

TOSHIBA RF POWER AMPLIFIER MODULE

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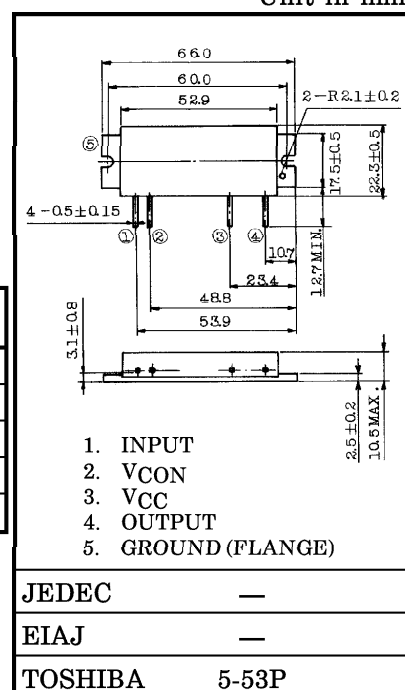
VHF HAM FM RF POWER AMPLIFIER MODULE

Unit in mm

- High Gain : $P_o \geq 28\text{W}$, $G_p \geq 21.4\text{dB}$, $\eta_T \geq 45\%$

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
DC Supply Voltage	V_{CC}	16	V
DC Supply Voltage	V_{CON}	16	V
Input Power	P_i	300	mW
Operating Case Temperature Range	$T_{c(\text{opr})}$	$-30 \sim 100$	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-40 \sim 110$	$^\circ\text{C}$

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

Weight : 35g

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Frequency Range	f_{range}	—	144	—	148	MHz
Output Power	P_o	$P_i = 200\text{mW}$ $V_{CC} = 12.5\text{V}$, $V_{CON} = 12.5\text{V}$ $Z_G = Z_L = 50\Omega$	28	33	—	W
Power Gain	G_p		21.4	22.2	—	dB
Total Efficiency	η_T		45	52	—	%
Input VSWR	$VSWR_{\text{in}}$		—	1.5	2	—
Harmonics	HRM		—	-30	-25	dB
Load Mismatch	—	$V_{CC} = 15\text{V}$, $V_{CON} = 12.5\text{V}$ $P_o = 30\text{W}$ ($P_i = \text{adjust}$) VSWR load 20 : 1 all phase	No Degradation			—
Power Slump	—	$T_c = -30 \sim 80^\circ\text{C}$, $V_{CC} = 12.5\text{V}$ $P_i = 200\text{mW}$, $P_o = 28\text{W}$ (@ $T_c = 25^\circ\text{C}$)	—	0.8	—	dB
Stability	—	$V_{CC} = 12.5\text{V}$, $P_i = 200\text{mW}$ $V_{CON} = 0 \sim 12.5\text{V}$ VSWR load 3 : 1 all phase	All spurious output than 60dB below desired signal			—

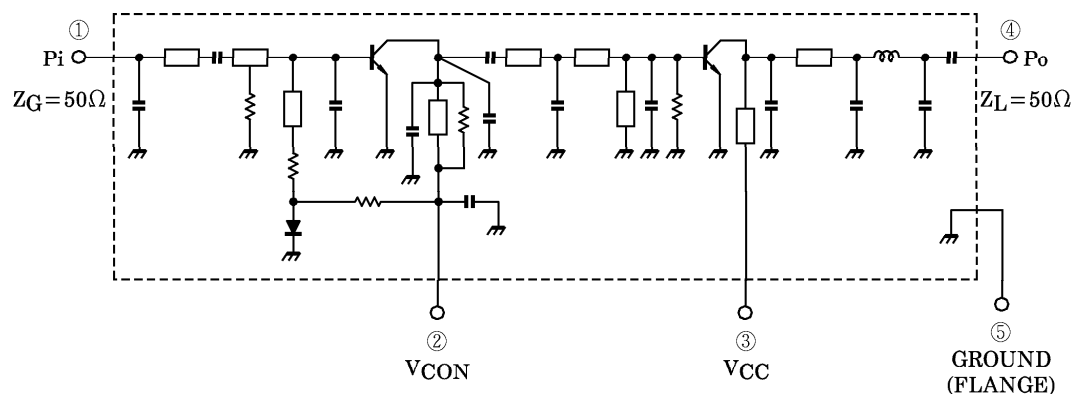
CAUTION

- 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.

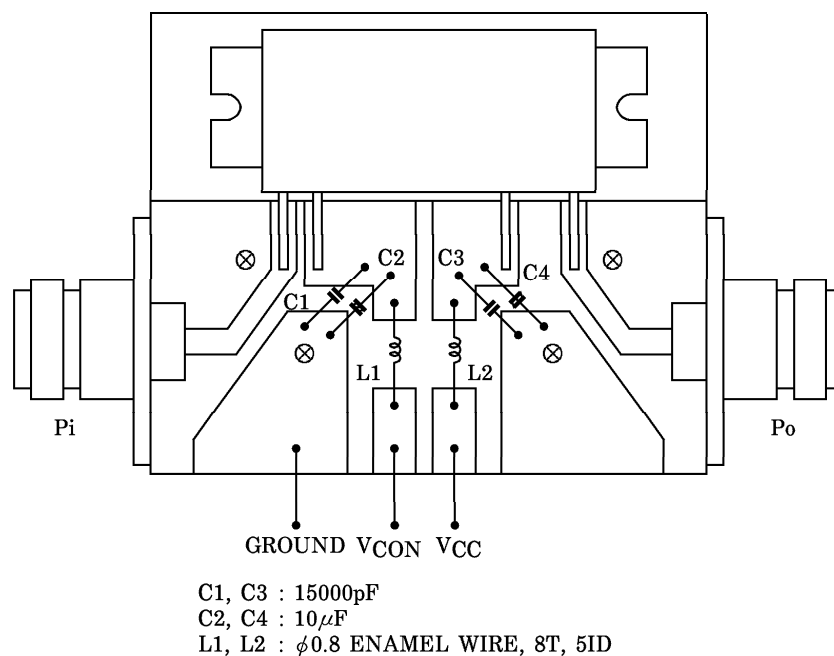
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TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.

SCHEMATIC

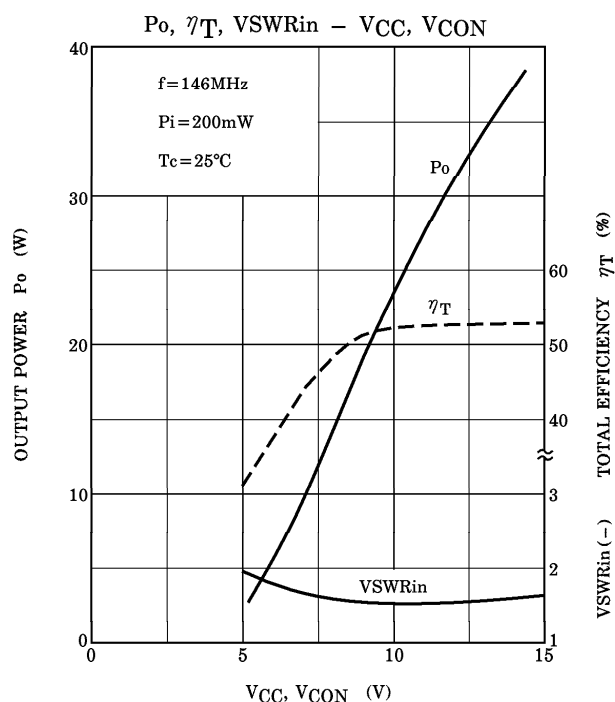
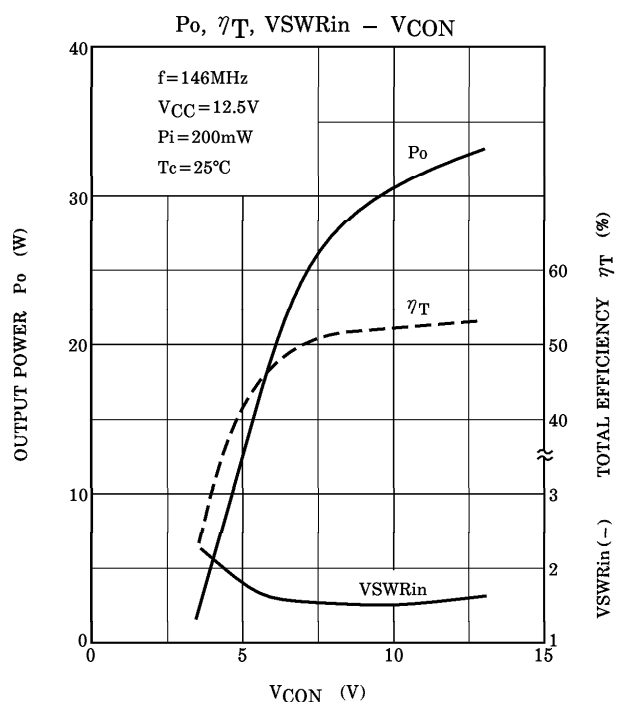
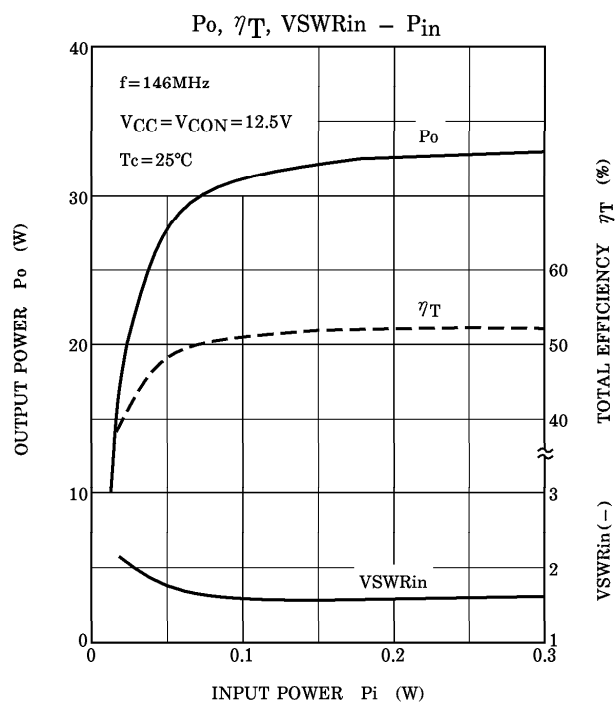
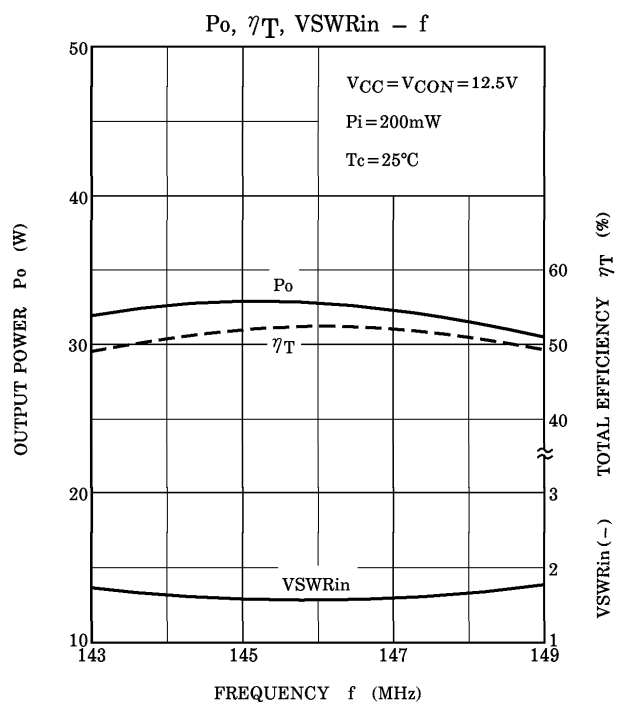


TEST FIXTURE



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CAUTION

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