

**TOSHIBA**  
**MICROWAVE SEMICONDUCTOR**  
**TECHNICAL DATA**

**MICROWAVE POWER GaAs FET**  
**TIM5964-80SL**  
**Preliminary**

**FEATURES**

- **LOW INTERMODULATION DISTORTION**  
 IM3=-30 dBc at Pout= 42.0dBm  
 Single Carrier Level
- **HIGH POWER**  
 P1dB=49.0dBm at 5.9GHz to 6.4GHz
- **HIGH GAIN**  
 G1dB=7.0dB 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=10.0A f = 5.9 to 6.4GHz	dBm	48.0	49.0	—
Power Gain at 1dB Gain Compression Point	G1dB		dB	6.0	7.0	—
Drain Current	IDS1		A	—	18.0	20.0
Gain Flatness	ΔG		dB	—	—	±0.8
Power Added Efficiency	ηadd		%	—	35	—
3rd Order Intermodulation Distortion	IM3	Two-Tone Test Po=42.0dBm	dBc	-25	-30	—
Drain Current	IDS2	(Single Carrier Level)	A	—	—	16.0
Channel Temperature Rise	ΔTch	(VDS X IDS +Pin-P1dB) X Rth(c-c)	°C	—	—	100

**Recommended Gate Resistance(Rg) : 28 Ω (Max.)**

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

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V IDS= 12.0A	S	—	20	—
Pinch-off Voltage	VGSoff	VDS= 3V IDS= 200mA	V	-1.0	-1.8	-3.0
Saturated Drain Current	IDSS	VDS= 3V VGS= 0V	A	—	38	—
Gate-Source Breakdown Voltage	VGSO	IGS= -1.0mA	V	-5	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	0.5	0.6

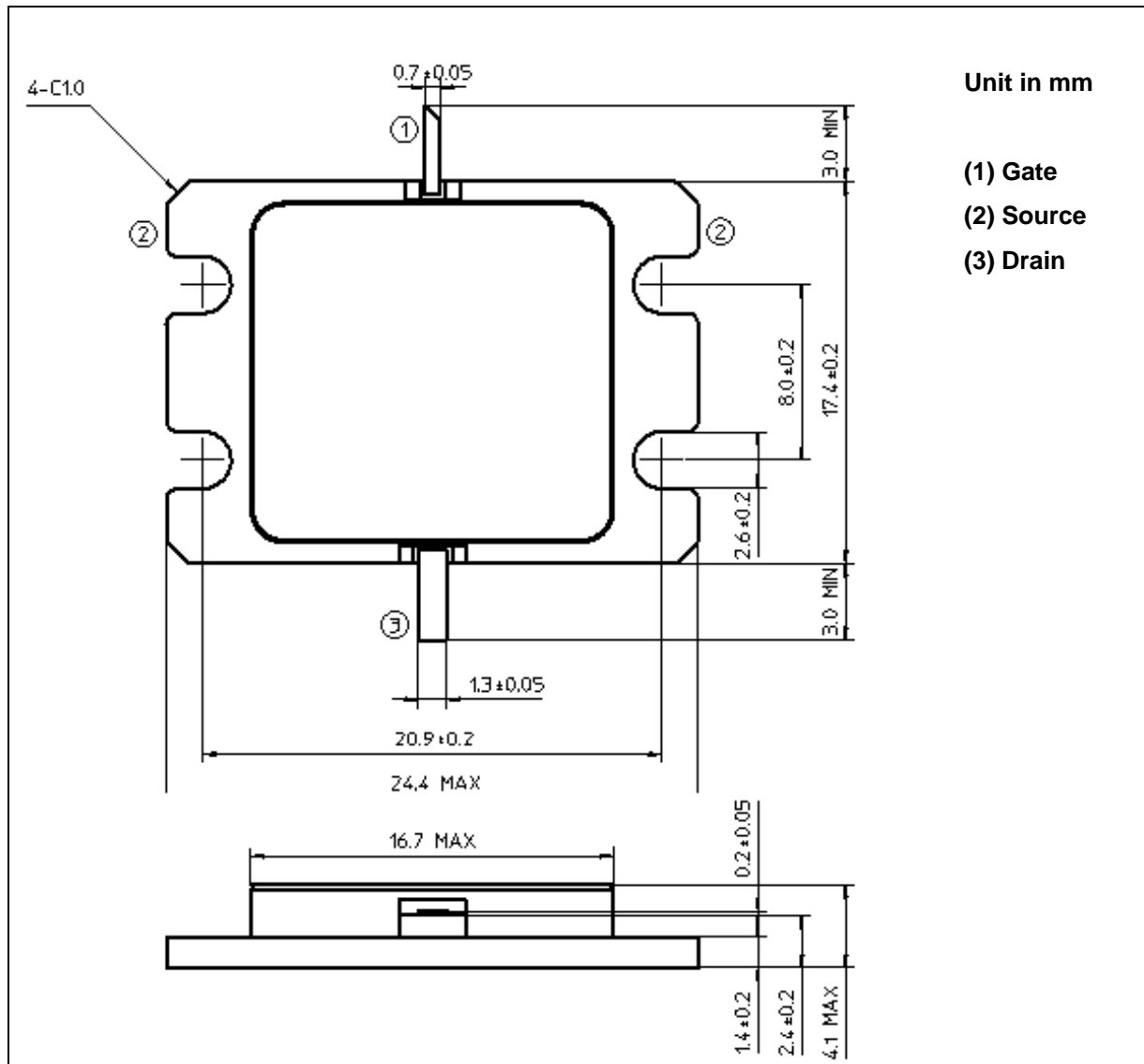
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**ABSOLUTE MAXIMUM RATINGS ( Ta= 25°C )**

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	VDS	V	15
Gate-Source Voltage	VGS	V	-5
Drain Current	IDS	A	26
Total Power Dissipation (Tc= 25 °C)	PT	W	250
Channel Temperature	Tch	°C	175
Storage Temperature	Tstg	°C	-65 to +175

**PACKAGE OUTLINE (7-AA02C)**

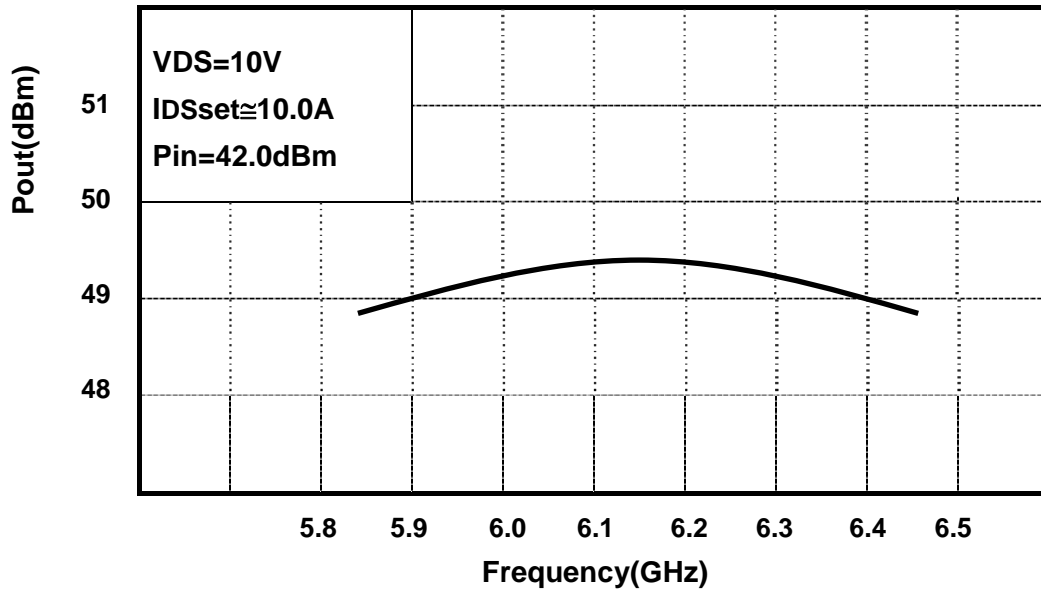


**HANDLING PRECAUTIONS FOR PACKAGE MODEL**

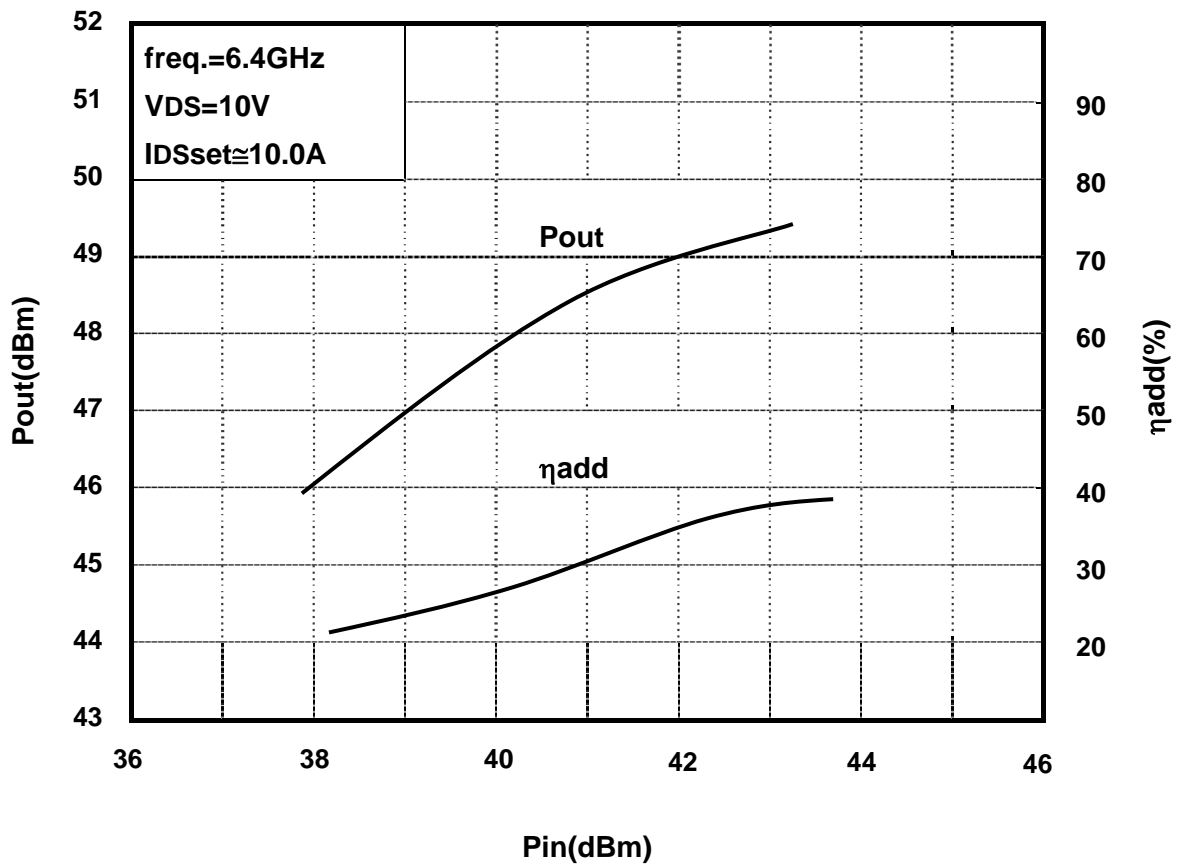
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

## RF PERFORMANCE

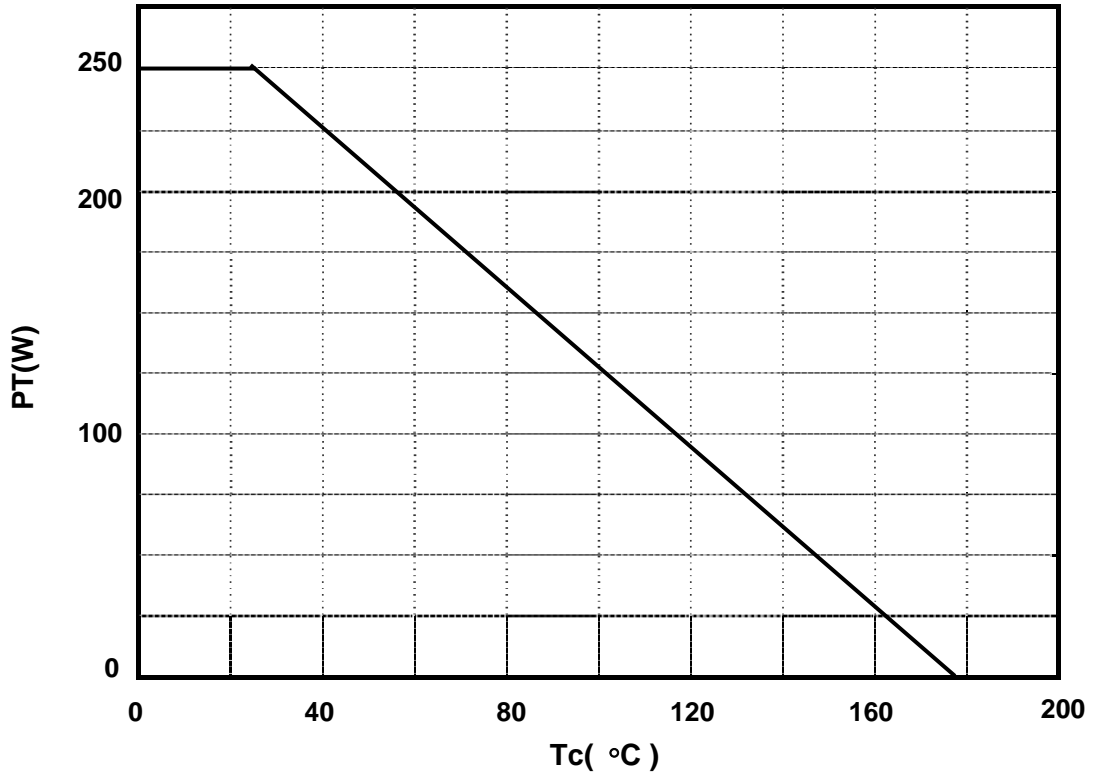
### Output Power (Pout) vs. Frequency



### Output Power(Pout) vs. Input Power(Pin)



Power Dissipation(PT) vs. Case Temperature(Tc)



IM3 vs. Power Characteristics

