

## TOSHIBA RF POWER AMPLIFIER MODULE

**S - A V 3 0 H**

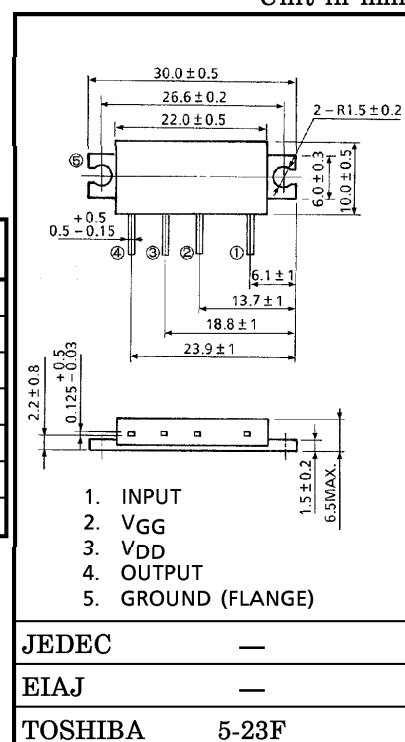
VHF BAND FM POWER AMPLIFIER MODULE

HAND-HELD TRANSCEIVER

Unit in mm

MAXIMUM RATINGS ( $T_c = 25^\circ\text{C}$ )

| CHARACTERISTIC                   | SYMBOL       | RATING         | UNIT             |
|----------------------------------|--------------|----------------|------------------|
| DC Supply Voltage                | $V_{DD}$     | 17             | V                |
| DC Supply Voltage                | $V_{GG}$     | 6              | V                |
| Input Power                      | $P_i$        | 50             | mW               |
| Output Power                     | $P_o$        | 12             | W                |
| Total Current                    | $I_T$        | 3              | A                |
| Operating Case Temperature Range | $T_{c(opr)}$ | $-30 \sim 100$ | $^\circ\text{C}$ |
| Storage Temperature Range        | $T_{stg}$    | $-40 \sim 110$ | $^\circ\text{C}$ |

ELECTRICAL CHARACTERISTICS ( $T_c = 25^\circ\text{C}$ )

Weight : 3.5g

| CHARACTERISTIC   | SYMBOL             | TEST CONDITION                                                                                 | MIN.                                                     | TYP. | MAX. | UNIT |
|------------------|--------------------|------------------------------------------------------------------------------------------------|----------------------------------------------------------|------|------|------|
| Frequency Range  | $f_{range}$        | —                                                                                              | 144                                                      | —    | 174  | MHz  |
| Output Power (1) | $P_o(1)$           | $V_{GG}=4V$ , $P_i=20mW$                                                                       | 7.0                                                      | —    | —    | W    |
| Output Power (2) | $P_o(2)$           | $Z_G=Z_L=50\Omega$                                                                             | 2.8                                                      | —    | —    |      |
| Power Gain       | $G_p$              | $V_{DD}=9.6V$ , $V_{GG}=4V$                                                                    | 25.4                                                     | —    | —    | dB   |
| Total Efficiency | $\eta_T$           | $P_i=20mW$ , $Z_G=Z_L=50\Omega$                                                                | 48                                                       | —    | —    | %    |
| Input VSWR       | VSWR <sub>in</sub> |                                                                                                | —                                                        | —    | 2.5  | —    |
| Harmonics        | HRM                |                                                                                                | —                                                        | —    | -15  | dB   |
| Load Mismatch    | —                  | $V_{DD}=15V$ , $P_i=20mW$<br>$P_o=7W$ ( $V_{GG}=\text{adjust}$ )<br>VSWR LOAD 20 : 1 ALL PHASE | No Degradation                                           |      |      | —    |
| Stability        | —                  | $V_{DD}=4 \sim 16V$ , $V_{GG}=0 \sim 4V$<br>$P_i=20mW$<br>VSWR LOAD 3 : 1 ALL PHASE            | All spurious output<br>than 60dB below<br>desired signal |      |      | —    |

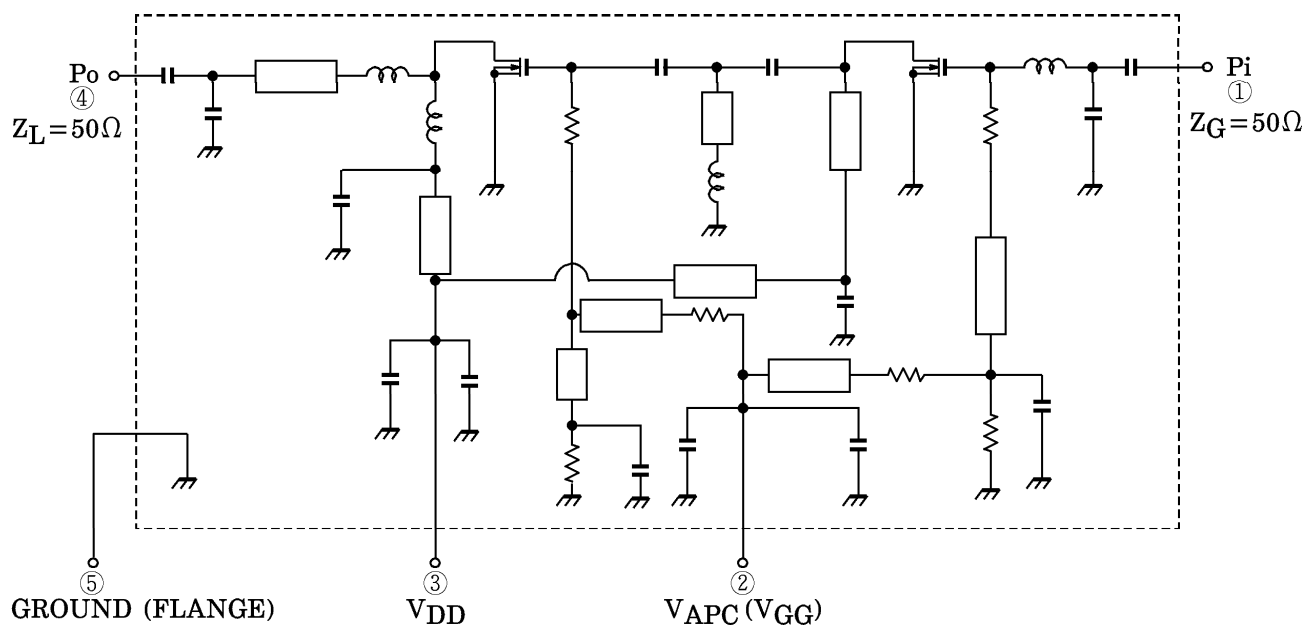
## CAUTION

- This product has intersetting cap. Please pay attention for exceeding stress and foreign matter in your application. And not to take away the cap.
- Do not intermingle with normal industrial or domestic waste.
- This product is electrostatic sensitivity, please handle with caution.

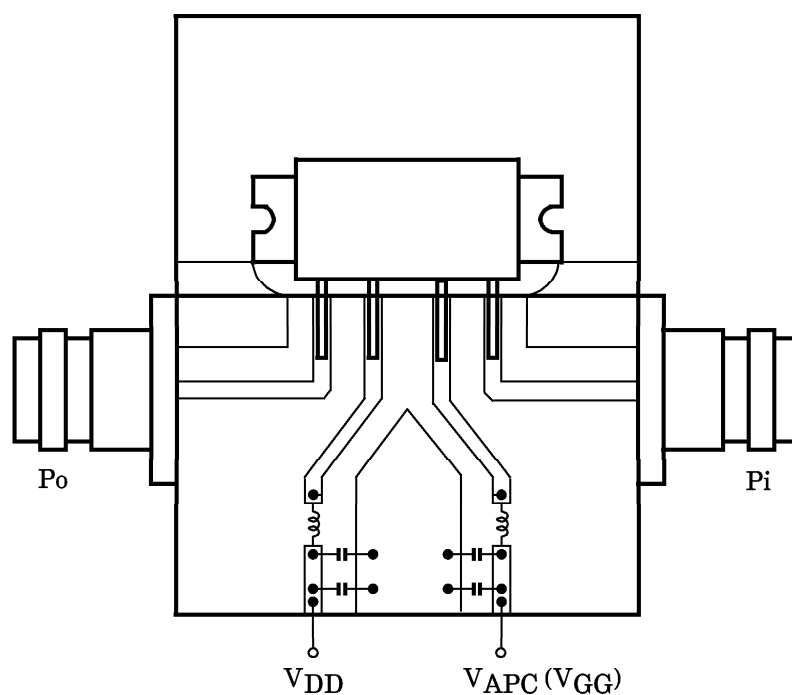
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**SCHEMATIC**



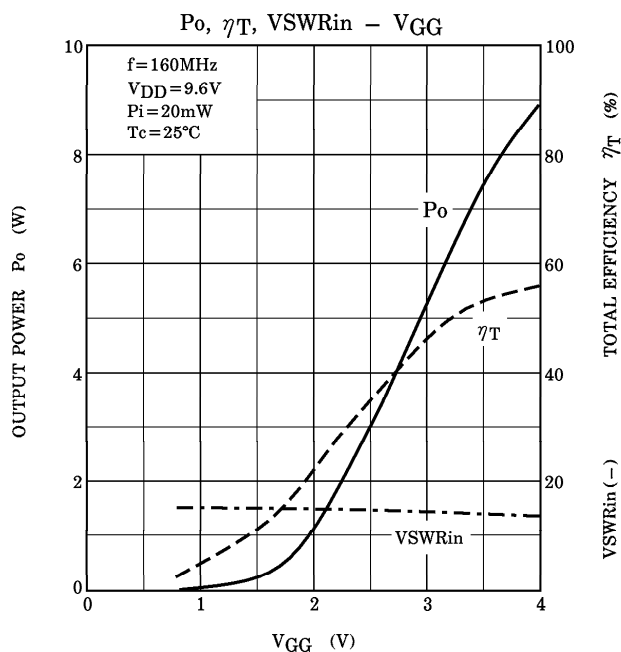
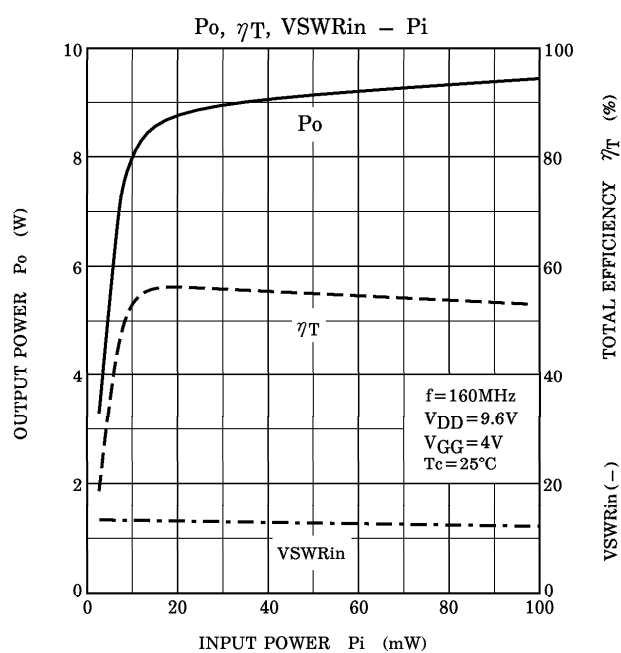
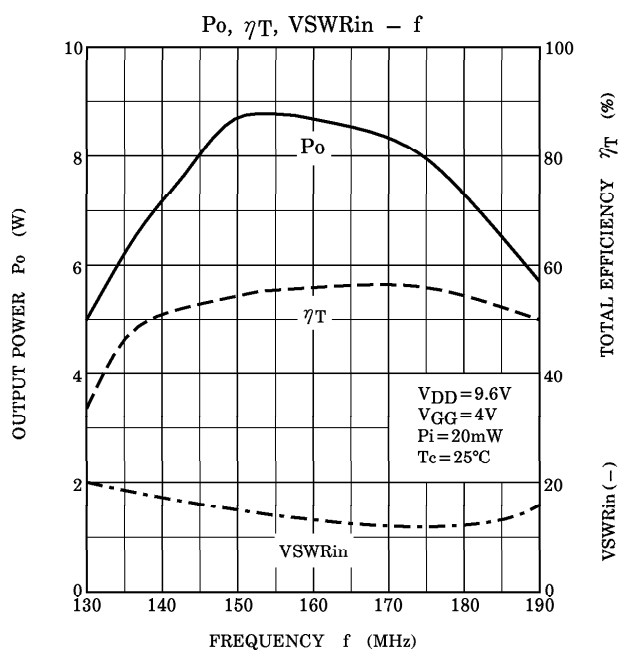
**TEST FIXTURE**



C : 10000pF, 10 $\mu$ F PARALLEL  
L :  $\phi 0.5$ , 3ID, 5T ENAMEL WIRE

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## CAUTION

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