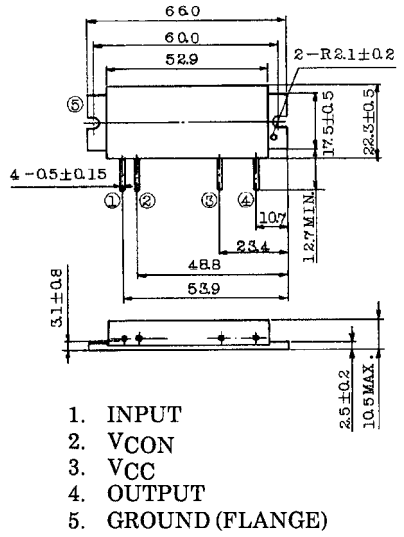
TOSHIBA RF POWER AMPLIFIER MODULE

S−AV7

VHF HAM FM RF POWER AMPLIFIER MODULE

Unit in mm

- High Gain : Po ≥ 28W, G_P ≥ 21.4dB, η_T ≥ 45%



JEDEC	—
EIAJ	—
TOSHIBA	5−53P

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
Input Power	Pi	300	mW
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 = 200mW V_{CC} = 12.5V, V_{CON} = 12.5V Z_G = Z_L = 50Ω	28	33	—	W
Power Gain	G_P		21.4	22.2	—	dB
Total Efficiency	η_T		45	52	—	%
Input VSWR	$VSWR_{in}$		—	1.5	2	—
Harmonics	HRM		—	−30	−25	dB
Load Mismatch	—	V_{CC} = 15V, V_{CON} = 12.5V Po = 30W (Pi = adjust) VSWR load 20: 1 all phase	No Degradation			—
Power Slump	—	Tc =−30~80°C, V_{CC} = 12.5V Pi = 200mW, Po = 28W (@Tc = 25°C)	—	0.8	—	dB
Stability	—	V_{CC} = 12.5V, Pi = 200mW V_{CON} = 0~12.5V VSWR load 3: 1 all phase	All spurious output than 60dB below desired signal			—

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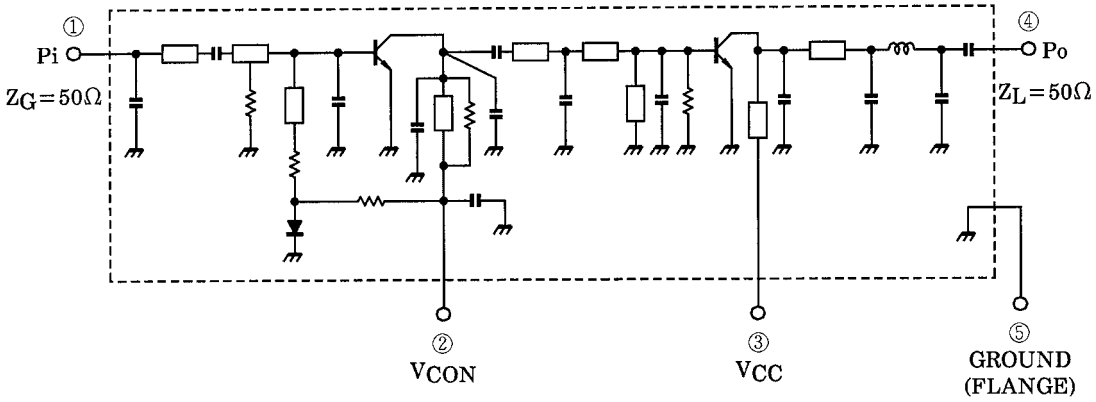
• TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products 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 TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the “Handling Guide for Semiconductor Devices,” or “TOSHIBA Semiconductor Reliability Handbook” etc..

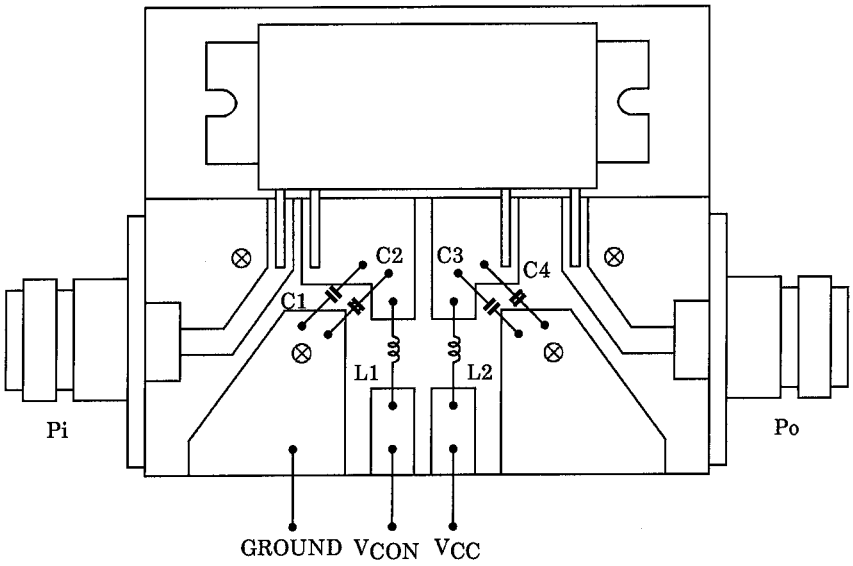
CAUTION

- 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.

SCHEMATIC



TEST FIXTURE



C1, C3 : 15000pF
C2, C4 : 10μF
L1, L2 : ϕ0.8 ENAMEL WIRE, 8T, 5ID

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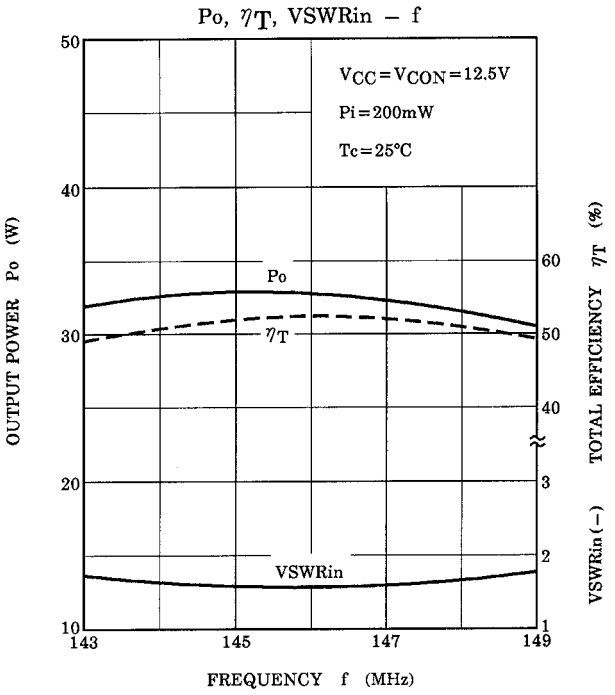

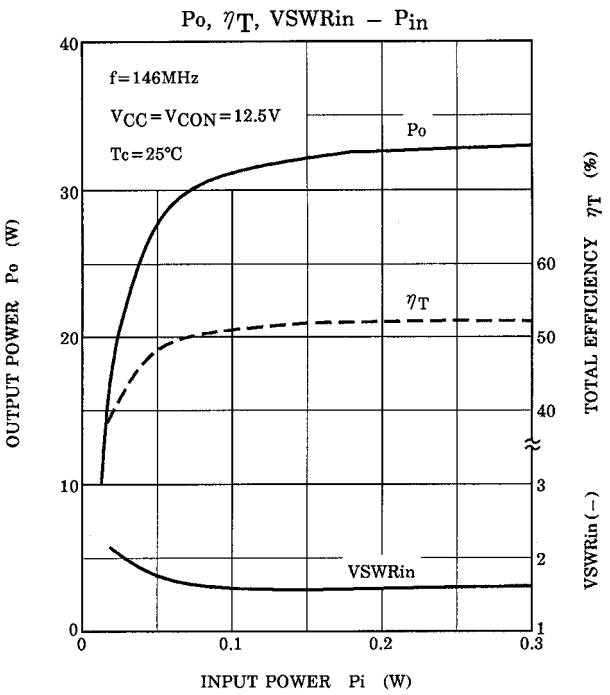

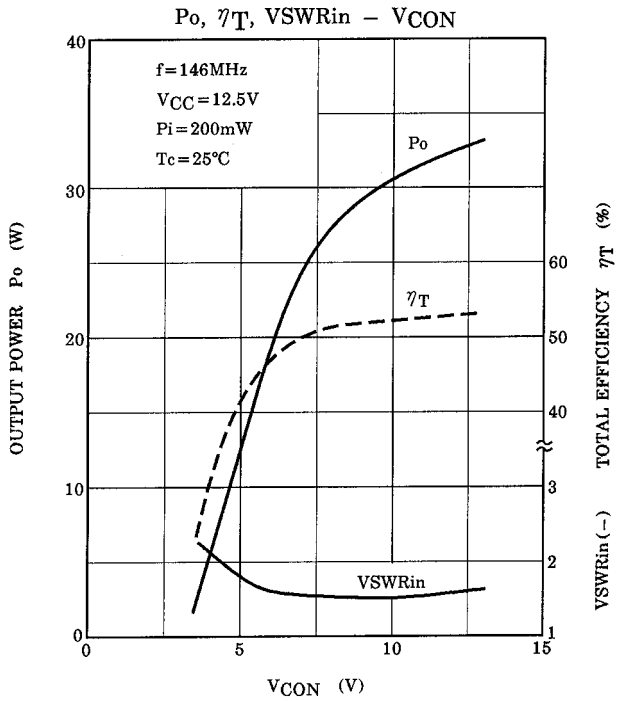

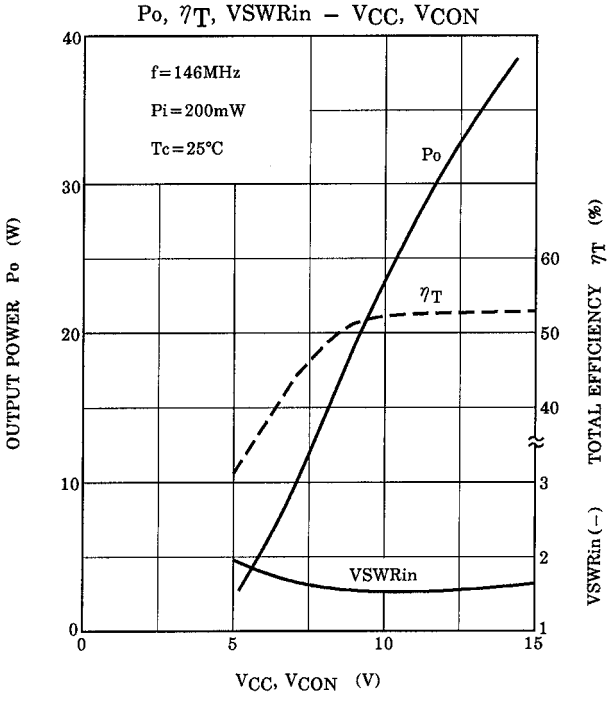

CAUTION

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