TOSHIBA RF POWER AMPLIFIER MODULE

S−AV38

○RF POWER AMPLIFIER MODULE for VHF BAND

· for digital use

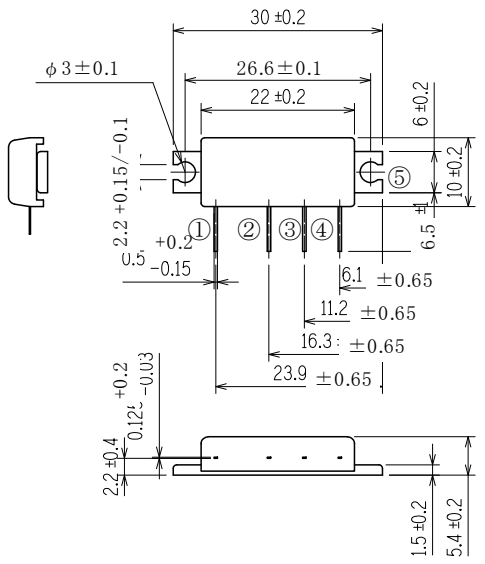
ABSOLUTE MAXIMUM RATINGS (Tc = 25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
DC Supply Voltage	V_{DD}	17	V
DC Supply Voltage	V_{GG}	7	V
Input Power	Pi	17	dBmW
Operating Case Temperature Range	$T_{c\ (opr)}$	−30~100	℃
Storage Temperature Range	T_{stg}	−40~110	℃

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings and the operating ranges.
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook (“Handling Precautions”/“Derating Concept and Methods”) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

PACKAGE OUTLINE

Unit in mm



1. RF INPUT
2. VGG
3. VDD
4. RF OUTPUT
5. GROUND (FLANGE)

JEDEC	-
JEITA	-
TOSHIBA	5-23F

Weight:3.5g

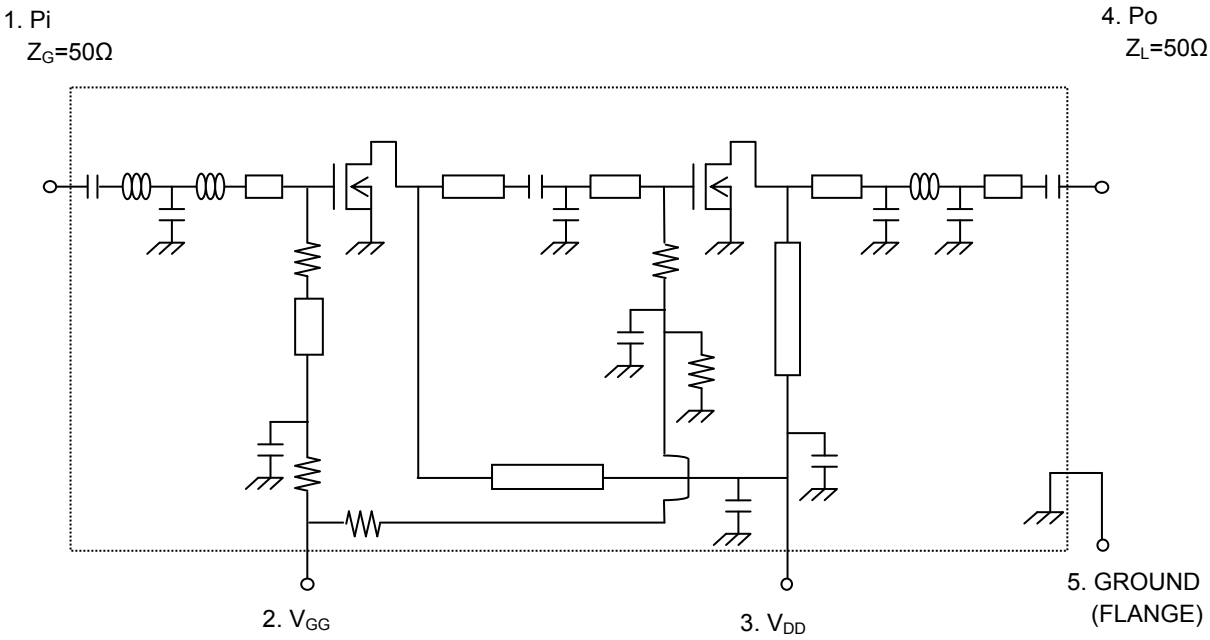
ELECTRICAL CHARACTERISTICS (Tc = 25℃, Z_G = 50Ω)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Frequency Range	f_{range}	—	260	—	266	MHz
Output Power	Po	V_{DD} = 7.2V, Po=35dBmW(Pi=adjust) I_{DD}=1.7A(V_{GG} = adjust) , Z_L = 50Ω After that Pi = 15dBmW	38.8	—	—	dBmW
Input Power	Pi	V_{DD} = 7.2V, I_{DD} = 1.7A (V_{GG} = adjust) Po = 35dBmW(Pi=adjust), Z_L = 50Ω	—	—	5	dBmW
Gate Bias Voltage	V_{GG}	V_{DD} = 7.2V, I_{DD} = 1.7A (V_{GG} = adjust) Po = 35dBmW(Pi=adjust), Z_L = 50Ω	2.5	—	3.5	V
Gate Bias Current	I_{GGBias}	V_{DD} = 7.2V, I_{DD} = 1.7A (V_{GG} = adjust) Po = 35dBmW (Pi= adjust), Z_L = 50Ω After that Pi OFF	—	—	1	mA
Adjacent-Channel Power Ratio	ACP	V_{DD} = 7.2V, I_{DD} = 1.7A (V_{GG} = adjust) Po = 35dBmW (Pi= adjust), Z_L = 50Ω Modulated Wave : π/4·DQPSK (α=0.5, 32kbps) Band Width : 16kHz Frequency Offset : 25kHz	—	—	-35	dB
Second Harmonic	2nd HRM	V_{DD} = 7.2V, I_{DD} = 1.7A (V_{GG} = adjust) Po = 35dBmW (Pi= adjust), Z_L = 50Ω	—	—	-27	dB
Third Harmonic	3rd HRM		—	—	-30	dB
Harmonic	HRM		—	—	-35	dB
Rate of Adjustment for Input Load	VSWRin	Input VSWR (When RF output pin connects 50Ω Load)	—	—	3	—
Rate of Adjustment for Output Load	VSWRout	Input VSWR (When RF input pin connects 50Ω Load)	—	—	2.5	—
Ralative Phase Variation	—	V_{DD}= 7.2V, I_{DD} = 1.7A (V_{GG} = adjust) Po = 5 to 35dBmW (Pi= adjust) Z_L = 50Ω (@ Po = 35dBmW)	—	—	±12	°
Load Mismatch	—	V_{DD} = 7.2V, I_{DD} = 1.7A (V_{GG} = adjust) Po = 35dBmW (Pi= adjust, Z_L = 50Ω) VSWR LOAD 20: 1 ALL PHASE	No Degradation			—
Stability	—	V_{DD} = 6.0 to 9.0V, V_{GG} = 1 to 5V Pi = -40 to 13 dBmW VSWR LOAD 3: 1 ALL PHASE	All spurious output than 60dB below desired signal			—

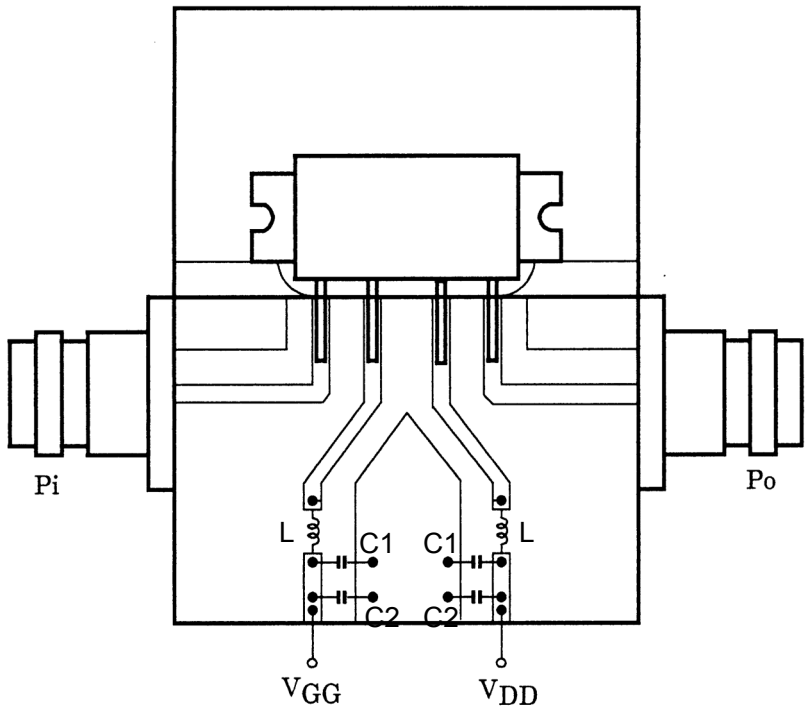
Caution

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

SCHEMATIC



TEST FIXTURE



C1 : 10000pF
C2 : 10 μ F
L : ϕ 0.8 ENAMEL WIRE 8T 5ID

RESTRICTIONS ON PRODUCT USE

20070701-EN GENERAL

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  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.
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