

**TOSHIBA****MICROWAVE SEMICONDUCTOR  
TECHNICAL DATA****MICROWAVE POWER GaAs FET  
TIM5964-12UL****FEATURES****■ HIGH POWER**

P1dB=41.5dBm at 5.9GHz to 6.4GHz

**■ HIGH GAIN**

G1dB=10.0dB at 5.9GHz to 6.4GHz

**■ BROAD BAND INTERNALLY MATCHED FET****■ HERMETICALLY SEALED PACKAGE****RF PERFORMANCE SPECIFICATIONS ( Ta= 25°C )**

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Output Power at 1dB Gain Compression Point	P1dB	VDS= 10V IDSset=2.6A f = 5.9 to 6.4GHz	dBm	40.5	41.5	—
Power Gain at 1dB Gain Compression Point	G1dB		dB	9.0	10.0	—
Drain Current	IDS1		A	—	3.2	3.8
Gain Flatness	ΔG		dB	—	—	±0.6
Power Added Efficiency	ηadd		%	—	40	—
3rd Order Intermodulation Distortion	IM3	Two-Tone Test Po=30.5dBm (Single Carrier Level)	dBc	-44	-47	—
Drain Current	IDS2		A	—	2.6	3.0
Channel Temperature Rise	ΔTch	(VDS X IDS + Pin – P1dB) X Rth(c-c)	°C	—	—	80

Recommended gate resistance(Rg) : Rg= 100 Ω(MAX.)

**ELECTRICAL CHARACTERISTICS ( Ta= 25°C )**

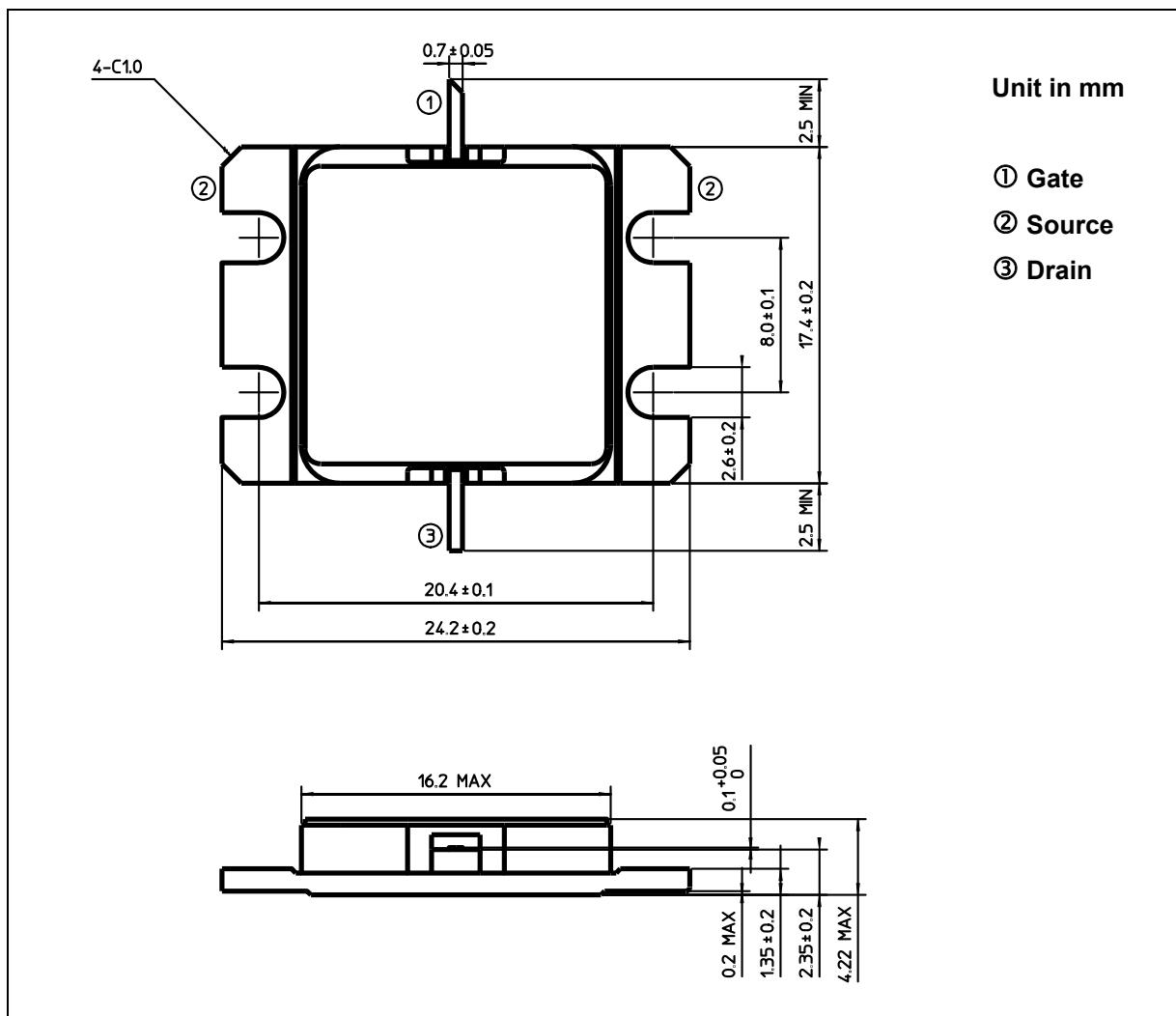
CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V IDS= 4.0A	S	—	2.5	—
Pinch-off Voltage	VGSoff	VDS= 3V IDS= 40mA	V	-1.0	-2.5	-4.0
Saturated Drain Current	IDSS	VDS= 3V VGS= 0V	A	—	7.2	—
Gate-Source Breakdown Voltage	VGSO	IGS= -140μA	V	-5	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	2.0	2.4

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

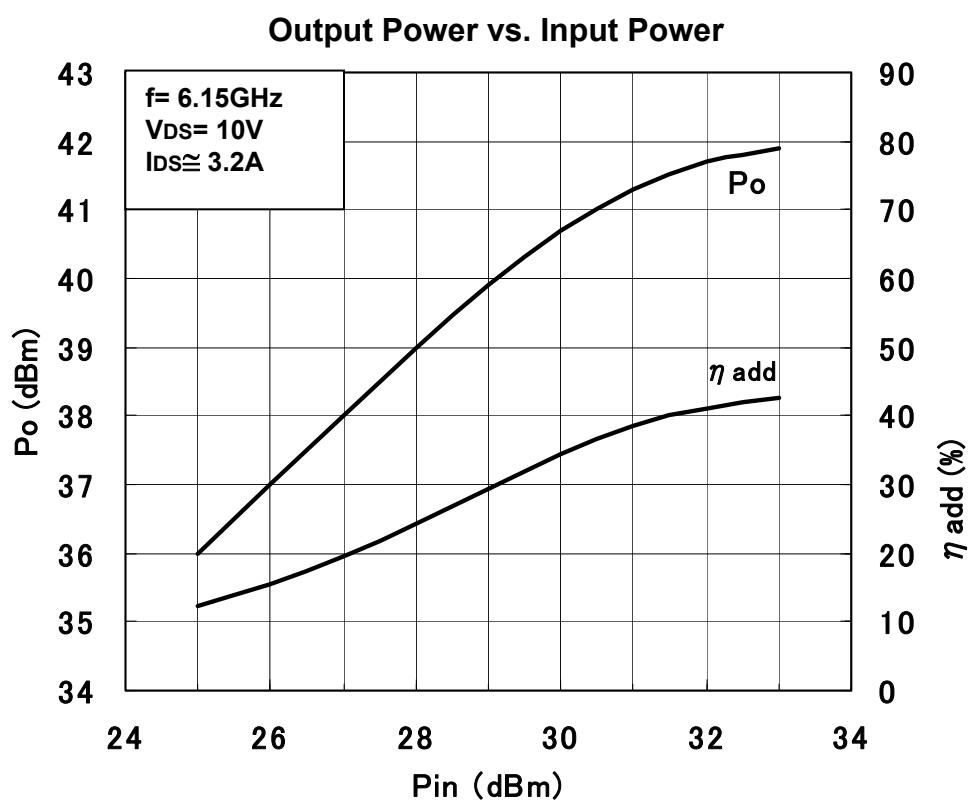
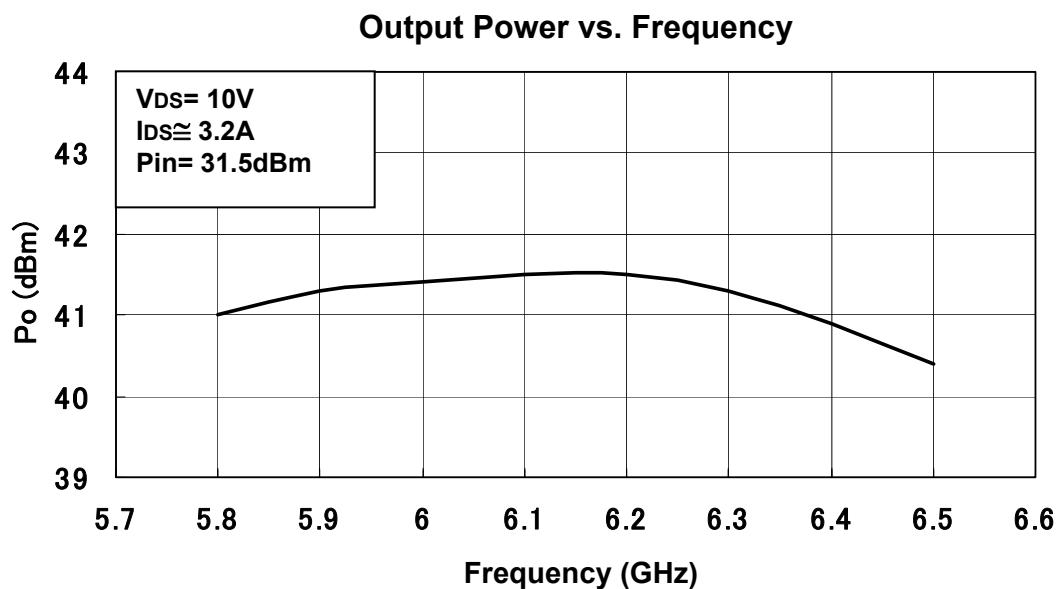
**ABSOLUTE MAXIMUM RATINGS ( Ta= 25°C )**

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	VDS	V	15
Gate-Source Voltage	VGS	V	-5
Drain Current	IDS	A	10.0
Total Power Dissipation (Tc= 25 °C )	PT	W	62.5
Channel Temperature	Tch	°C	175
Storage	Tstg	°C	-65 to +175

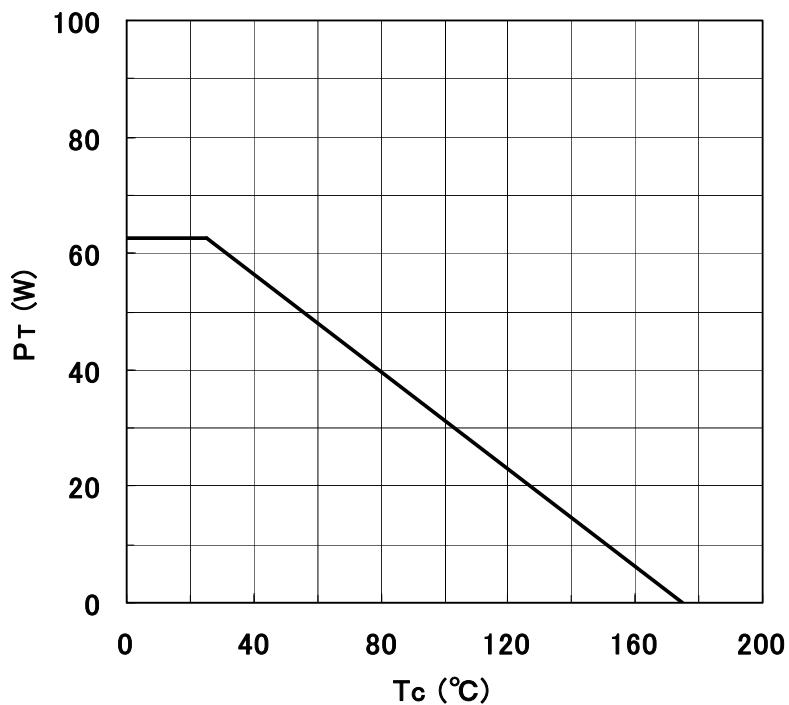
**PACKAGE OUTLINE (2-16G1B)****HANDLING PRECAUTIONS FOR PACKAGE MODEL**

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

## RF PERFORMANCE



### Power Dissipation vs. Case Temperature



### IM3 vs. Output Power Characteristics

