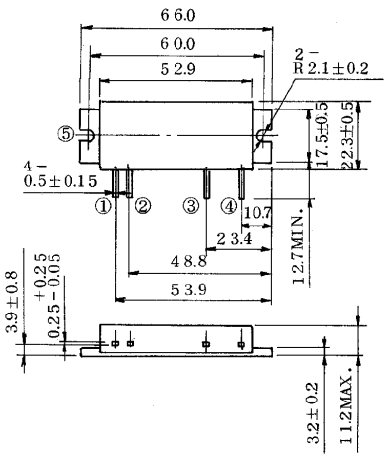
TOSHIBA RF POWER AMPLIFIER MODULE

# S-AV17

VHF 50W FM RF POWER AMPLIFIER MODULE

HAM Application

Unit in mm




1. INPUT
2. $V_{CON}$
3. $V_{CC}$
4. OUTPUT
5. GROUND (FLANGE)

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

Weight : 35g

MAXIMUM RATINGS (Tc = 25°C)

| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|---|---|---|---|---|
| DC Supply Voltage | | $V_{CC}$ | 16 | V |
| DC Supply Voltage | | $V_{CON}$ | 16 | V |
| Total Current | | $I_T$ | 14 | A |
| Input Power | | Pi | 600 | mW |
| Output Power | @ $12.5V < V_{CC} \leqq 16V$, $V_{CON} \leqq 12.5V$, Pi = 400mW, $Z_G = Z_L = 50\Omega$ | Po | 65 | W |
| Operating Case Temperature Range | | $T_{c\,(opr)}$ | −30~100 | °C |
| Storage Temperature Range | | $T_{stg}$ | −40~110 | °C |

ELECTRICAL CHARACTERISTICS (Tc = 25°C)

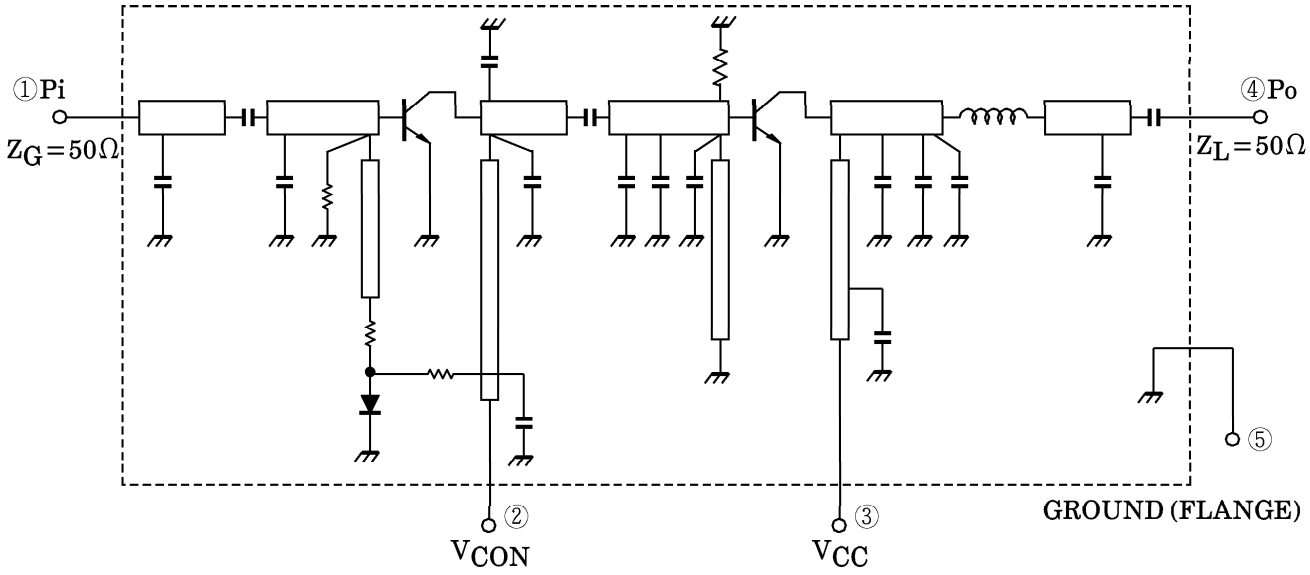
| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Frequency Range | $f_{range}$ | — | 144 | — | 148 | MHz |
| Output Power | Po | Pi = 400mW, $V_{CC} = V_{CON} = 12.5V$, $Z_G = Z_L = 50\Omega$ | 60 | — | — | W |
| Power Gain | $G_p$ | | 21.7 | — | — | dB |
| Total Efficiency | $\eta_T$ | | 45 | — | — | % |
| Input VSWR | VSWRin | | — | 1.5 | 2.0 | — |
| Harmonics | HRM | | — | −30 | −25 | dB |
| Load Mismatch | — | Po = 60W ($V_{CON}$ = adjust), $V_{CC}$ = 15V, Pi = 400mW, VSWR load 20 : 1 all phase | No Degradation | | | — |
| Stability | — | $V_{CC}$ = 12.5V, $V_{CON}$ = 0~12.5V, Pi = 400mW, VSWR load 3 : 1 all phase | All spurious output than 60dB below desired signal | | | — |

CAUTION

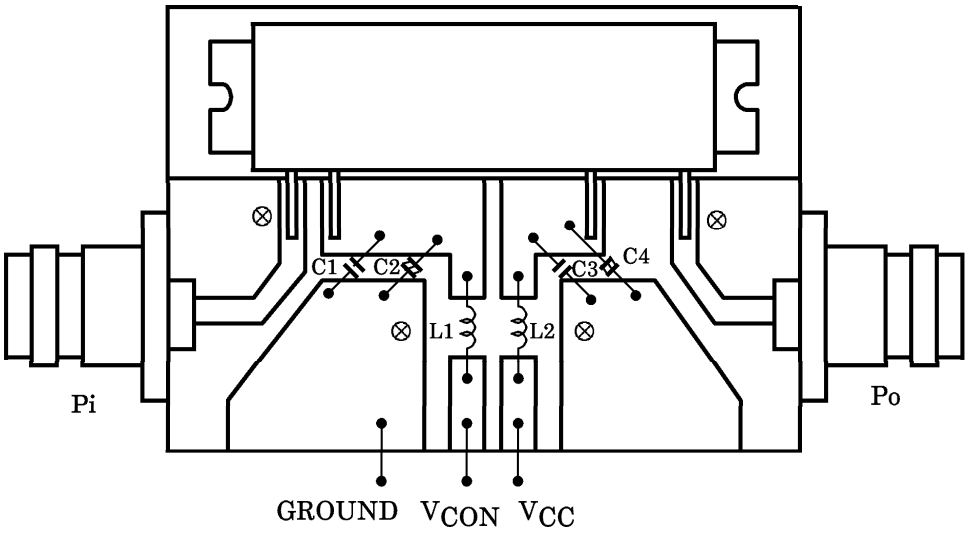
- This product has intersetting cap. Please pay attention for exceeding stress and foreign matter in your application. And not to take away the cap.
- Beryllia Ceramics is used in this product. The dust or vapor can be dangerous to humans. Do not break, cut, crush or dissolve chemically. Dispose of this product properly according to law. Do not intermingle with normal industrial or domestic waste.

961001EAA2

SCHEMATIC



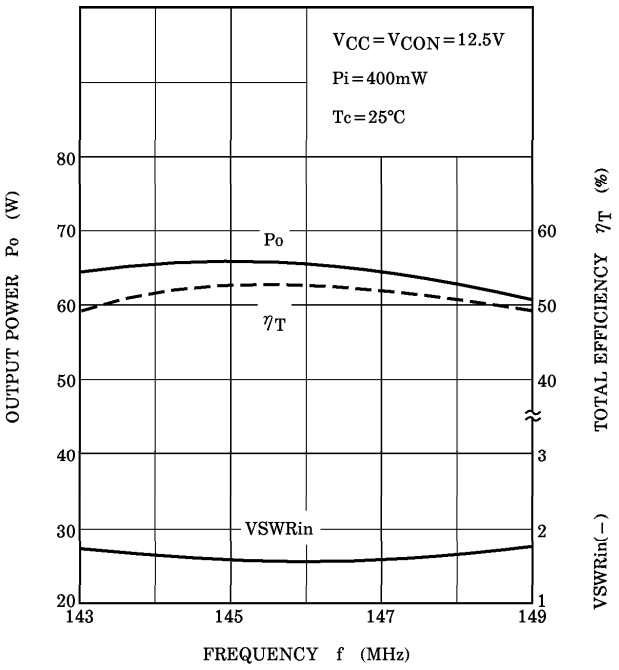

TEST FIXTURE



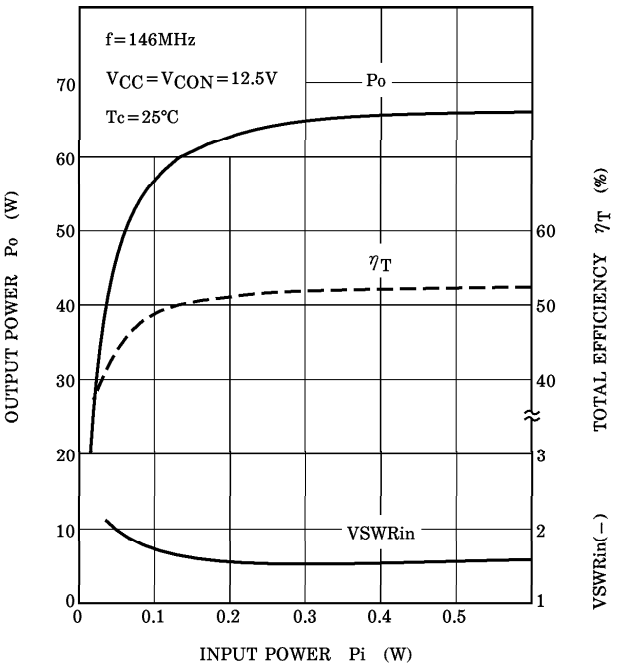

C1, C3 : 1500pF
C2, C4 : 10$\mu$F
L1, L2 : $\phi$0.8ENAMEL WIRE, 8T, 5ID

961001EAA2'

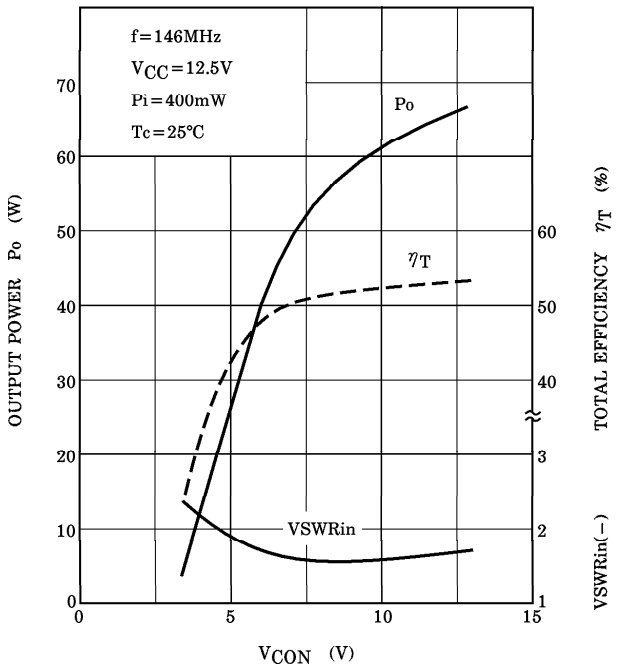
Po, $\eta_T$, VSWRin – f



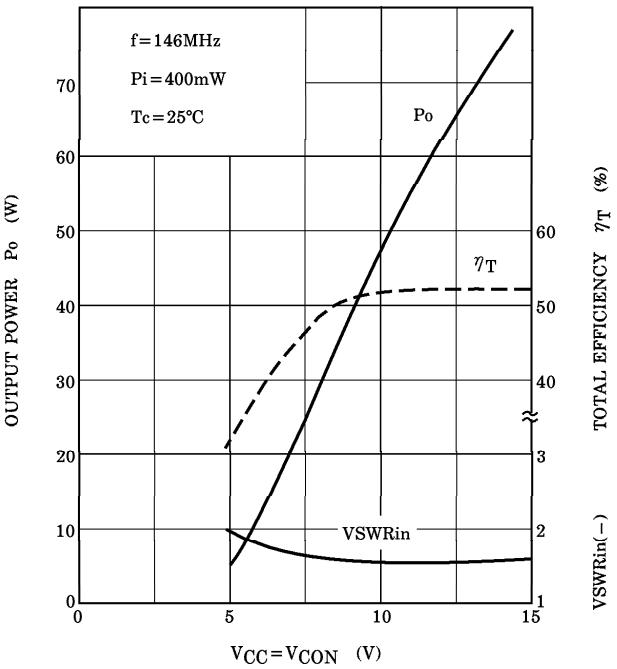

Po, $\eta_T$, VSWRin – Pi




Po, $\eta_T$, VSWRin – $V_{CON}$




Po, $\eta_T$, VSWRin – $V_{CC}$, $V_{CON}$




CAUTION

These are only typical curves and devices are not necessarily guaranteed at these curves.