

TOSHIBA RF POWER AMPLIFIER MODULE

S-AV34

RF POWER AMPLIFIER MODULE for VHF BAND

·for digital use

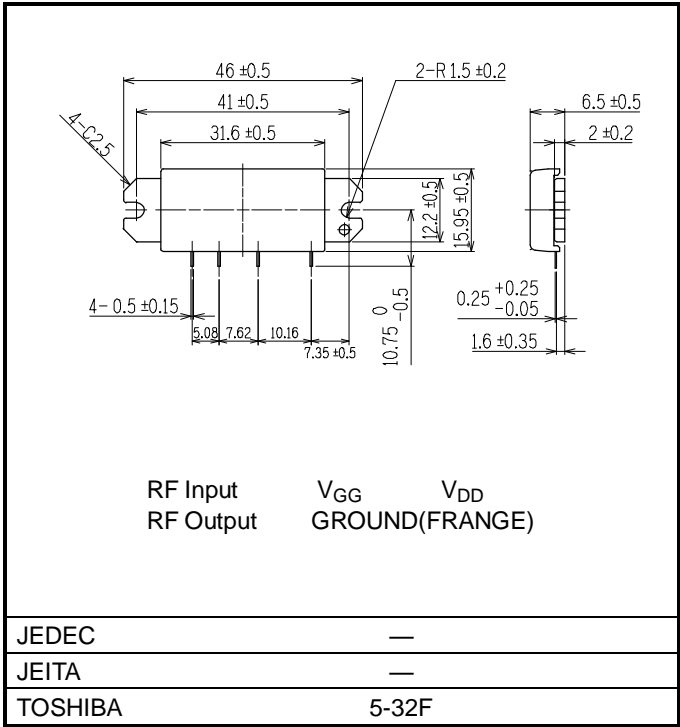
MAXIMUM RATINGS (Tc = 25 , ZG = ZL = 50)

CHARACTERISTIC	SYMBOL	TEST CONDITION	RATING	UNIT
DC Supply Voltage	VDD	VGG =0V, Pi =0mW	20	V
DC Supply Voltage	VGG	VDD 10.8V, Pi =0mW	8	V
Input Power	Pi	VDD 10.8V	20	dBmW
Junction Temperature	Tj MAX		150	
Storage Temperature Range	Tstg		-40~110	

Caution: This 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

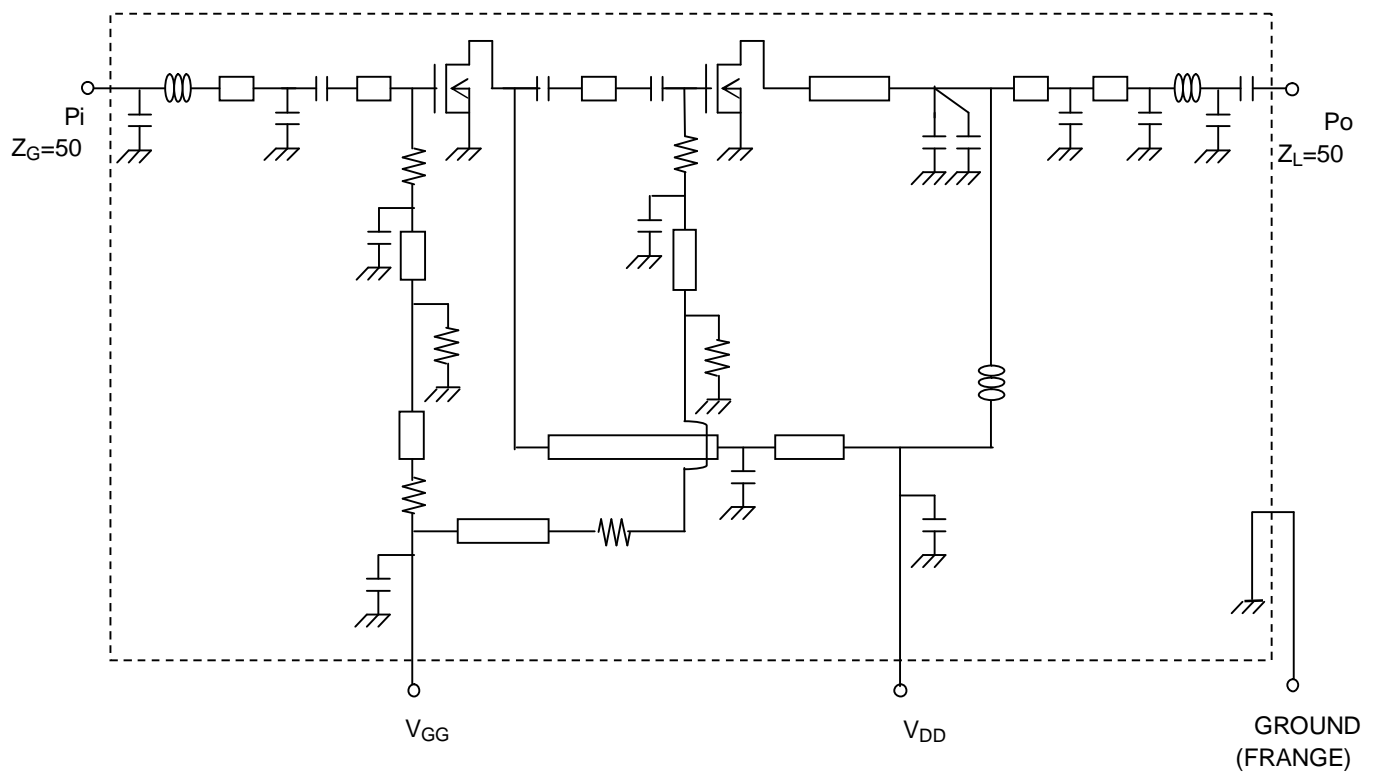
ELECTRICAL CHARACTERISTICS ($T_c = 25^\circ\text{C}$, $Z_G = 50\ \Omega$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Frequency Range	f_{range}	—	150	—	165	MHz
Input Power	P_i	$V_{DD} = 10.8\text{V}$, $I_{DD} = 2.8\text{A}$ ($V_{GG} = \text{adjust}$) $P_o = 39\text{dBmW}$, $Z_L = 50$	—	—	6	dBmW
Output Power 1	P_{o1}	$V_{DD} = 10.8\text{V}$, $V_{GG} = 5\text{V}$, $P_i = 12\text{dBmW}$ $Z_L = 50$	43	—	—	dBmW
Total Efficiency	η	$V_{DD} = 10.8\text{V}$, $P_o = 39\text{dBmW}$ ($P_i = \text{adjust}$) $Z_L = 50$	23	—	—	%
Drain Current	I_{DD}		—	—	3	A
Second Harmonic	2nd HRM	$V_{DD} = 10.8\text{V}$, $I_{DD} = 2.8\text{A}$ ($V_{GG} = \text{adjust}$) $P_o = 39\text{dBmW}$ ($P_i = \text{adjust}$), $Z_L = 50$	—	—	-30	dB
Harmonic	HRM		—	—	-30	dB
Adjacent-Channel Power Ratio	ACP	$V_{DD} = 10.8\text{V}$, $I_{DD} = 2.8\text{A}$ ($V_{GG} = \text{adjust}$) $P_o = 39\text{dBmW}$ ($P_i = \text{adjust}$), $Z_L = 50$ Modulated Wave : 1/4-DQPSK ($\alpha=0.5$, 32kbps) Band Width : 16kHz Frequency Offset : 25kHz	—	—	-34	dB
Rate of Adjustment for Input Load	VSWRin	Input VSWR (When RF output pin connects 50 Ω Load)	—	—	3	—
Gate Bias Current	I_{GGBias}	$V_{DD} = 10.8\text{V}$, $I_{DD} = 2.8\text{A}$ ($V_{GG} = \text{adjust}$) $P_o = 39\text{dBmW}$ ($P_i = \text{adjust}$), $Z_L = 50$ After that P_i OFF	—	—	5	mA
Output Power 2	P_{o2}	$V_{DD} = 8.7\text{V}$, $V_{GG} = 5\text{V}$, $P_i = 5\text{dBmW}$ $Z_L = 50$	36	—	—	dBmW
Relative Phase Variation	—	$V_{DD} = 10.8\text{V}$, $I_{DD} = 2.8\text{A}$ ($V_{GG} = \text{adjust}$) $P_o = 39\text{dBmW}$ ($P_i = \text{adjust}$), $Z_L = 50$ 0° (@ $P_o = 28\text{dBmW}$) $P_o = 28$ to 41.5dBmW	—	—	20	$^\circ$
Load Mismatch	—	$V_{DD} = 10.8\text{V}$, $I_{DD} = 2.8\text{A}$ ($V_{GG} = \text{adjust}$) $P_o = 39\text{dBmW}$ ($P_i = \text{adjust}$, $Z_L = 50\ \Omega$) 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 39dBmW VSWR LOAD 2.5: 1 ALL PHASE	All spurious output than 60dB below desired signal			—

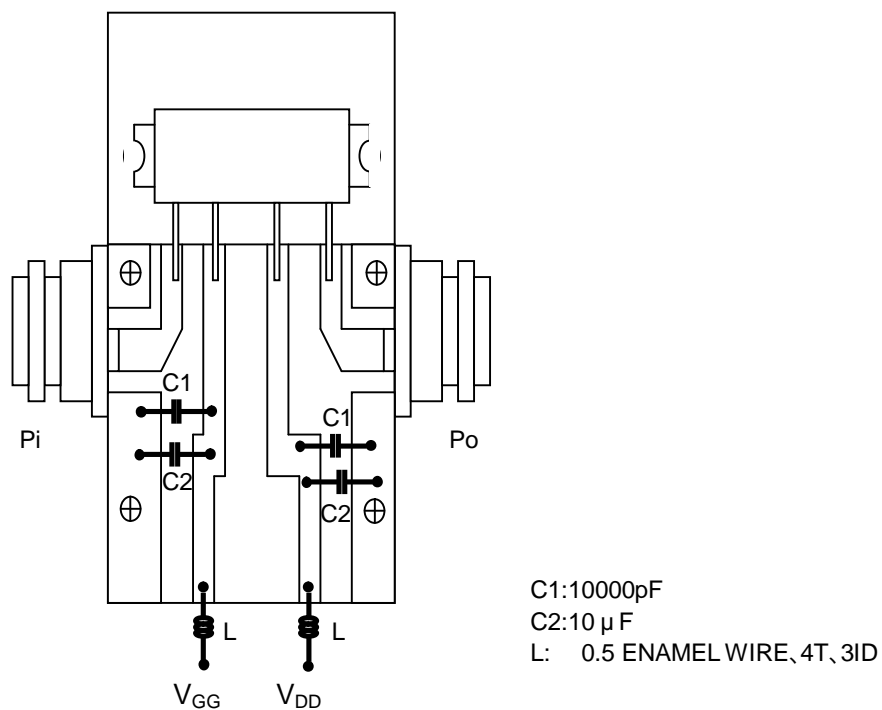
Caution

- 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



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