

Technical Information

CK7576

SUBMINIATURE TRIODE

The CK7576 is a heater-cathode type high-Mu triode of subminiature construction especially designed for grounded grid RF power amplifier service in the VHF and UHF regions. Excellent isolation between input and output circuits coupled with high transconductance, high amplification factor, and good power handling ability make it suitable for a wide variety of applications. The flexible terminal leads may be soldered or welded directly to the terminal of circuit components without the use of sockets. Standard 8-pin subminiature sockets may be used by cutting the leads to a suitable length.

ELECTRICAL DATA

DIRECT INTERELECTRODE CAPACITANCES: (μmf)

	With Shields (Note 1)	Without Shield
Plate to Cathode (P to K)	0.15 max.	0.2 max
Output (Grounded Grid) (P to G + H)	5.3	3.5
Cathode to Heater (K to H)	5.8	5.8
Input (Grounded Grid) (K to G + H)	12	12
Grid to Cathode + Heater (G to K + H)	7.9	6.3
Cathode to Grid (H + P Gnd.)	6.0	5.9

RATINGS—ABSOLUTE MAXIMUM VALUES:

Heater Voltage	6.3 $\pm$ 5% volts
Plate Voltage	250 volts
DC Grid Voltage	-55 volts
Cathode Current	50 mA _{dc}
Grid Current	10 mA _{dc}
Grid Dissipation	0.2 watts
Plate Dissipation	4.1 watts
Peak Heater - Cathode Voltage	$\pm$ 90 volts
Grid Circuit Resistance	
class A	0.1 Meg
fixed bias class C	0.01 Meg
cathode bias class C	0.05 Meg
Peak Positive RF Grid Voltage	10 volts

CHARACTERISTICS AND TYPICAL OPERATION CLASS A:

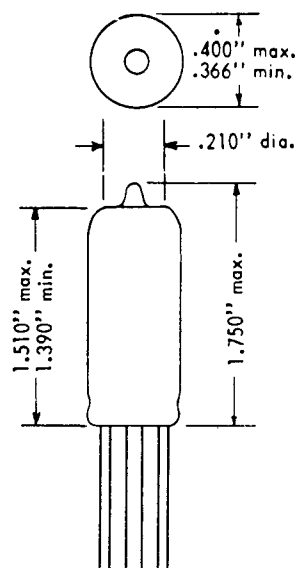
Filament Voltage	6.3 $\pm$ 5% volts
Heater Current	450 mA
Plate Voltage	200 volts
Grid Voltage	0
Cathode Resistance	150 ohms
Plate Current	15.5 mA _{dc}
Transconductance	10,700 μmhos
Amplification Factor	46
Grid Bias for $I_b = 100 \mu\text{A}_{dc}$ (Approx.)	-6.0 volts

- Note 1 Shield tied to grid.

MECHANICAL DATA

ENVELOPE..... T-3 Glass
 BASE... Subminiature Button 8-Pin
 (0.017" tinne flexible leads
 Length: 1.5)
 MOUNTING POSITION: Any

PHYSICAL DIMENSIONS



TERMINAL CONNECTIONS:

- Lead 1 Heater
- Lead 2 Grid
- Lead 3 Plate
- Lead 4 Grid
- Lead 5 Grid
- Lead 6 Cathode
- Lead 7 Grid
- Lead 8 Heater



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ELECTRICAL DATA (Cont'd)

CHARACTERISTICS AND TYPICAL OPERATION: 235 Mc GROUNDED GRID RF AMPLIFIER:

Filament Voltage	6.3 ± 5% volts
Plate Voltage	200 volts
Cathode Resistance	150 ohms
Peak RF Grid to Cathode Voltage	14 volts
Grid Current	10 mA dc
Plate Current	37 mA dc
RF Driving Power (Approx.)	0.5 watts
Useful Power Output	3.25 watts

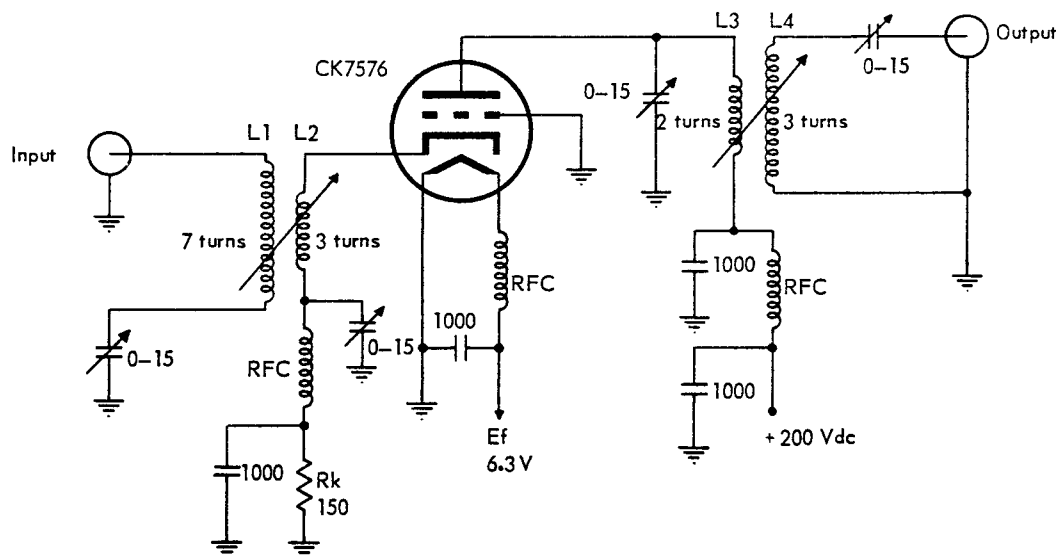


FIGURE 1

TYPICAL 235 Mc GROUNDED GRID, RF AMPLIFIER USING THE CK7576

All capacitances in micro microfarads—RFC—Z235 RF chokes.

Coils L1, L2, L3 and L4 are of #14 copper, enamel covered wire wound with an inside diameter of 5/16".

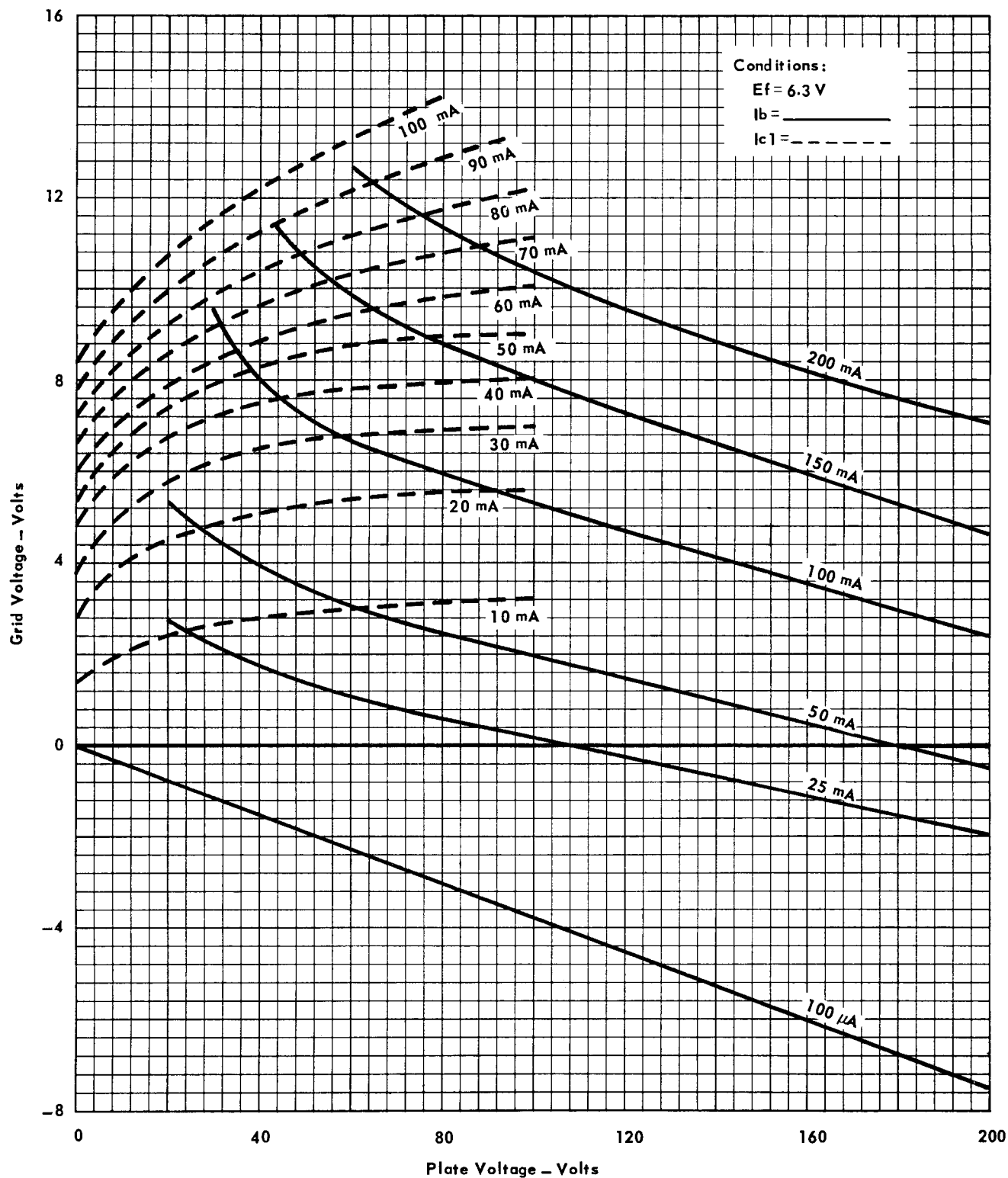
Due to the relatively high heater to cathode capacitance of the CK7576, in a grounded heater circuit of 200 to 300 MC it is necessary to resort to series tuning of the input circuit. In a circuit with the heater floating above ground by filament chokes it is possible to use parallel tuning. In the circuit shown in Figure 1, operation under Typical Operating 235 Mc Grounded Grid Amplifier, the input impedance is approximately 250 ohms. If all grid pins of the tube are grounded directly to the chassis with as short leads as possible and coupling between input and output tuned circuits is kept to a minimum, the tube will be perfectly stable.

When the tube is operated under the conditions shown under typical operation 235 Mc grounded grid amplifier, a power gain of approximately 8.5 db is obtained. With a plate supply of 250 Vdc, a power gain of approximately 10 db may be realized.

Under no circumstances should the Absolute Maximum Ratings be exceeded.

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AVERAGE CHARACTERISTICS

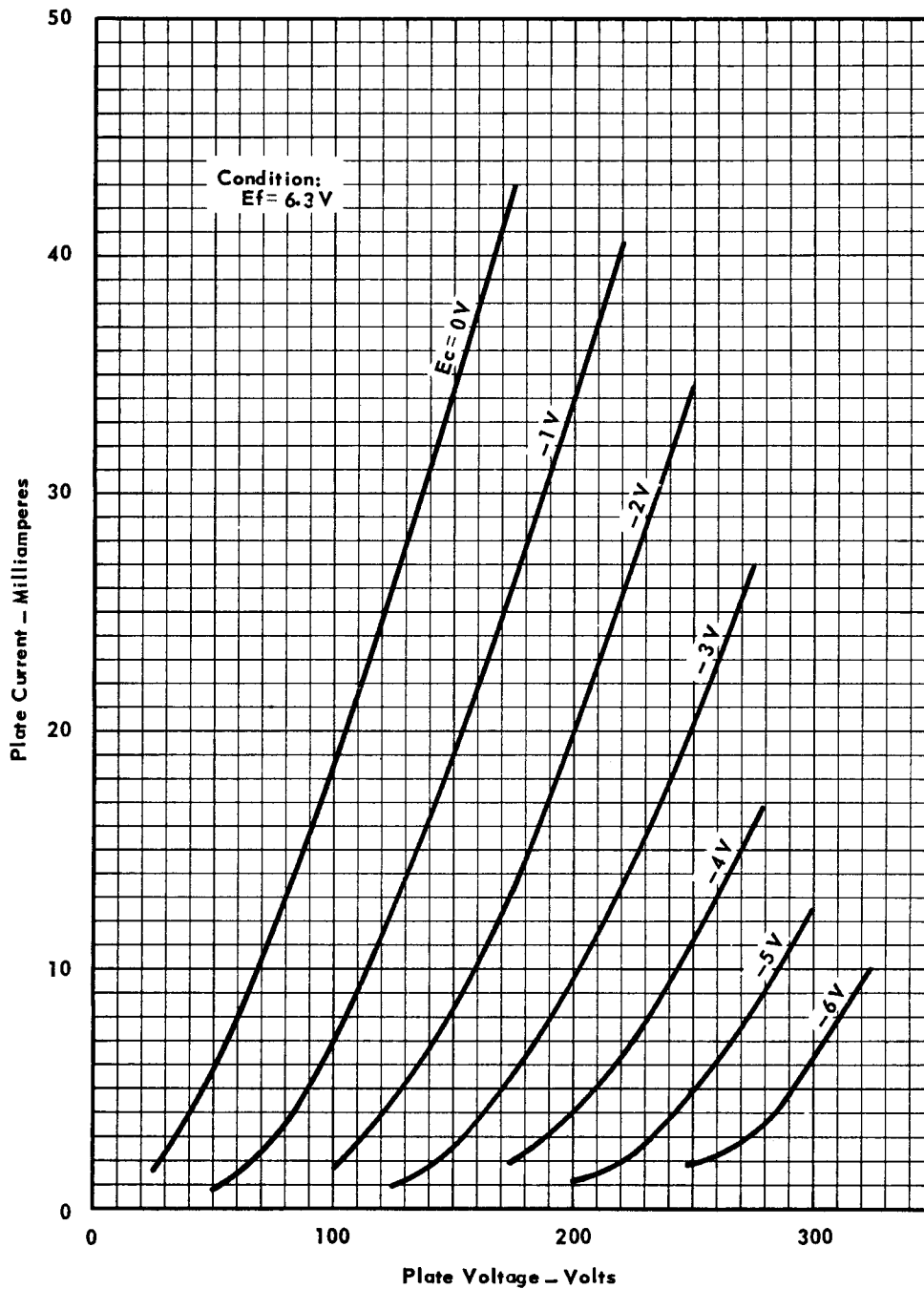




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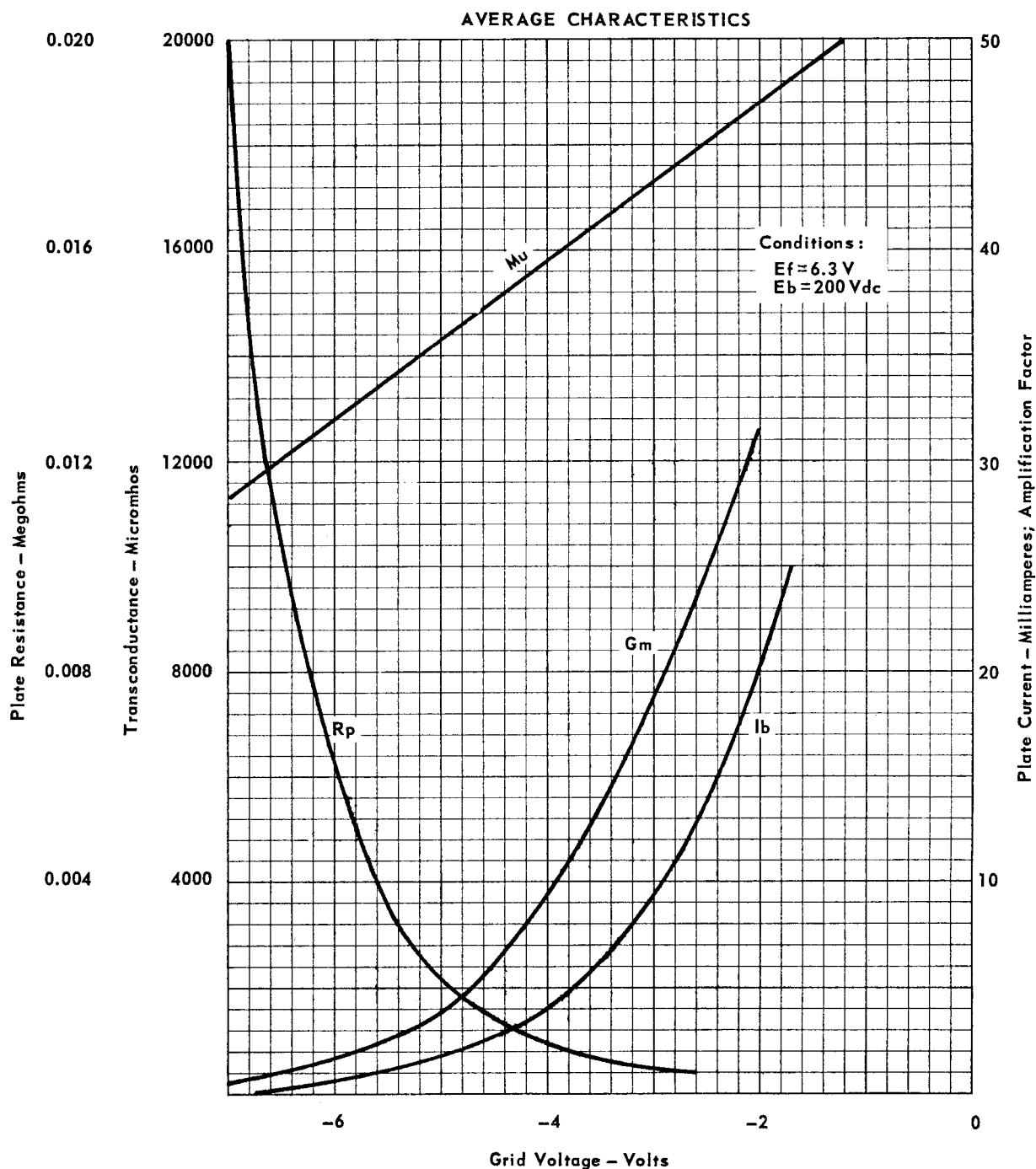
AVERAGE PLATE CHARACTERISTICS





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AVERAGE CHARACTERISTICS

