TOSHIBA

MICROWAVE SEMICONDUCTOR

TECHNICAL DATA

MICROWAVE POWER MMIC AMPLIFIER

TMD5872-2

FEATURES

- **HIGH POWER**
  P1dB=34.0dBm (TYP.)
- **HIGH GAIN**
  G1dB=28.0dB (TYP.)
- **HIGH POWER ADDED EFFICIENCY**
  ηadd=21% (TYP.)
- **BROADBAND OPERATION**
  f=5.8-7.2GHz

ABSOLUTE MAXIMUM RATINGS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain Supply Voltage	V_{DD}	V	15
Gate Supply Voltage	V_{GG}	V	-10
Input Power	Pin	dBm	10
Flange Temperature	Tf	°C	-30 ~ +80
Storage Temperature	T_{stg}	°C	-65 ~ +175

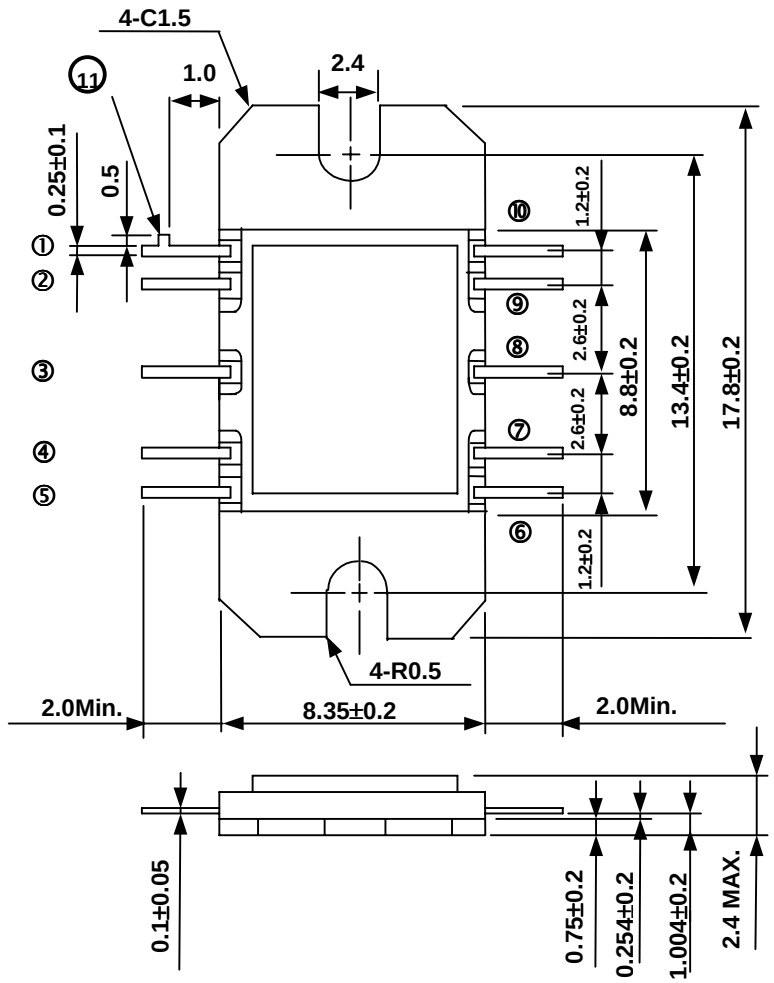
RF PERFORMANCE SPECIFICATIONS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Operating Frequency	f		GHz	5.8	—	7.2
Output Power at 1dB Gain Compression Point	P_{1dB}	V_{DD}= 10V V_{GG}= -5V	dBm	32.0	34.0	—
Power Gain at 1dB Gain Compression Point	G_{1dB}		dB	25.0	28.0	—
Gain Flatness	ΔG		dB	—	—	±2.0
Drain Current	IDD		A	—	1.2	1.6
Power Added Efficiency	η_{add}		%	—	21	—
Input VSWR (small signal)	VSWRi		—	—	2.0:1	3.0:1

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The information contained herein is subject to change without prior notice. It is therefor advisable to contact TOSHIBA before proceeding with design of equipment incorporating this product.

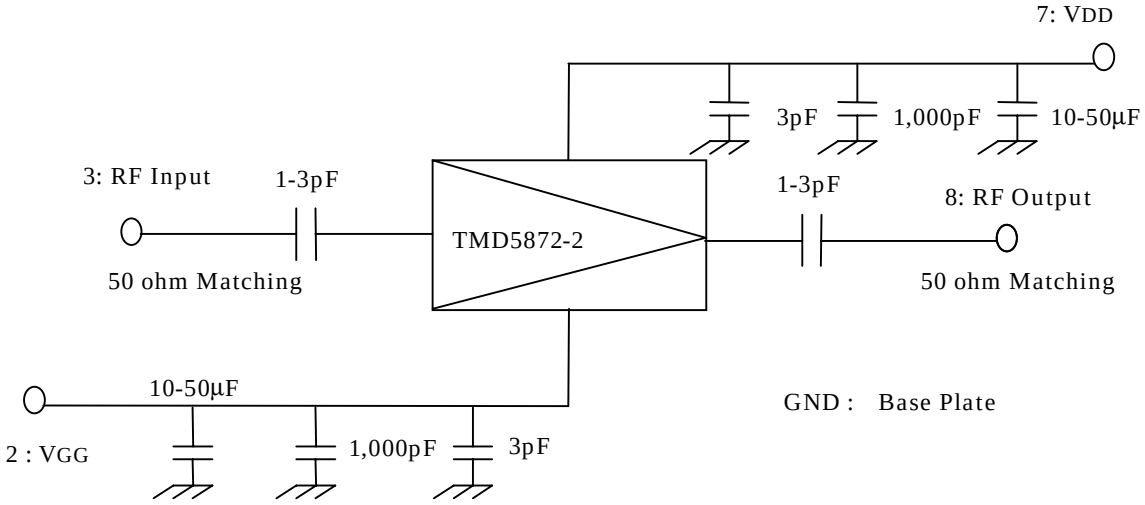
PACKAGE OUTLINE (2-9E1F)



Unit in mm

①④⑤⑥⑨⑩ :
No Connection (Open)
③ : RF Input
② : VGG
⑦ : VDD
⑧ : RF Output
⑪ : Orientation Tab

Recommended Bias Configuration



S-Parameters of TMD5872-2

V_{DD}= 10V, V_{GG}= -5V

Freq.	S11		S21		S12		S22	
(GHz)	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5.6	0.33	-60	38.4	-49	0.0005	-46	0.17	-93
5.7	0.24	-64	43.4	-103	0.0005	-40	0.10	-112
5.8	0.15	-56	45.6	-151	0.0007	-42	0.06	-161
5.9	0.13	-23	46.1	163	0.0003	-79	0.07	132
6.0	0.18	-6	45.6	122	0.0004	-80	0.10	100
6.1	0.23	-8	44.6	83	0.0004	-68	0.13	80
6.2	0.26	-15	43.2	46	0.0004	-80	0.13	67
6.3	0.26	-22	41.6	10	0.0003	-101	0.13	59
6.4	0.25	-29	39.7	-23	0.0002	-107	0.13	56
6.5	0.24	-34	37.9	-55	0.0001	-138	0.13	58
6.6	0.22	-37	36.2	-86	0.0000	-96	0.14	61
6.7	0.21	-39	35.1	-117	0.0004	-165	0.15	61
6.8	0.20	-43	34.8	-146	0.0005	-166	0.17	57
6.9	0.20	-49	35.1	-177	0.0003	171	0.19	48
7.0	0.20	-57	36.1	151	0.0005	153	0.20	35
7.1	0.19	-73	37.6	117	0.0010	158	0.21	18
7.2	0.19	-96	38.4	81	0.0006	153	0.20	-2
7.3	0.19	-127	37.6	41	0.0010	129	0.17	-28
7.4	0.21	-159	34.4	1	0.0008	80	0.12	-63