

AIR COOLED R.F. POWER TETRODE

| QUICK REFERENCE DATA | | | | |
|----------------------|-------------------|----------------|--------------|-----------------|
| Freq. (Mhz) | Class B amplifier | | Class AB 3SB | |
| | V_a (V) | W_{load} (W) | V_a (V) | $W_{o PEP}$ (W) |
| 220 30 | 3000 | 1000 | 3000 | > 1050 |

HEATING : indirect by a.c. or d.c.; oxide-coated cathode, matrix type

| | | | |
|----------------|------------|------------|-------------|
| Heater voltage | V_f | 5.0 | $V \pm 3\%$ |
| Heater current | I_f | 18 < 20 | A A |
| Waiting time | T_w min. | 5 | min |

CAPACITANCES

| | | | |
|---------------------------------|-------------|----------|----|
| Anode to cathode and heater | $C_{a/kf}$ | < 0.08 | pF |
| Anode to grid no.1 | C_{aG1} | < 0.1 | pF |
| Anode to grid no.2 | C_{aG2} | 13 to 17 | pF |
| Grid no.1 to cathode and heater | $C_{G1/kf}$ | 33 to 42 | pF |
| Grid no.1 to grid no.2 | C_{G1G2} | 48 to 64 | pF |
| Grid no.2 to cathode and heater | $C_{G2/kf}$ | < 1.7 | pF |

TYPICAL CHARACTERISTICS

| | | | |
|----------------------|--------------|-----|------|
| Anode voltage | V_a | 3 | kV |
| Grid no.2 voltage | V_{G2} | 550 | V |
| Anode current | I_a | 500 | mA |
| Transconductance | S | 20 | mA/V |
| Amplification factor | μ_{G2G1} | 7.5 | |

K.F. CLASS AB SINGLE SIDE BAND AMPLIFIER suppressed carrier

LIMITING VALUES (Absolute limits)

| Frequency | f | up to | 50 | MHz |
|------------------------------|-----------|-------|-----|------------|
| Anode voltage | V_a | max. | 3.5 | kV |
| Anode input power | W_{i_a} | max. | 3.0 | kW |
| Anode dissipation | W_a | max. | 1.5 | kW |
| Anode current | I_a | max. | 1.0 | A |
| Grid No.2 voltage | V_{g2} | max. | 1 | V |
| Grid No.2 dissipation | W_{g2} | max. | 50 | W |
| Grid No.2 current | I_{g2} | max. | 50 | mA |
| Negative grid No.1 voltage | $-V_{g1}$ | max. | 500 | V |
| Grid No.1 current | I_{g1} | max. | 0 | mA |
| Grid No.1 circuit resistance | R_{g1} | max. | 5 | k Ω |

OPERATING CONDITIONS

| Frequency | f | 1 to 30 | MHz | |
|----------------------------|-----------|-------------|--------------------|--------------------|
| Anode voltage | V_a | 3.0 | kV | |
| Grid No.2 voltage | V_{g2} | 500 | V | |
| Grid No.1 voltage | V_{g1} | -55 | V | |
| | | zero signal | single tone signal | double tone signal |
| Peak driving voltage | V_{g1p} | 0 | 48 (<53) | 46 (<51) V |
| Anode current | I_a | 380 | 750 | 570 mA |
| Grid No.2 current | I_{g2} | -5 | -20 | -15 mA |
| Grid No.1 current | I_{g1} | 0 | 0 | 0 mA |
| Grid No.1 resistor | R_{g1} | 2 | 2 | 2 k Ω |
| Per output power | W_{dr} | 0 | < 5 | < 5 W |
| Anode input power | W_{i_a} | 1140 | 2250 | 1710 W |
| Anode dissipation | W_a | 1140 | 1050 | 1100 W |
| Output power in load | W_p | 0 | 1050 | - W |
| PEP output power in load | W_p | 0 | - | 1050 W |
| Intermodulation distortion | | | | |
| 1 MHz. of the 3rd order | d_3 | - | - | < -38 dB 2) |
| of the 5th order | d_5 | - | - | < -36 dB 2) |
| 30 MHz. of the 3rd order | d_3 | - | - | < -36 dB 2) |
| of the 5th order | d_5 | - | - | < -36 dB 2) |

2) Maximum values encountered at any level of drive voltage up to full drive referred to the amplitude of either of the two equal tones at that level.

TEMPERATURE LIMITS (Absolute limits)

| | | | |
|---|-------|------|--------|
| Temperature of all seats (see also outline drawing) | t_s | max. | 200 °C |
| Air inlet temperature | t_i | max. | 45 °C |

COOLING

Forced air cooling for the anode. For cooling characteristics see page 5. Low velocity air flow for the ceramic to metal seals.

Cooling will also be necessary when only the heater voltage is applied to the tube.

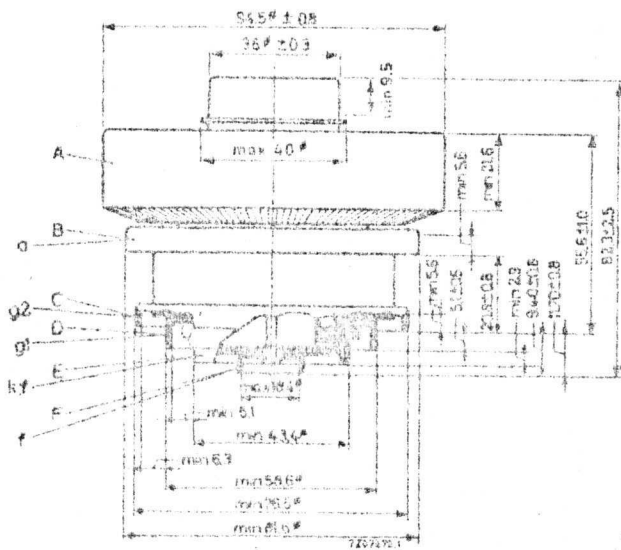
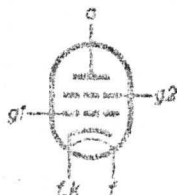
MECHANICAL DATA

Dimensions in mm

Anode connector (for frequencies < 30MHz): 40689

Socket : 40704

Net weight : 90 g

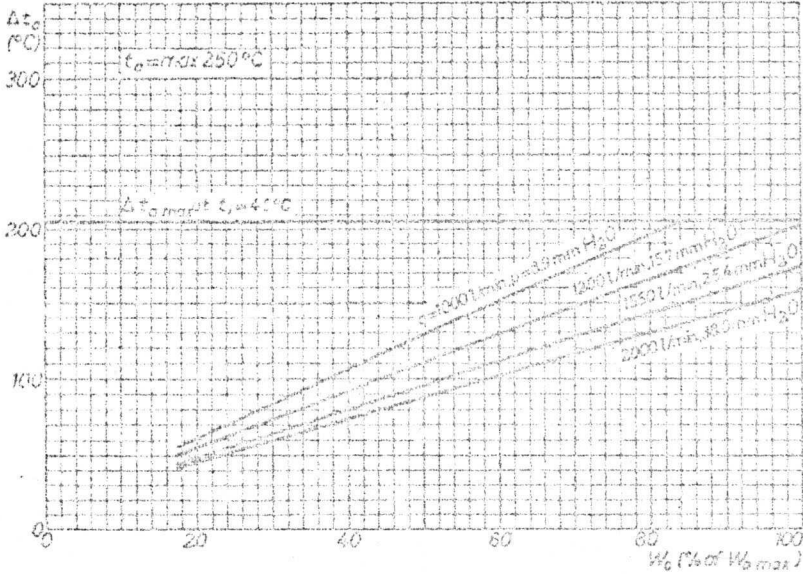


The radiator and the terminals lie inside or outside concentric cylinders with the following dimensions:

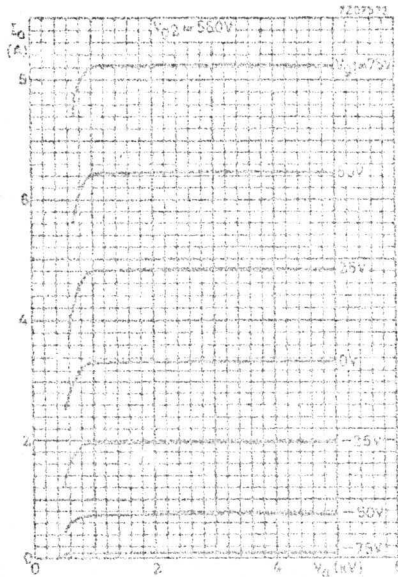
| | | |
|-------------------------------|-------------|---------|
| Radiator | A : inside | 96.0 mm |
| Anode | B : inside | 82.8 mm |
| Grid No.2 connection | C : inside | 77.7 mm |
| Grid No.1 connection | D : inside | 59.4 mm |
| Cathode and heater connection | E : inside | 44.3 mm |
| Heater connection | F : outside | 17.6 mm |

Mounting position: any

720417-212.ebty



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ANNEX
ML-FE
PT74/11-12
PT75/01
- 21 -

CLASS B AMPLIFIER

LIMITING VALUES (Absolute limits)

| Frequency | f | up to | 220 | MHz |
|------------------------------|--------------|-------|------|------------|
| Anode voltage | V_a | max. | 3500 | V |
| | | max. | 2500 | V 1) |
| Anode input power | W_{i_a} | max. | 3 | kW |
| | | max. | 2 | kW 1) |
| Anode dissipation | W_a | max. | 1.5 | kW |
| Anode current | I_a | max. | 1 | A |
| Grid No.2 voltage | V_{g2} | max. | 1000 | V |
| Grid No.2 input power | $W_{i_{g2}}$ | max. | 50 | W |
| Grid No.2 current | I_{g2} | max. | 50 | mA |
| | $-I_{g2}$ | max. | 50 | mA |
| Negative grid No.1 voltage | $-V_{g1}$ | max. | 300 | V |
| Grid No.1 current | I_{g1} | max. | 10 | mA |
| Grid No.1 circuit resistance | R_{g1} | max. | 5 | k Ω |

OPERATING CHARACTERISTICS

| Frequency | f | 220 | MHz |
|--------------------------|-----------|------|---------|
| Anode voltage | V_a | 3000 | V |
| Grid No.2 voltage | V_{g2} | 450 | V |
| Grid No.1 voltage | V_{g1} | -60 | V |
| Anode current | I_a | 150 | 830 mA |
| Grid No.2 current | I_{g2} | -5 | -20 mA |
| Grid No.1 current | I_{g1} | - | 5 mA |
| Driver output power | W_{dr} | - | 40 W |
| Anode input power | W_{i_a} | 0.45 | 2.49 kW |
| Anode dissipation | W_a | 0.45 | 1.35 kW |
| Output power in the load | W_p | 0 | 1.0 kW |

1) For AM.

M-11
 ML-11
 P174/11-12
 P175/01
 - 20 -