

MICROWAVE SEMICONDUCTOR TECHNICAL DATA

TMD1013-1

FEATURES

- High Power $P_{1dB}=33dBm(TYP.)$
- High Gain $G_{1dB}=25dB(TYP.)$
- High Power Added Efficiency $\eta_{add}=14%(TYP.)$
- Broadband Operation $f=10.0-13.3GHz.$

ABSOLUTE MAXIMUM RATINGS($T_a=25^{\circ}C$)

CHARACTERISTICS	SYMBOL	UNIT	RATINGS
DRAIN SUPPLY VOLTAGE	VDD	V	15
GATE SUPPLY VOLTAGE	VGG	V	-10
INPUT POWER	P_{in}	dB	15
FLANGE TEMPERATURE	T_f	$^{\circ}C$	-30~+80
STORAGE TEMPERATURE	T_{stg}	$^{\circ}C$	-65~+175

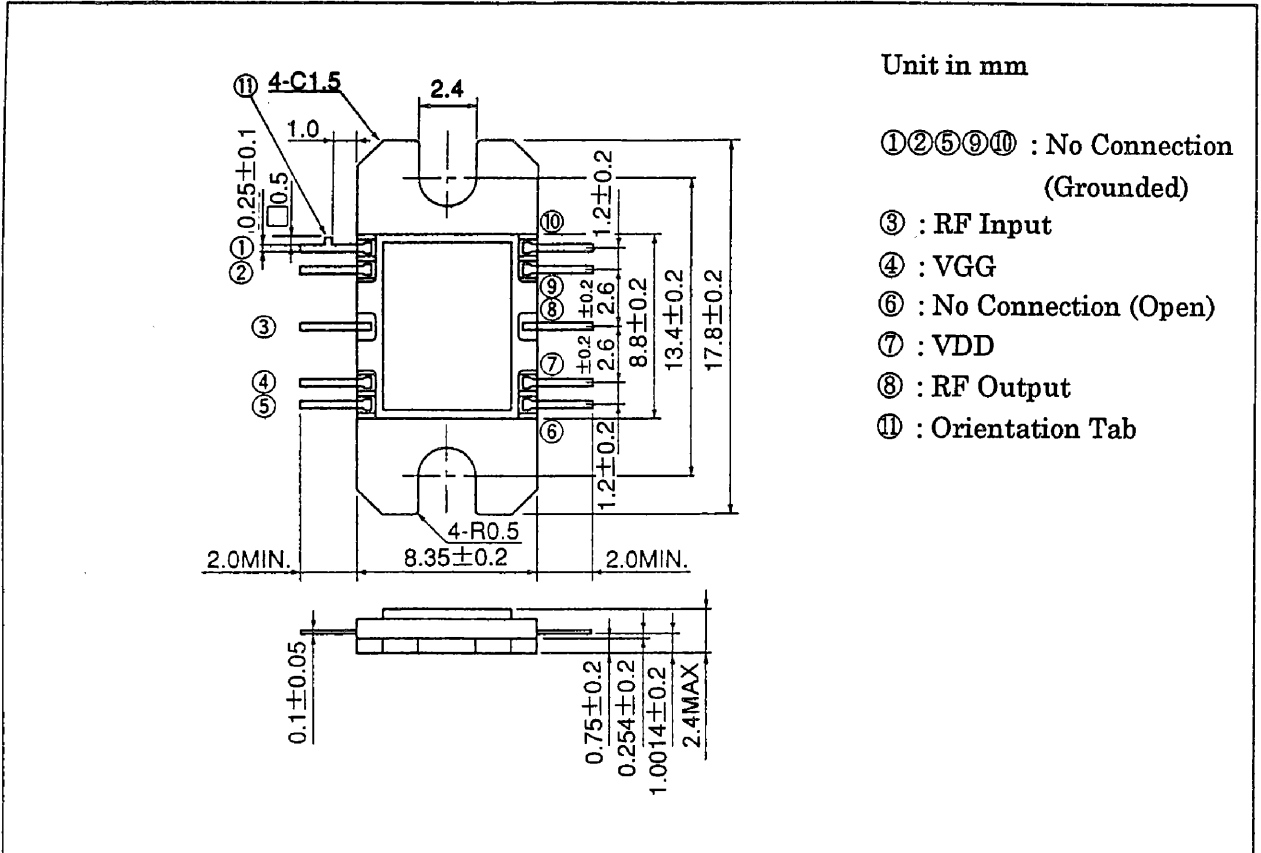
RF PERFORMANCE SPECIFICATIONS ($T_a=25^{\circ}C$)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Operating Frequency	f		GHz	10.0	—	13.3
Output Power at 1dB Gain Compression Point	P_{1dB}	VDD=10V VGG = -5V	dBm	31	33	—
Power Gain at 1dB Gain Compression Point	G_{1dB}		dB	21	25	—
Gain Flatness	ΔG		dB	—	—	± 2.5
Drain Current	IDD		A	—	1.4	1.8
Power Added Efficiency	η_{add}		%	—	14	—
Third Order Intermodulation Distortion	IM3	2 Tone @ $P_o=19dBm(SCL)$	dBc	-42	-45	—
VSWR _{in} (small signal)	VSWR _{in}		—	—	2.0	3.0

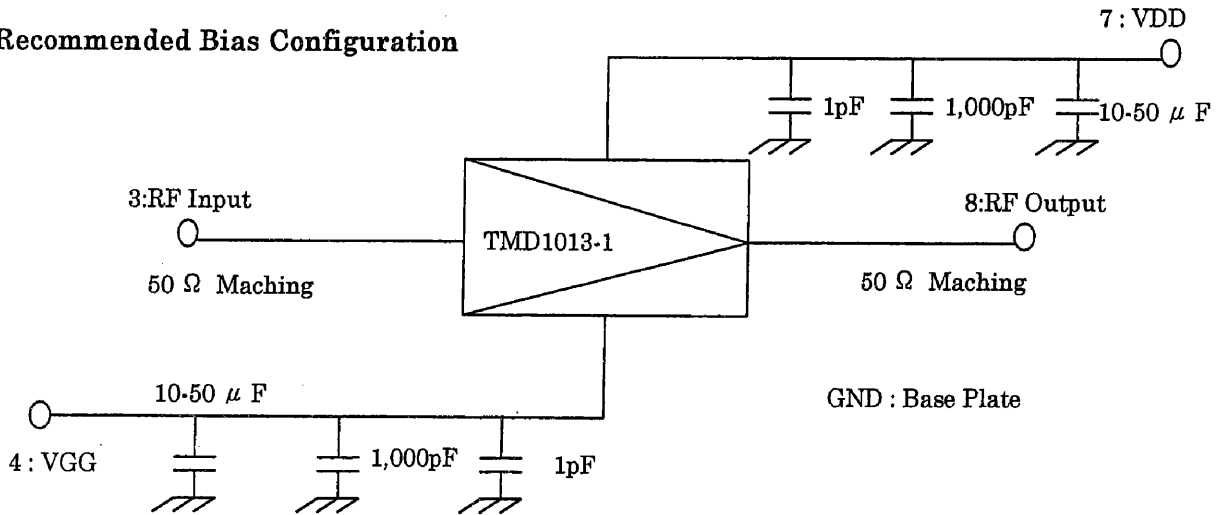
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PACKAGE OUTLINE (2-9E1D)



Recommended Bias Configuration



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S-Parameters of TMD1013-1

VDD=10V, VGG=-5V

Freq. (GHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
9.5	0.05	-137	16.5	-165	0.0002	101	0.22	-17
10.0	0.13	122	16.3	83	0.0004	92	0.19	-25
10.5	0.23	104	15.9	-20	0.0003	-23	0.19	-35
11.0	0.30	91	15.5	-122	0.0000	-47	0.13	-57
11.5	0.35	77	15.9	137	0.0004	-6	0.03	-103
12.0	0.34	55	16.7	31	0.0009	-70	0.08	124
12.5	0.27	34	17.2	-77	0.0016	-127	0.14	97
13.0	0.20	22	18.8	162	0.0020	174	0.20	91
13.5	0.20	-29	17.9	36	0.0013	151	0.16	45