

MHW710

The RF Line

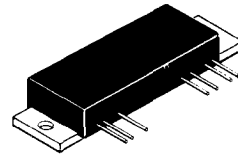
UHF POWER MODULE

... designed for Land Mobile Communications equipment in the UHF band.

- Frequency Range –
400 to 470 MHz
- Power Gain –
 $G_p = 19.4$ dB (Min)
- Output Power –
 $P_{out} = 13$ W (Min)

UHF POWER MODULE

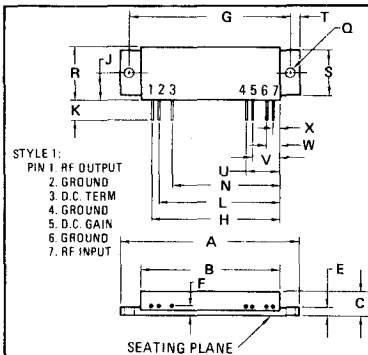
13 W, 12.5 V
400-470 MHz



ELECTRICAL CHARACTERISTICS (V_s and V_{sc} set at 12.5 Vdc unless otherwise noted.)

| Characteristic | Symbol | Min | Max | Unit |
|---|-----------|---|-----|-------|
| Frequency Range (1) | — | 400 | 470 | MHz |
| Output Power ($P_{in} = 150$ mW) | P_{out} | 13 | — | Watts |
| Power Gain | G_p | 19.4 | — | dB |
| Efficiency ($P_{out} = 13$ W) | η | 35 | — | % |
| Harmonics ($P_{out} = 13$ W, Reference) | — | — | -40 | dB |
| Input Impedance ($P_{out} = 13$ W, 50 Ohm Reference) | Z_{in} | — | 2:1 | VSWR |
| Power Degradation ($P_{out} = 13$ W, $T_C = 25^\circ\text{C}$) ($T_C = 0^\circ\text{C}$ to 60°C) | — | — | 0.3 | dB |
| Power Degradation ($P_{out} = 13$ W, $T_C = 25^\circ\text{C}$) ($T_C = 0^\circ\text{C}$ to 80°C) | — | — | 0.7 | dB |
| Load Mismatch (VSWR = ∞ , $V_s = 15$ Vdc, $P_{out} = 13$ W) | — | No degradation in P_{out} | | |
| Stability ($P_{in} = 50$ to 200 mW, Load Mismatch 2:1 50 ohm reference, $V_s = 8.0$ to 16 Vdc, V_{sc} adjusted for $P_{out} = 5.0$ to 16 W) | — | All spurious outputs more than 70 dB below desired signal. | | |

- (1) Frequency Range is covered in two bands:
MHW710-1 400-440 MHz
MHW710-2 440-470 MHz



| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|-------|-----------|--------|
| | MIN | MAX | MIN | MAX |
| A | 67.06 | 67.56 | 2.640 | 2.660 |
| B | 52.32 | 52.83 | 2.060 | 2.080 |
| C | 6.51 | 8.89 | 0.335 | 0.350 |
| E | 2.54 | 2.79 | 0.100 | 0.110 |
| F | 2.67 | 2.92 | 0.105 | 0.115 |
| G | 61.09 BSC | | 2.405 BSC | |
| H | 47.88 | 48.64 | 1.885 | 1.915 |
| J | 10.67 | 11.18 | 0.420 | 0.440 |
| K | 5.84 | 7.62 | 0.230 | 0.300 |
| L | 45.34 | 46.10 | 1.785 | 1.815 |
| N | 40.26 | 41.02 | 1.585 | 1.615 |
| Q | 3.45 | 3.71 | 0.136 | 0.146 |
| R | 20.32 | 20.57 | 0.800 | 0.810 |
| S | 17.02 | 17.53 | 0.670 | 0.690 |
| T | 2.98 | 3.24 | 0.1175 | 0.1275 |
| U | 12.32 | 13.08 | 0.485 | 0.515 |
| V | 9.78 | 10.54 | 0.385 | 0.415 |
| W | 4.70 | 5.46 | 0.185 | 0.215 |
| X | 2.16 | 2.92 | 0.085 | 0.115 |

CASE 700-02

TYPICAL PERFORMANCE CURVES
(MHW710-2)

FIGURE 1 – INPUT POWER, EFFICIENCY AND VSWR versus FREQUENCY

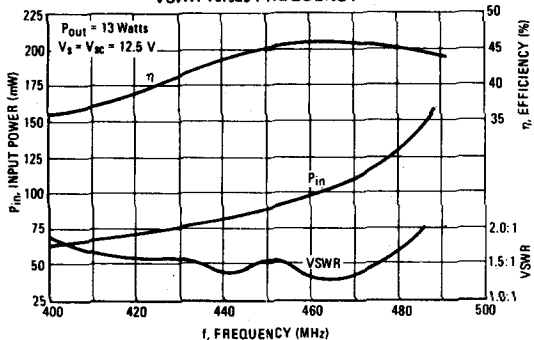


FIGURE 2 – OUTPUT POWER versus INPUT POWER

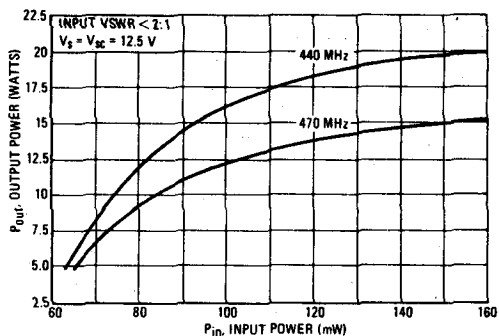


FIGURE 3 – OUTPUT POWER versus VOLTAGE

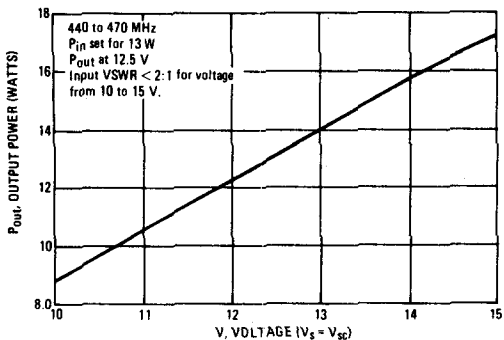


FIGURE 4 – OUTPUT POWER versus GAIN CONTROL VOLTAGE

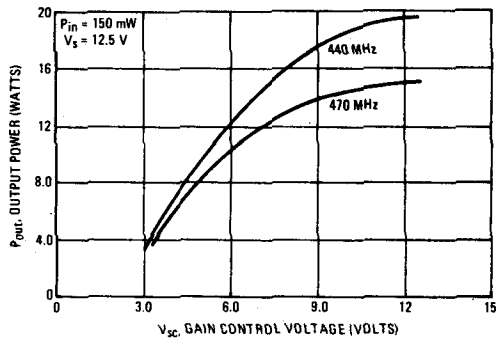
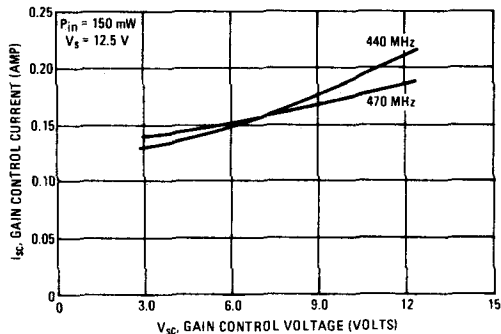


FIGURE 5 – GAIN CONTROL CURRENT versus VOLTAGE



UHF Power Module Test Information

FIGURE 1 – TEST CIRCUIT

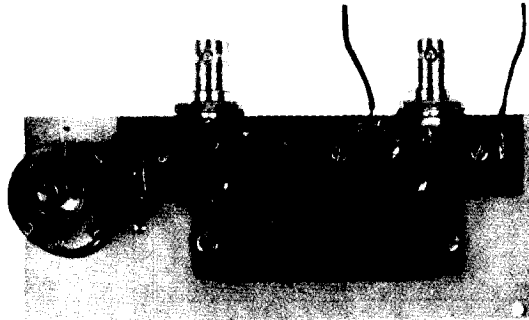


FIGURE 2 – UHF POWER MODULE TEST FIXTURE PRINTED CIRCUIT BOARD

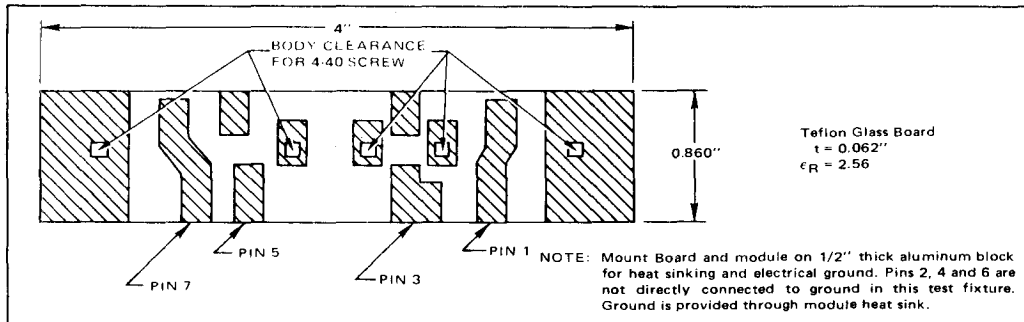


FIGURE 3 – UHF POWER MODULE TEST SETUP

