

TOSHIBA

MICROWAVE SEMICONDUCTOR

TECHNICAL DATA

MICROWAVE POWER GaAs FET

TIM1414-4LA

Preliminary

FEATURES

■ HIGH POWER

P1dB=36.5dBm at 14.0GHz to 14.5GHz

■ HIGH GAIN

G1dB=6.5dB at 14.0GHz to 14.5GHz

■ BROAD BAND INTERNALLY MATCHED

■ HERMETICALLY SEALED PACKAGE

RF PERFORMANCE SPECIFICATIONS (Ta= 25° C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Output Power at 1dB Compression Point	P1dB	VDS= 9V f= 14.0 to 14.5GHz	dBm	36.0	36.5	—
Power Gain at 1dB Compression Point	G1dB		dB	6.0	6.5	—
Drain Current	IDS1		A	—	1.7	2.2
Power Added Efficiency	η_{add}		%	—	23	—
3 rd Order Intermodulation Distortion	IM3	NOTE	dBc	-42	-45	—
Drain Current	IDS2		A	—	1.7	2.2
Channel Temperature Rise	ΔT_{ch}	VDS X IDS X Rth(c-c)	°C	—	—	70

NOTE : Two Tone Test, Po=25dBm (Single Carrier Level)

ELECTRICAL CHARACTERISTICS (Ta= 25° C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V IDS= 2.0A	mS	—	1200	—
Pinch-off Voltage	VGSoff	VDS= 3V IDS= 60mA	V	-2.0	-3.5	-5.0
Saturated Drain Current	IDSS	VDS= 3V VGS= 0V	A	—	4.0	5.2
Gate-Source Breakdown Voltage	VGSO	IGS= -60μA	V	-5	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	2.9	3.5

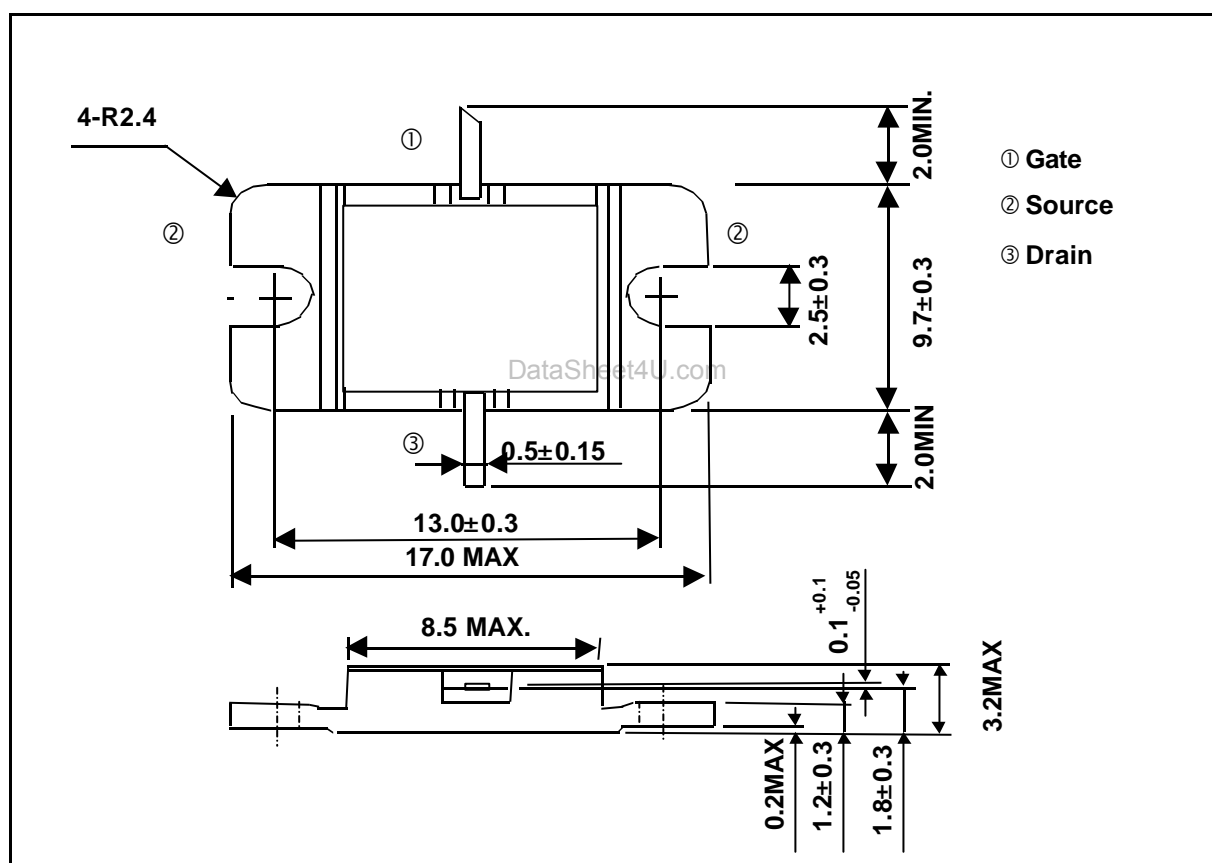
- ◆ The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA for any infringements of patents or other rights of the third parties which may results from its use. No license is granted by implication or otherwise under any patent or patent rights of TOSHIBA or others.

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.

TOSHIBA CORPORATION

ABSOLUTE MAXIMUM RATINGS (Ta= 25° C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	VDS	V	15
Gate-Source Voltage	VGS	V	-5
Drain Current	IDS	A	5.2
Total Power Dissipation (Tc= 25 °C)	PT	W	30
Channel Temperature	Tch	°C	175
Storage Temperature	Tstg	°C	-65 to +175

PACKAGE OUTLINE (2-9D1B)**HANDLING PRECAUTIONS FOR PACKAGED TYPE**

Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.