
Cathode Current	0.3 mA
External Resistance Between Grid & Negative Filament	10 megohms

Typical Operating Conditions - Battery Supply

D.C. Filament Voltage	1.4[1]	1.4[3] volts
Supply Voltage	67.5	90 volts
Plate Voltage [4]	60	85 volts
Grid Voltage	0	0 volts
Plate Current	105	170 μA
L (Length of light bar)	0.4	0.43 inches
Grid Voltage (L = 0)	− 7	−10 volts

Typical Operating Conditions - A.C. Supply

Filament Voltage [5]	1.4	1.4	1.4 volts
Supply Voltage	110	170	250 volts
Plate Resistance	0.47	1.0	1.8 megohms
Grid Voltage	0	0	0 volts
Plate Current	105	110	105 μA
L (Length of light bar)	0.4	0.4	0.4 inches
Grid Voltage (L = 0)	− 15	− 23	− 34 volts

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1 Pin 5 grounded.

2 At other values of plate voltage, the maximum plate dissipation can be found by linear interpolation.

3 Pin 4 grounded.

4 Plate voltage is equal to the supply voltage reduced by the bias for the output tube.

5 Pin 5 grounded. When the filament voltage is adjusted according to Fig. 1 and Fig. 2, the plate current will be 1 to 2 microamps lower. All other operating conditions remain the same.

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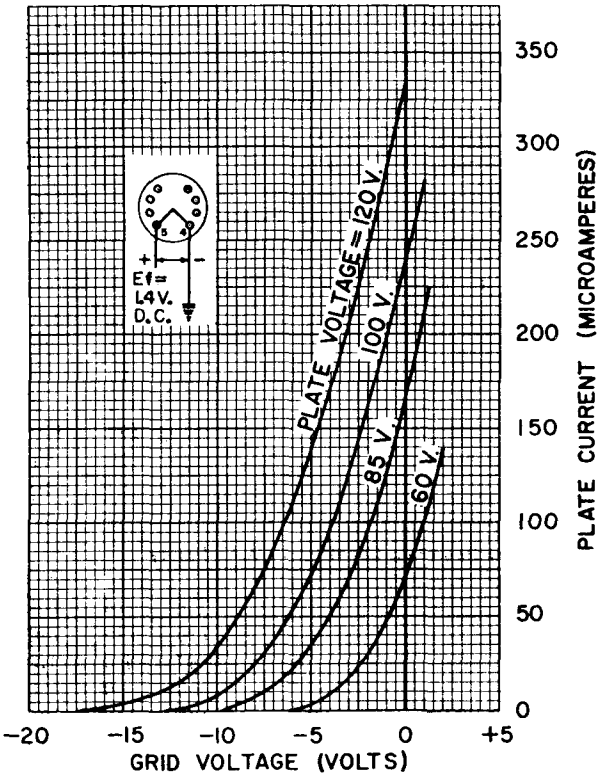

FIG. 5

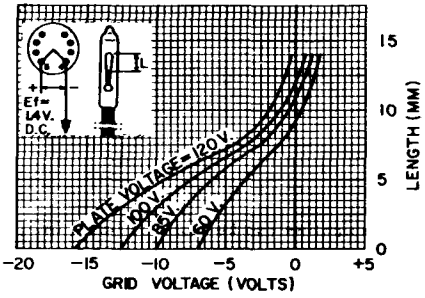

FIG. 6

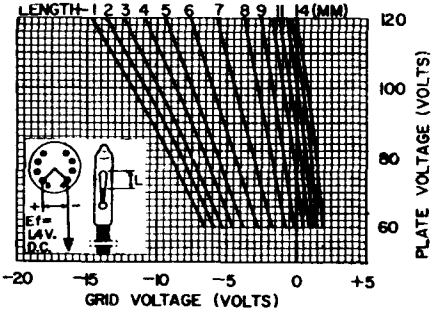

FIG. 7

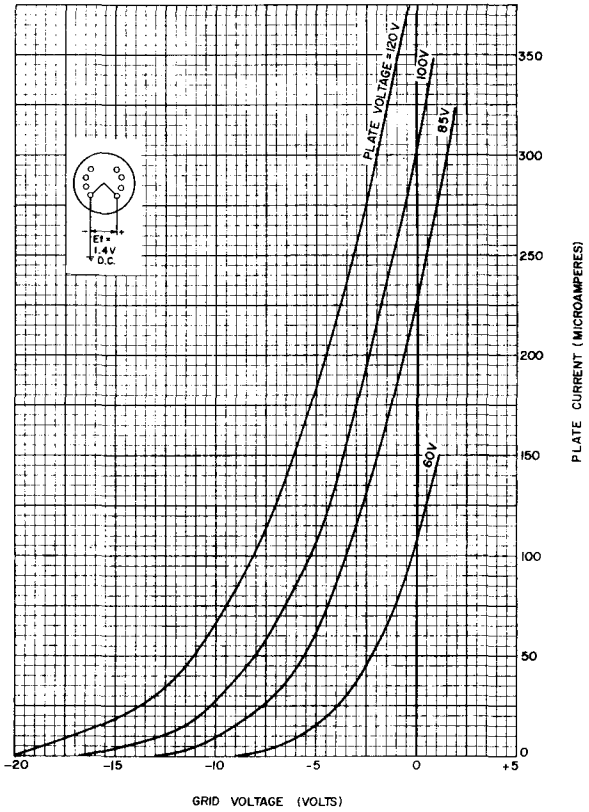

FIG. 8

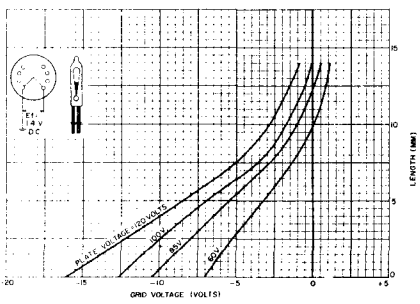

FIG. 9

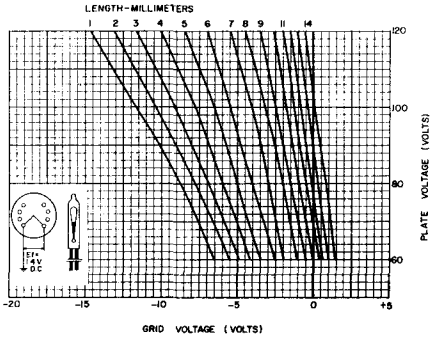

FIG. 10

1N3/DM71

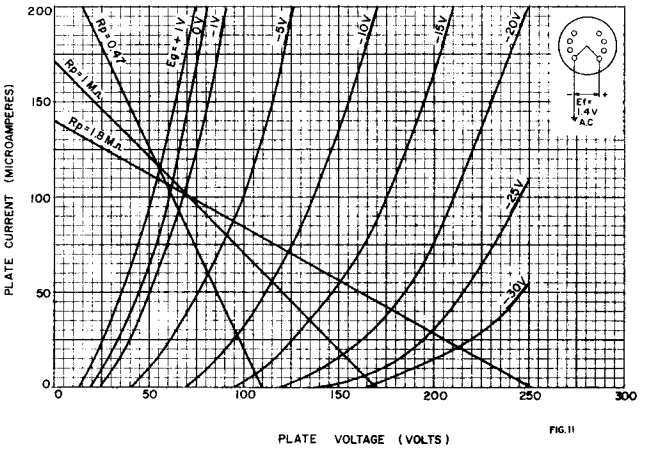

FIG. 11

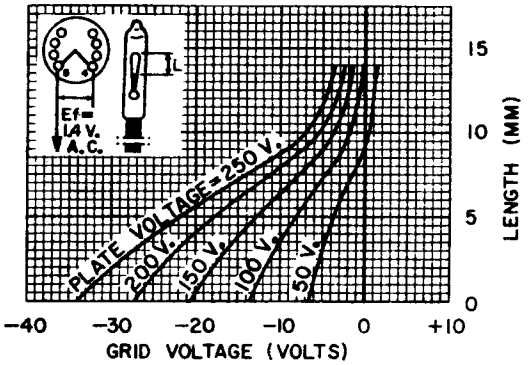

FIG. 12

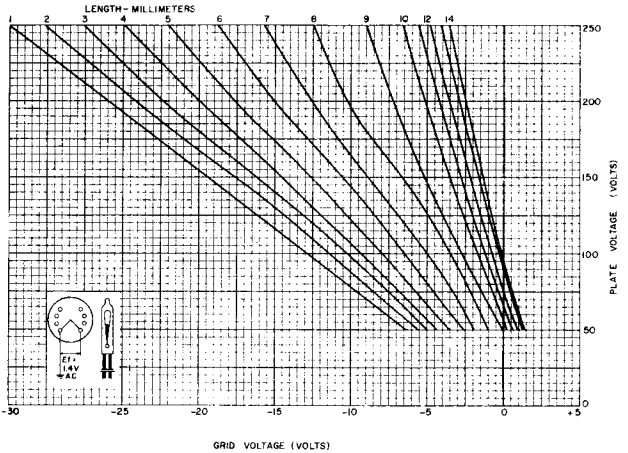

FIG 13