

TOSHIBA
MICROWAVE SEMICONDUCTOR
TECHNICAL DATA

MICROWAVE POWER GaAs FET
TIM5964-30SL

FEATURES

- n **LOW INTERMODULATION DISTORTION**
 IM3=-45 dBc at Po= 34.5 dBm,
 Single Carrier Level
- n **HIGH GAIN**
 G1dB=8.0dB at 5.9GHz to 6.4GHz
- n **BROAD BAND INTERNALLY MATCHED FET**
- n **HIGH POWER**
 P1dB=45.0 dBm at 5.9GHz to 6.4GHz
- n **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 f = 5.9 to 6.4GHz	dBm	44.0	45.0	—
Power Gain at 1dB Gain Compression Point	G1dB		dB	7.0	8.0	—
Drain Current	IDS1		A	—	7.0	8.0
Gain Flatness	ΔG		dB	—	—	±0.8
Power Added Efficiency	ηadd		%	—	38	—
3rd Order Intermodulation Distortion	IM3	Two-Tone Test Po=34.5 dBm	dBc	-42	-45	—
Drain Current	IDS2	(Single Carrier Level)	A	—	7.0	8.0
Channel Temperature Rise	ΔTch	(VDS X IDS +Pin - P1dB) X Rth(c-c)	°C	—	—	100

Recommended gate resistance(Rg) : Rg= 28 W(MAX.)

ELECTRICAL CHARACTERISTICS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V IDS= 10A	mS	—	6300	—
Pinch-off Voltage	VGSoff	VDS= 3V IDS= 100mA	V	-1.0	-2.5	-4.0
Saturated Drain Current	IDSS	VDS= 3V VGS= 0V	A	—	18	—
Gate-Source Breakdown Voltage	VGSO	IGS= -350μA	V	-5	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	1.0	1.3

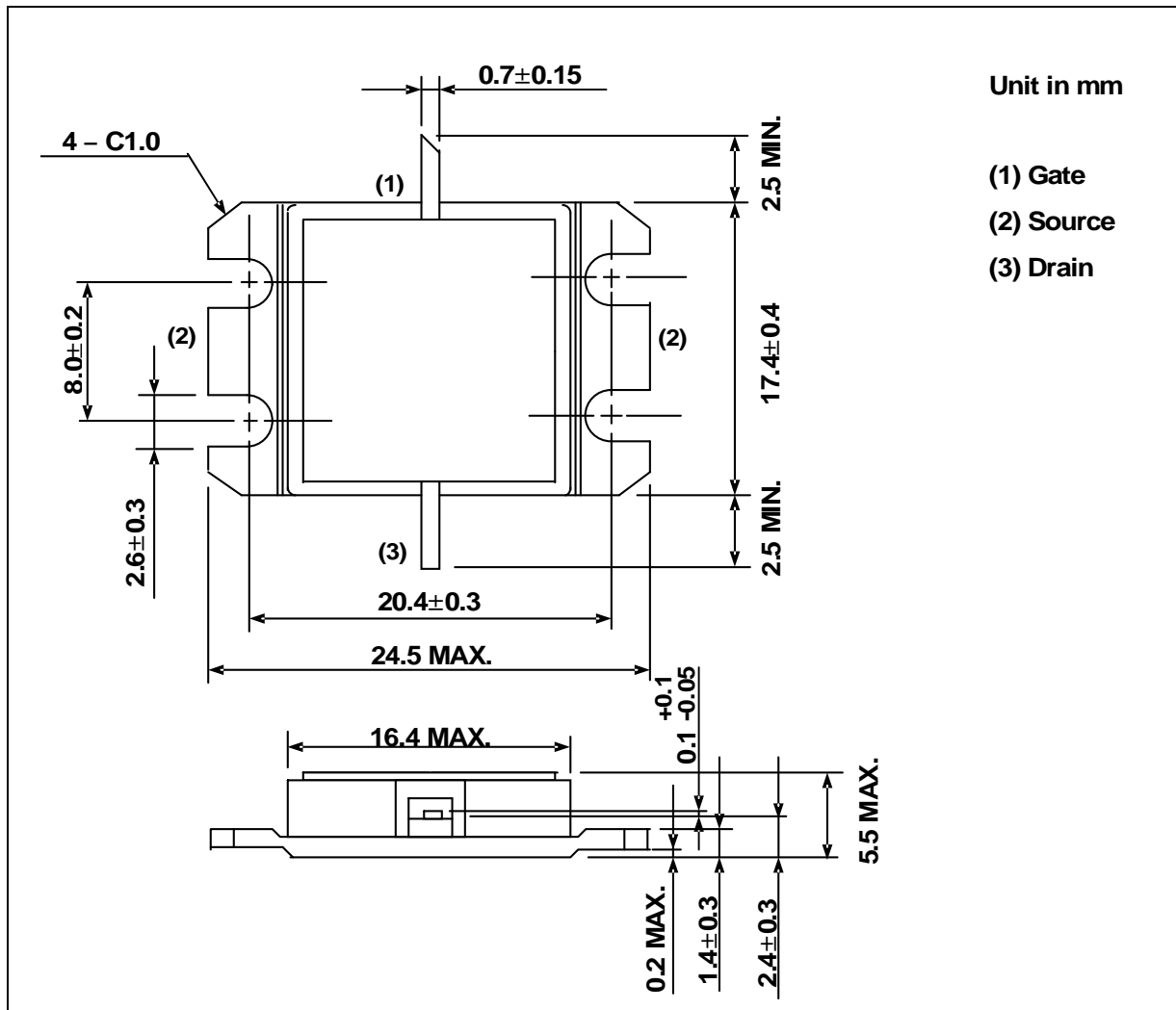
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ABSOLUTE MAXIMUM RATINGS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	VDS	V	15
Gate-Source Voltage	VGS	V	-5
Drain Current	IDS	A	20
Total Power Dissipation (Tc= 25 °C)	PT	W	115.4
Channel Temperature	Tch	°C	175
Storage	Tstg	°C	-65 to +175

PACKAGE OUTLINE (2-16G1B)

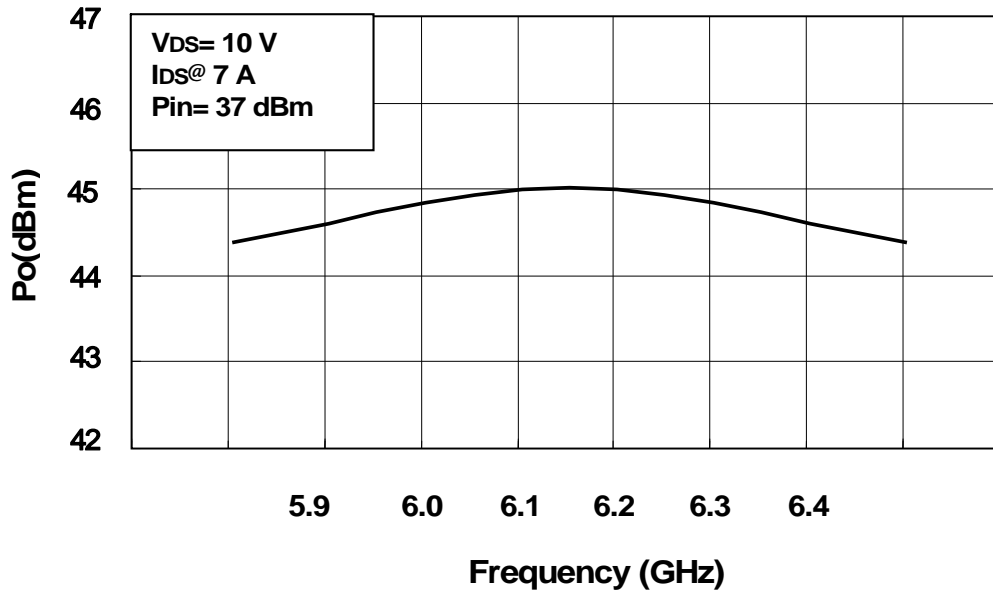


HANDLING PRECAUTIONS FOR PACKAGE MODEL

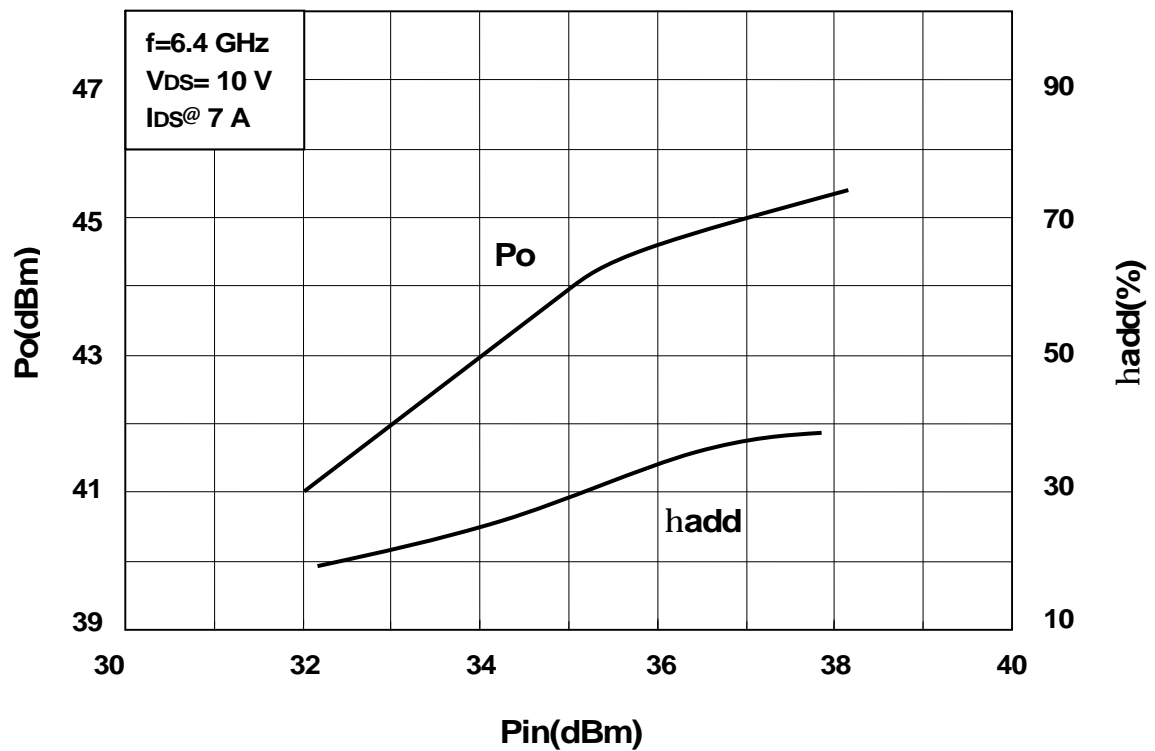
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

RF PERFORMANCE

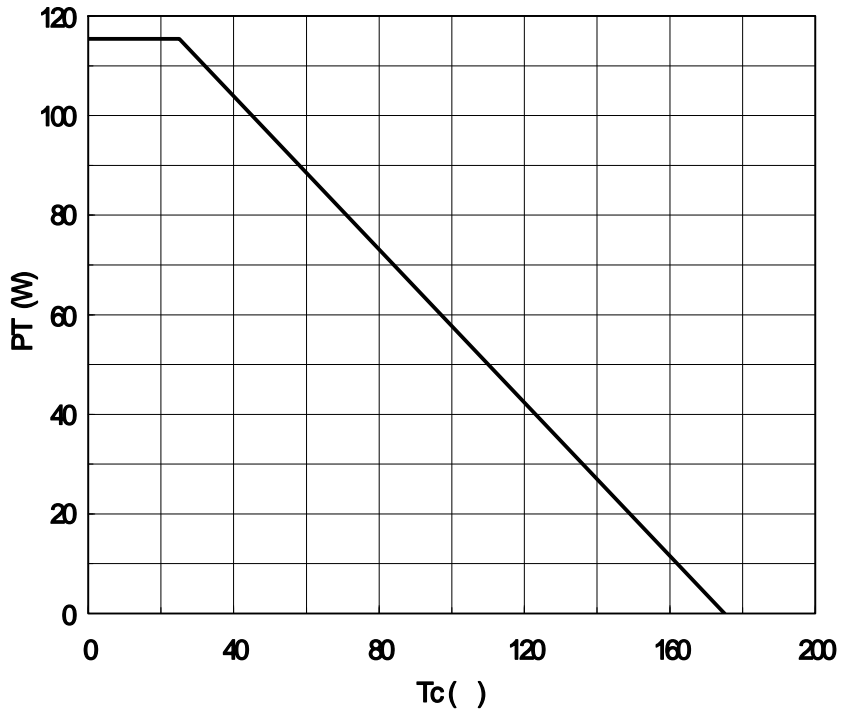
Output Power vs. Frequency



Output Power vs. Input Power



Power Dissipation vs. Case Temperature



IM3 vs. Output Power Characteristics

