

TOSHIBA Rf Power Amplifier Module

S-AV38

Orf power amplifier module for vhf band
· for digital use

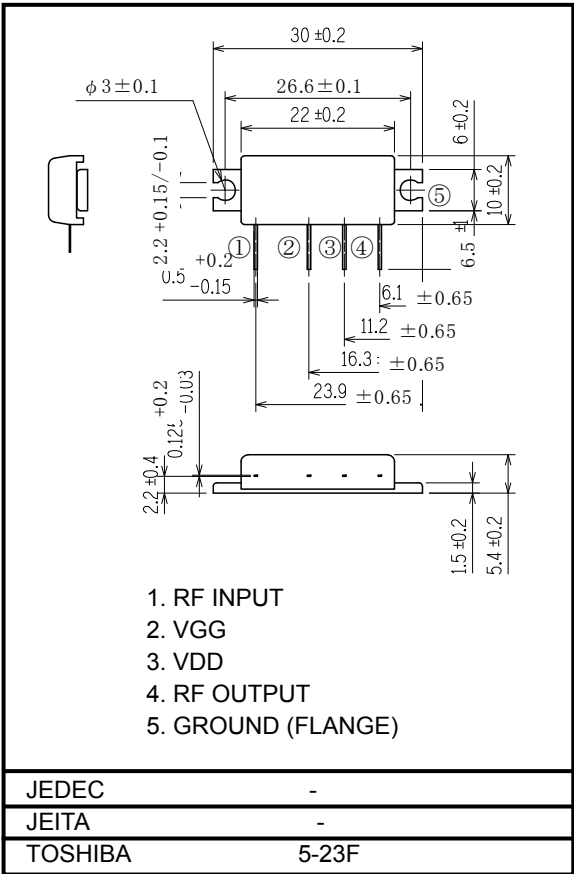
Absolute Maximum Ratings (Tc = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
DC Supply Voltage	V _{DD}	17	V
DC Supply Voltage	V _{GG}	7	V
Input Power	P _i	17	dBmW
Operating Case Temperature Range	T _{c (opr)}	-30~100	°C
Storage Temperature Range	T _{stg}	-40~110	°C

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



Weight:3.5g (type.)

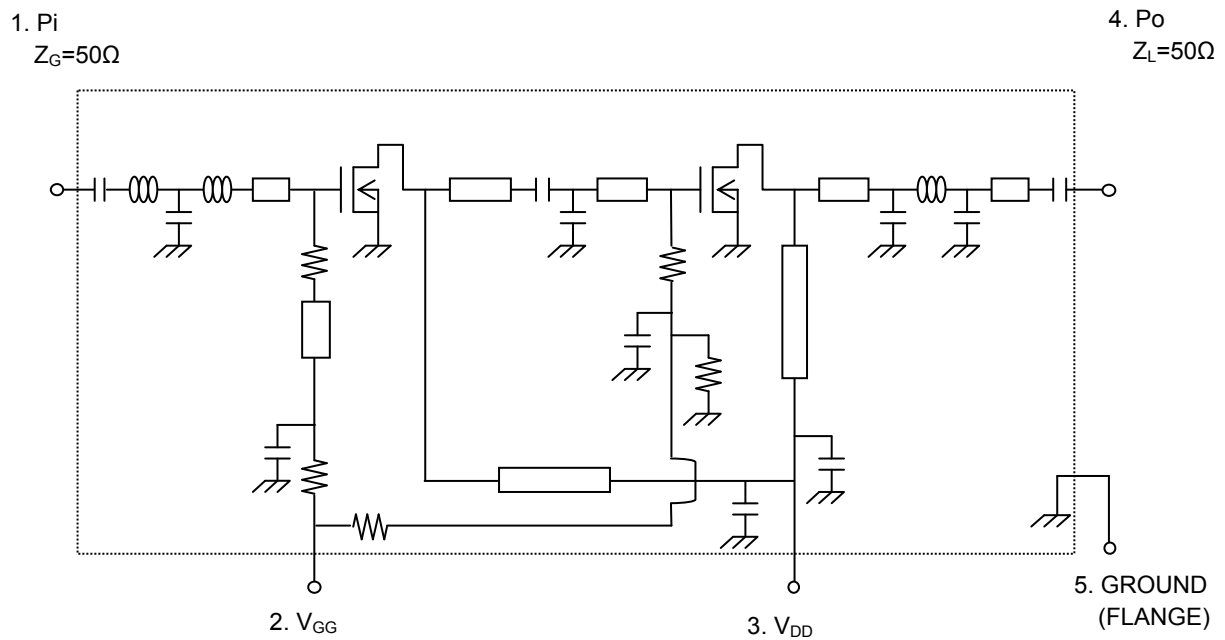
Electrical Characteristics (T_c = 25°C, Z_G = 50 Ω)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Frequency Range	f _{range}	—	260	—	266	MHz
Output Power	P _o	V _{DD} = 7.2V, P _o =35dBmW(P _i =adjust) I _{DD} =1.7A(V _{GG} = adjust), Z _L = 50 Ω After that P _i = 15dBmW	38.8	—	—	dBmW
Input Power	P _i	V _{DD} = 7.2V, I _{DD} = 1.7A (V _{GG} = adjust) P _o = 35dBmW(P _i =adjust), Z _L = 50 Ω	—	—	5	dBmW
Gate Bias Voltage	V _{GG}	V _{DD} = 7.2V, I _{DD} = 1.7A (V _{GG} = adjust) P _o = 35dBmW(P _i =adjust), Z _L = 50 Ω	2.5	—	3.5	V
Gate Bias Current	I _{GGBias}	V _{DD} = 7.2V, I _{DD} = 1.7A (V _{GG} = adjust) P _o = 35dBmW (P _i = adjust), Z _L = 50 Ω After that P _i OFF	—	—	1	mA
Adjacent-Channel Power Ratio	ACP	V _{DD} = 7.2V, I _{DD} = 1.7A (V _{GG} = adjust) P _o = 35dBmW (P _i = adjust), Z _L = 50 Ω 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) P _o = 35dBmW (P _i = adjust), Z _L = 50 Ω	—	—	-27	dB
Third Harmonic	3rd HRM		—	—	-30	dB
Harmonic	HRM		—	—	-35	dB
Rate of Adjustment for Input Load	VSWR _{in}	Input VSWR (When RF output pin connects 50 Ω Load)	—	—	3	—
Rate of Adjustment for Output Load	VSWR _{out}	Input VSWR (When RF input pin connects 50 Ω Load)	—	—	2.5	—
Relative Phase Variation	—	V _{DD} = 7.2V, I _{DD} = 1.7A (V _{GG} = adjust) P _o = 5 to 35dBmW (P _i = adjust) Z _L = 50 Ω (@ P _o = 35dBmW)	—	—	± 12	°
Load Mismatch	—	V _{DD} = 7.2V, I _{DD} = 1.7A (V _{GG} = adjust) P _o = 35dBmW (P _i = adjust, Z _L = 50 Ω) VSWR LOAD 20: 1 ALL PHASE	No Degradation			—
Stability	—	V _{DD} = 6.0 to 9.0V, V _{GG} = 1 to 5V P _i = -40 to 13 dBmW VSWR LOAD 3: 1 ALL PHASE	All spurious output than 60dB below desired signal			—

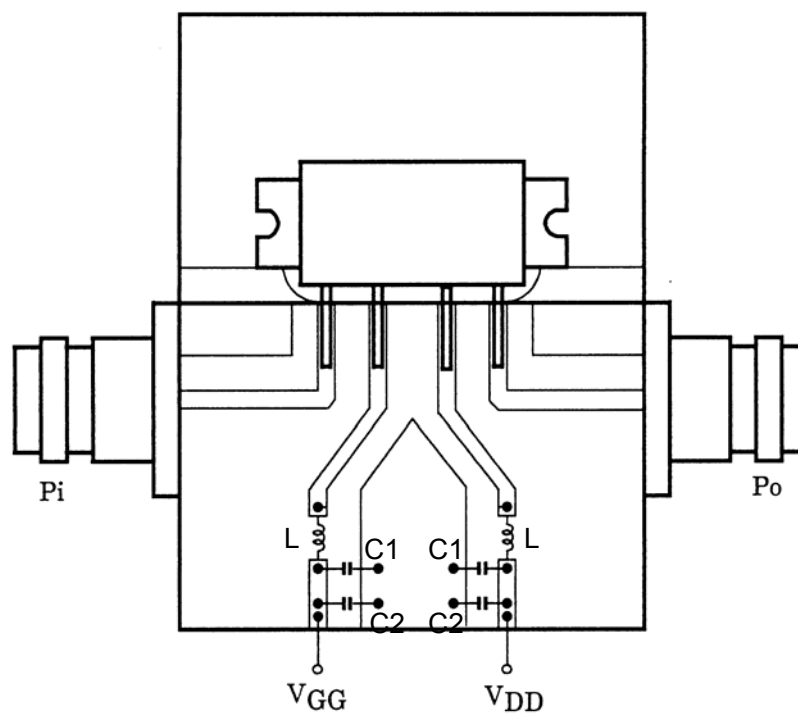
Caution

- 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

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