VHF FREQUENCY-MULTIPLIER TYPE 8084

The 8084 is a 7-pin miniature, sharp-cutoff frame grid pentode designed particularly for service in mobile communication equipment as a VHF frequency multiplier. The 8084 is also suitable for VHF amplifier and oscillator circuits. The 8084 features a heater-cathode structure designed to render reliable operation when operated from a 6-cell storage battery primary power system.

ELECTRICAL

Cathode ............................................ Coated Unipotential
Heater:
Voltage, ac or dc (Note 1) .................... 13.5 Volts
Current ........................................... 0.160 Amperes
Direct Inter-electrode Capacitances (Shielded): (Note 2)
Grid 1 to Plate .................................. 0.04 max. \(\mu F\)
Input ............................................. 5.0 \(\mu F\)
Output ............................................ 3.0 \(\mu F\)

MECHANICAL

Bulb .................................................. T-5 1/2
Base ................................................. Miniature 7-Pin (JEDEC E7-1)
Outline ............................................. 5-2
Basing .............................................. 7CM
Mounting Position ................................ Any

AMPLIFIER - CLASS A1

MAXIMUM RATINGS

Absolute Maximum Values
Plate Voltage ....................................... 250 max. Volts
Grid 3 Voltage .................................... 0 max. Volts
Grid 2 (Screen) Supply Voltage ................ 180 max. Volts
Grid 2 Voltage .................................... See Grid 2 Input Rating Chart
Plate Dissipation .................................. 2.3 max. Watts
Grid 2 Dissipation ................................ 0.5 max. Watts
Grid 1 Control Grid Voltage:
Positive Value .................................... 0 max. Volts
Cathode Current .................................. 20 max. Ma.
Heater-Cathode Voltage:
Heater Negative with Respect to Cathode:
Total DC and Peak ................................ 100 max. Volts
Heater Positive with Respect to Cathode:
DC Component ..................................... 50 max. Volts
Total DC and Peak ................................ 100 max. Volts

TYPICAL OPERATING CHARACTERISTICS:

Plate Voltage ....................................... 125 Volts
Grid 2 Voltage ..................................... 80 Volts
Grid 1 Voltage ..................................... –1 Volts
Transconductance ................................ 10500 \(\mu\)hos
Grid 1 Cutoff Bias (Note 3) .................... –3.5 Volts
Plate Current ..................................... 7 Ma.
Grid 2 Current ..................................... 1.7 Ma.
AMPLIFIER - CLASS C
OSCILLATOR - CLASS C
FREQUENCY MULTIPLIER - CLASS C

MAXIMUM RATINGS, CCS

 Absolute Maximum Values
 DC Plate Voltage ....... 250 max. Volts
 DC Grid 2 Voltage ....... 0 max. Volts
 DC Grid 2 Supply Voltage ....... 180 max. Volts
 DC Grid 2 Voltage . See Grid 2 Input Rating Chart
 DC Grid 1 Voltage ....... -50 max. Volts
 DC Plate Current ....... 15 max. Ma.
 DC Grid 2 Current ....... 3 max. Ma.
 DC Grid 1 Current ....... 1.5 max. Ma.
 Plate Dissipation ....... 2.3 max. Watts
 Grid 2 Dissipation ....... 0.5 max. Watts
 Grid 1 Circuit Resistance ....... 0.1 max. Megohms

TYPICAL OPERATING CHARACTERISTICS

Tripler Service to 75 Mc. (Class C)
Plate Voltage ............ 200 Volts
Grid 3 Voltage ............ 0 Volts
Grid 2 Voltage ............ 80 Volts
Grid 1 Voltage (Note 4) ....... -23 Volts
Peak RF Grid 1 Voltage ....... 26 Volts
Plate Current ............ 8.4 Ma.
Grid 2 Current ............ 2.1 Ma.
Grid 1 Current (Approx.) ....... 785 \mu\text{Amperes}
Driving Power ............ 22 Milliwatts
Power Output (Approx.) ....... 0.45 Watts

NOTES
1. Heater voltage range is 11.8 to 15.5 volts.
2. With JEDEC Shield No. 316 connected to pin 2.
3. For transconductance of 100 micromhos.
4. Developed across a grid resistor of 30,000 ohms.

AVE RAGE CON STANT CURRE NT CHARACT E RISTICS

Rated Heater Conditions
Grid 2 Volts = 80

Plate Current Milliamperes
Grid 2 Current Milliamperes
Grid 1 Current Milliamperes

Plate Volts

WESTINGHOUSE ELECTRIC CORPORATION, ELECTRONIC TUBE DIVISION, ELMIRA, NEW YORK