UHF POWER AMPLIFIER MODULE (HAM SSB/FM)

FEATURES:

. Output Power : $P_o \geqq 17W$

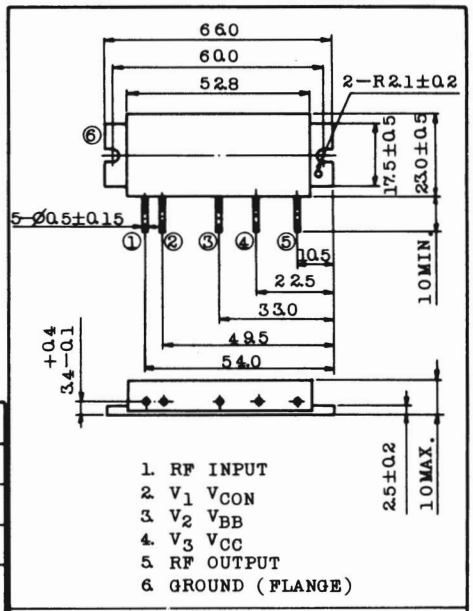
. Minimum Gain : $G_p = 19.2dB$

. Efficiency : $\eta_T \geqq 35\%$

. 50Ω Input/Output Impedance

. Guaranteed Stability

Unit in mm




| | |
|---|---|
| JEDEC | — |
| EIAJ | — |
| TOSHIBA | 5-53B |

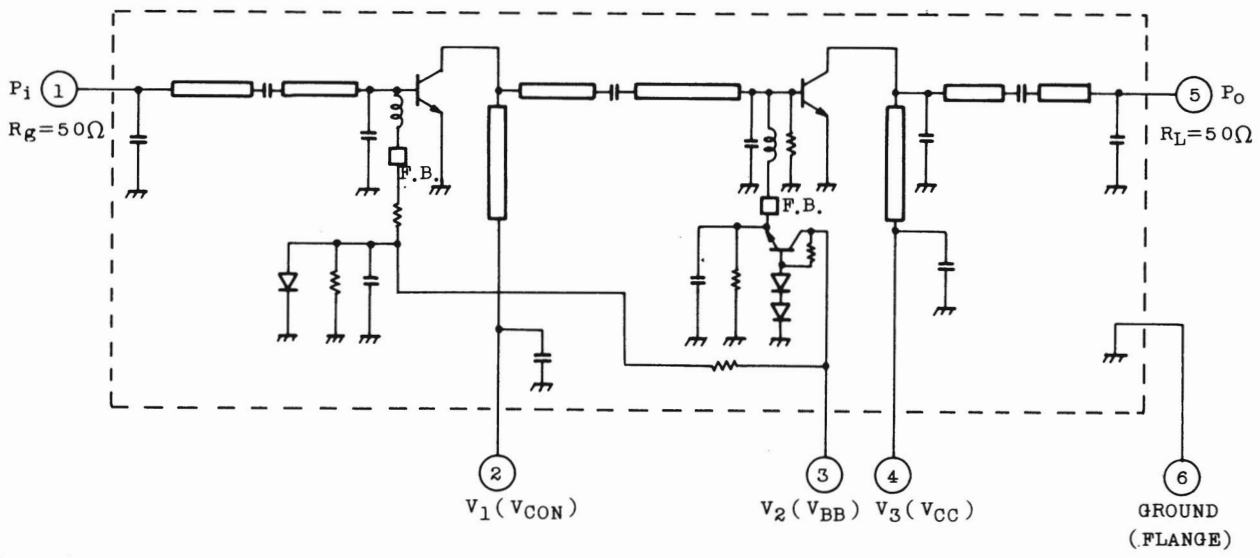
MAXIMUM RATINGS ($T_c$=25°C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---|---|---|---|
| DC Supply Voltage | $V_{CC}$ | 16 | V |
| DC Supply Voltage | $V_{CON}$ | 16 | V |
| RF Input Power | $P_i$ | 300 | mW |
| Operating Case Temperature Range | $T_c$(OP) | -30 ~ 100 | °C |
| Storage Temperature Range | $T_{stg}$ | -40 ~ 110 | °C |

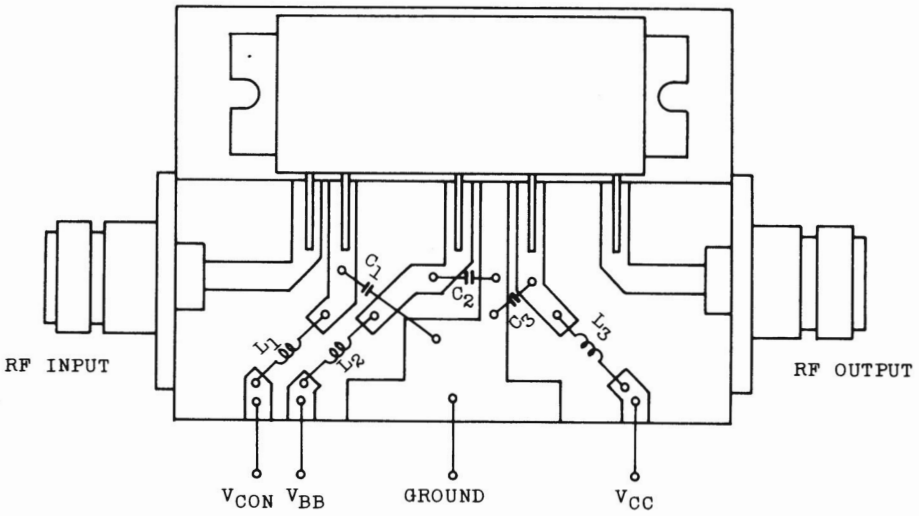
CHARACTERISTICS ($T_c$=25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Frequency Range | $f_{range}$ | - | 430 | - | 450 | MHz |
| Output Power | $P_o$ | $P_i$=200mW<br>$V_{CC}$=12.5V, $V_{CON}$=12.5V<br>$Z_g=Z_l=50\Omega$ | 17 | 20 | - | W |
| Power Gain | $G_P$ | | 19.2 | 20 | - | dB |
| Total Efficiency | $\eta_T$ | | 35 | 45 | - | % |
| Input VSWR | $VSWR_{in}$ | | - | 1.5 | 2 | - |
| Harmonics | HRM | | - | -30 | -25 | dB |
| Load Mismatch | - | $V_{CC}$=15V, $V_{CON}$=12.5V<br>$P_o$=20W<br>VSWR load 20:1 all phase | No Degradation | | | - |
| Stability | - | $V_{CC}$=12.5V, $P_i$=200mW<br>$V_{CON}$=0 ~ 12.5V<br>VSWR Load 3:1 all phase | All spurious output than 60dB below desired signal | | | - |
| Intermodulation Distortion Ratio | IMD | $f_1$=440.000MHz, $f_2$=440.002MHz<br>$V_{CC}=V_{CON}$=12.5V, $V_{BB}$=9V<br>$P_o$=13W$_{PEP}$ | - | -32 | - | dB |

SCHEMATIC



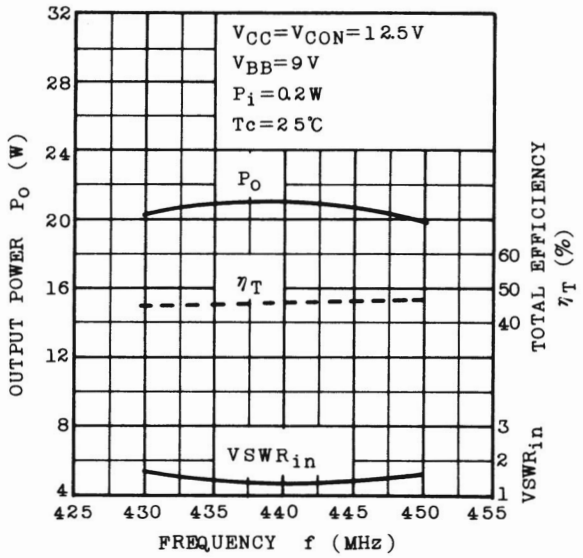

TEST MOUNT



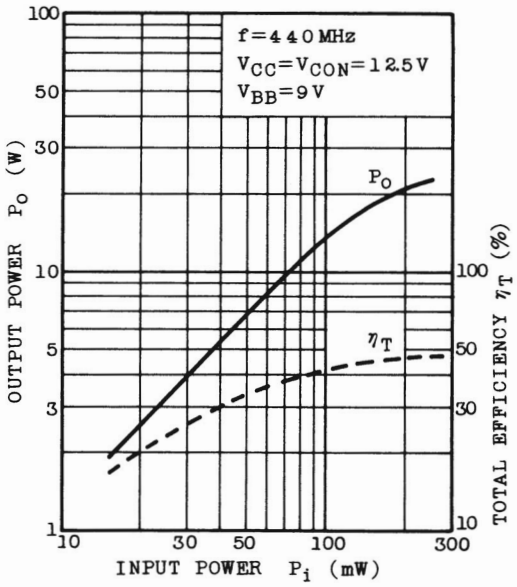

$C_1, C_2, C_3$ : 1500pF, 10$\mu$F

$L_1, L_2, L_3$ : Ø0.8 COPPER WIRE , 8T, 5ID

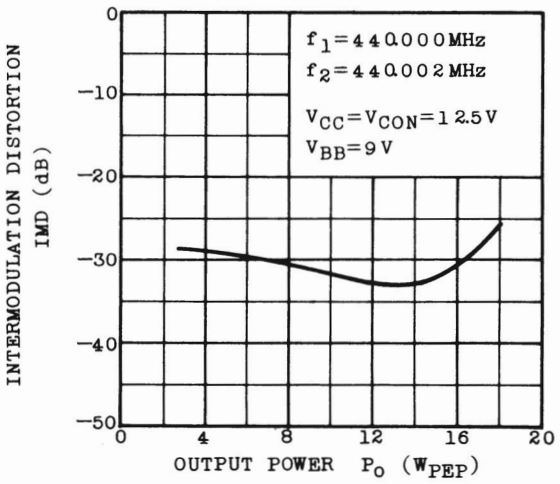
$P_O, \eta_T, VSWR_{in} - f$




$P_O, \eta_T - P_i$




IMD − $P_O$




$P_O, \eta_T - V_{CON}$