

TOSHIBA RF POWER AMPLIFIER MODULE

S-AV34

ORF POWER AMPLIFIER MODULE for VHF BAND

· for digital use

ABSOLUTE MAXIMUM RATINGS (T_c = 25°C, Z_G = Z_L = 50 Ω)

CHARACTERISTIC	SYMBOL	TEST CONDITION	RATING	UNIT
DC Supply Voltage	V _{DD}	V _{GG} = 0V, P _i = 0mW	20	V
DC Supply Voltage	V _{GG}	V _{DD} ≤ 10.8V, P _i = 0mW	8	V
Input Power	P _i	V _{DD} ≤ 10.8V	20	dBmW
Junction Temperature	T _j MAX		150	°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.

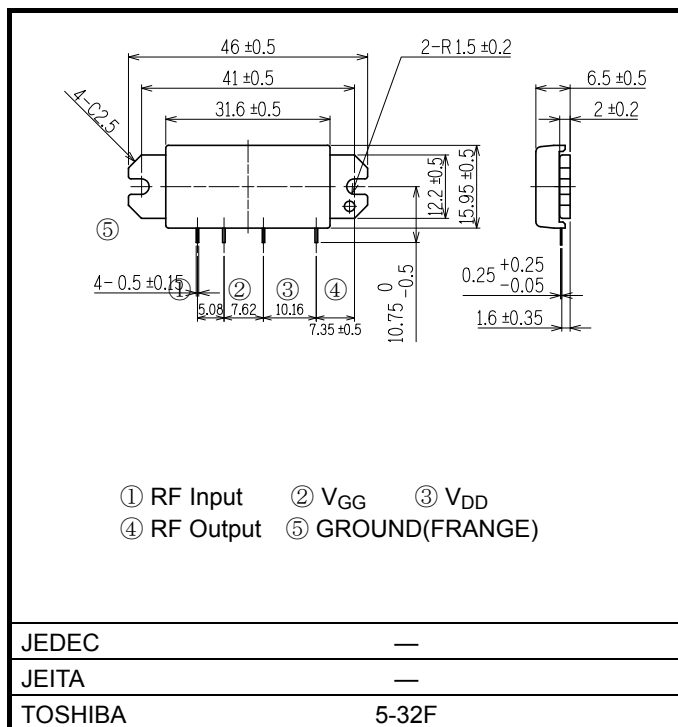
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Caution: This absolute maximum rating given in a sheet guarantees each item independently. When two items or more of maximum rated items joins a device at once. It becomes the outside of a guarantee.

Please design in circuit to make it always operate within this regulation also on the worst condition.

PACKAGE OUTLINE

Unit in mm



Weight: 11.8g

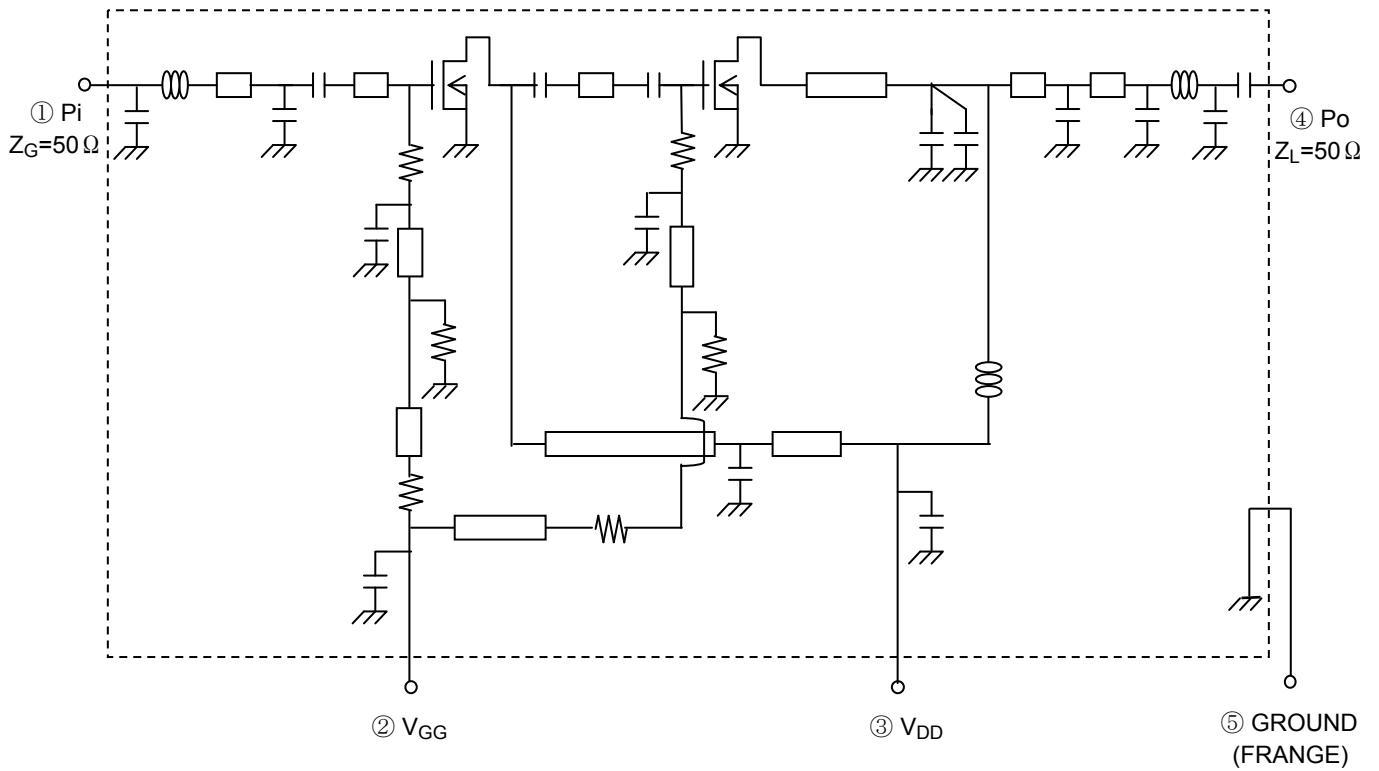
ELECTRICAL CHARACTERISTICS (T_c = 25°C, Z_G = 50 Ω)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Frequency Range	f _{range}	—	150	—	165	MHz
Input Power	P _i	V _{DD} = 10.8V, I _{DD} = 2.8A (V _{GG} = adjust) P _o = 39dBmW, Z _L = 50 Ω	—	—	6	dBmW
Output Power 1	P _{o1}	V _{DD} = 10.8V, V _{GG} = 5V, P _i = 12dBmW Z _L = 50 Ω	43	—	—	dBmW
Total Efficiency	η _T	V _{DD} = 10.8V, P _o = 39dBmW (P _i = adjust) Z _L = 50 Ω	23	—	—	%
Drain Current	I _{DD}		—	—	3	A
Second Harmonic	2nd HRM	V _{DD} = 10.8V, I _{DD} = 2.8A (V _{GG} = adjust) P _o = 39dBmW (P _i = adjust), Z _L = 50 Ω	—	—	-30	dB
Harmonic	HRM		—	—	-30	dB
Adjacent-Channel Power Ratio	ACP	V _{DD} = 10.8V, I _{DD} = 2.8A (V _{GG} = adjust) P _o = 39dBmW (P _i = adjust), Z _L = 50 Ω Modulated Wave : π / 4-DQPSK (α=0.5, 32kbps) Band Width : 16kHz Frequency Offset : 25kHz	—	—	-34	dB
Rate of Adjustment for Input Load	VSWR _{in}	Input VSWR (When RF output pin connects 50 Ω Load)	—	—	3	—
Gate Bias Current	I _{GGBias}	V _{DD} = 10.8V, I _{DD} = 2.8A (V _{GG} = adjust) P _o = 39dBmW (P _i = adjust), Z _L = 50 Ω After that P _i OFF	—	—	5	mA
Output Power 2	P _{o2}	V _{DD} = 8.7V, V _{GG} = 5V, P _i = 5dBmW Z _L = 50 Ω	36	—	—	dBmW
Relative Phase Variation	—	V _{DD} = 10.8V, I _{DD} = 2.8A (V _{GG} = adjust) P _o = 39dBmW (P _i = adjust), Z _L = 50 Ω 0° (@P _o = 28dBmW) P _o = 28 to 41.5dBmW	—	—	20	°
Load Mismatch	—	V _{DD} = 10.8V, I _{DD} = 2.8A (V _{GG} = adjust) P _o = 39dBmW (P _i = adjust, Z _L = 50 Ω) VSWR LOAD 20: 1 ALL PHASE	No Degradation			—
Stability	—	V _{DD} = 8.7 to 13.0V, V _{GG} = 0 to 5V P _i = -40 to 39 dBmW VSWR LOAD 2.5: 1 ALL PHASE	All spurious output than 60dB below desired signal			—

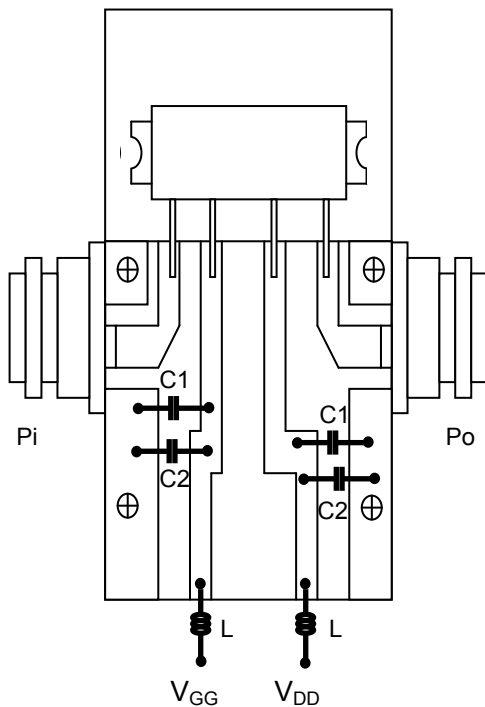
Caution

- 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 0.5 ENAMEL WIRE, 4T, 3ID

RESTRICTIONS ON PRODUCT USE

20070701-EN GENERAL

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