

# MHW710

## The RF Line

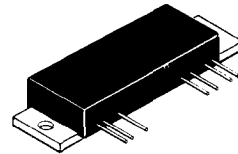
### UHF POWER MODULE

... 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

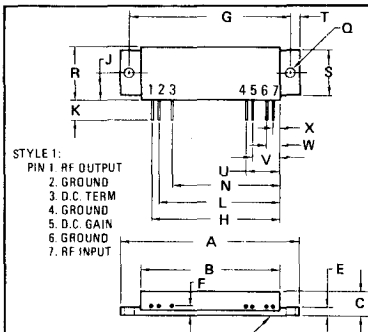
13 W, 12.5 V  
400-470 MHz



### 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)	$\eta$	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 $60^\circ\text{C}$ )	—	—	0.3	dB
Power Degradation ( $P_{out} = 13$ W, $T_C = 25^\circ\text{C}$ ) ( $T_C = 0^\circ\text{C}$ to $80^\circ\text{C}$ )	—	—	0.7	dB
Load Mismatch (VSWR = $\infty$ , $V_s = 15$ 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



STYLE 1:  
PIN 1 RF OUTPUT  
2 GROUND  
3 D.C. TERM  
4 GROUND  
5 D.C. GAIN  
6 GROUND  
7 RF INPUT

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

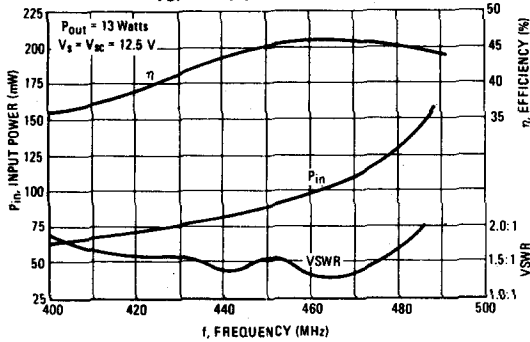


FIGURE 2 – OUTPUT POWER versus INPUT POWER

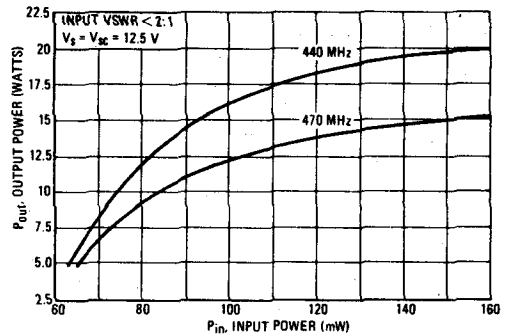


FIGURE 3 – OUTPUT POWER versus VOLTAGE

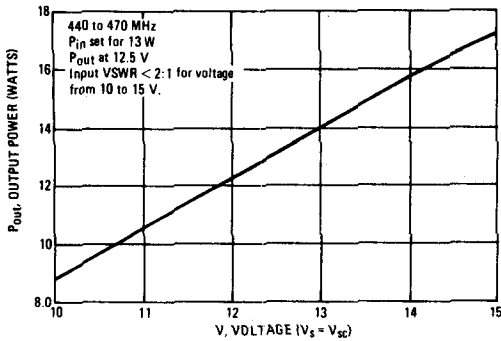


FIGURE 4 – OUTPUT POWER versus GAIN CONTROL VOLTAGE

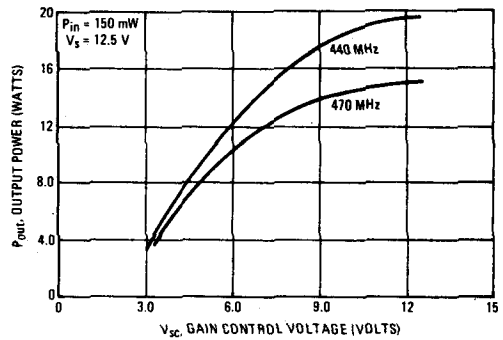
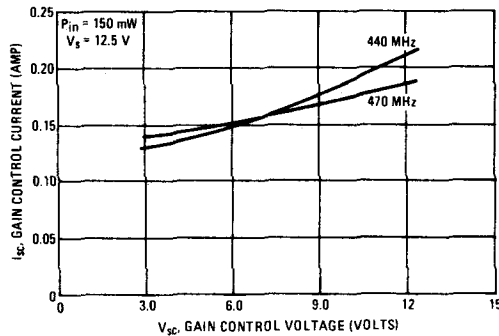


FIGURE 5 – GAIN CONTROL CURRENT versus VOLTAGE



UHF Power Module Test Information

FIGURE 1 – TEST CIRCUIT

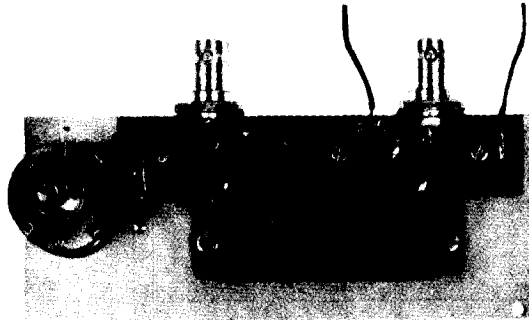


FIGURE 2 – UHF POWER MODULE TEST FIXTURE PRINTED CIRCUIT BOARD

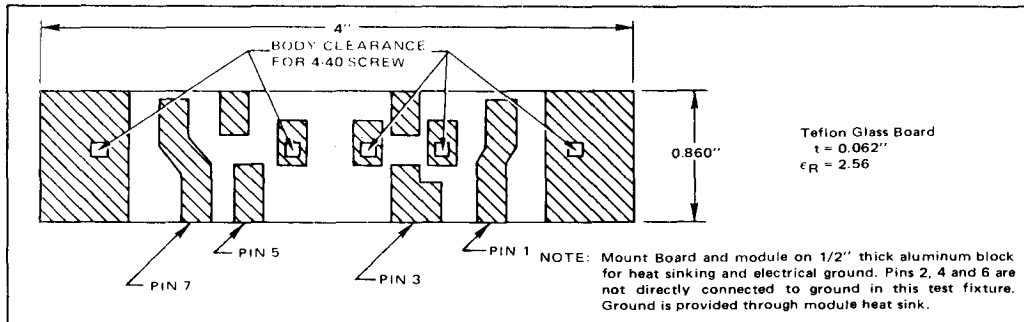


FIGURE 3 – UHF POWER MODULE TEST SETUP

