TOSHIBA

MICROWAVE SEMICONDUCTOR

TECHNICAL DATA

MICROWAVE POWER GaAs FET

TIM6472-8UL

FEATURES

- **HIGH POWER**
  P1dB=39.5dBm at 6.4GHz to 7.2GHz
- **HIGH GAIN**
  G1dB= 9.5dB at 6.4GHz to 7.2GHz
- **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	P_{1dB}	V_{DS}= 10V f = 6.4 to 7.2GHz	dBm	38.5	39.5	—
Power Gain at 1dB Gain Compression Point	G_{1dB}		dB	8.5	9.5	—
Drain Current	I_{DS1}		A	—	2.2	2.6
Gain Flatness	ΔG		dB	—	—	±0.6
Power Added Efficiency	η_{add}		%	—	36	—
3rd Order Intermodulation Distortion	IM3	Two-Tone Test Po= 28.5dBm (Single Carrier Level)	dBc	-44	-47	—
Drain Current	I_{DS2}		A	—	2.2	2.6
Channel Temperature Rise	ΔTch	(VDS X IDS + Pin – P1dB) X Rth(c-c)	°C	—	—	80

Recommended gate resistance(Rg) : Rg= 150 Ω(MAX.)

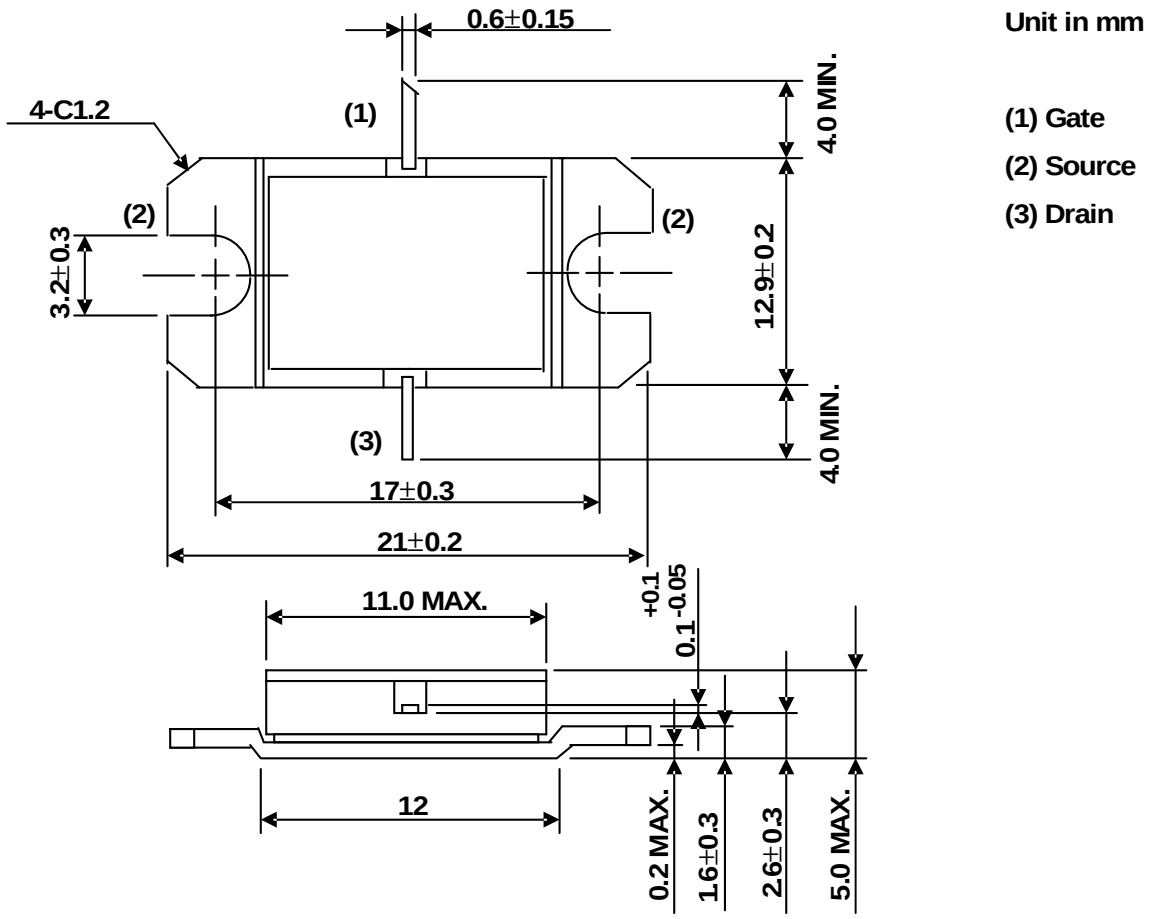
ELECTRICAL CHARACTERISTICS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	V_{DS}= 3V I_{DS}= 3.0A	mS	—	1800	—
Pinch-off Voltage	V_{GSoff}	V_{DS}= 3V I_{DS}= 30mA	V	-1.0	-2.5	-4.0
Saturated Drain Current	I_{DSS}	V_{DS}= 3V V_{GS}= 0V	A	—	5.2	—
Gate-Source Breakdown Voltage	V_{GSO}	I_{GS}= -100μA	V	-5	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	2.5	3.5

ABSOLUTE MAXIMUM RATINGS (Ta= 25◦C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	V_{DS}	V	15
Gate-Source Voltage	V_{GS}	V	-5
Drain Current	I_{DS}	A	7.0
Total Power Dissipation (Tc= 25 ◦C)	P_T	W	42.9
Channel Temperature	T_{ch}	◦C	175
Storage	T_{stg}	◦C	-65 to +175

PACKAGE OUTLINE (2-11D1B)

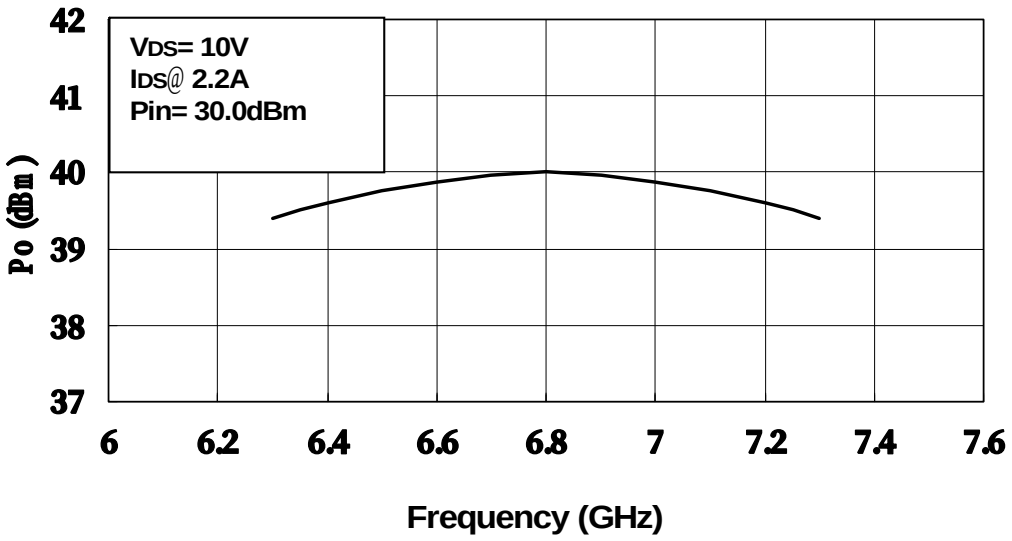


HANDLING PRECAUTIONS FOR PACKAGE MODEL

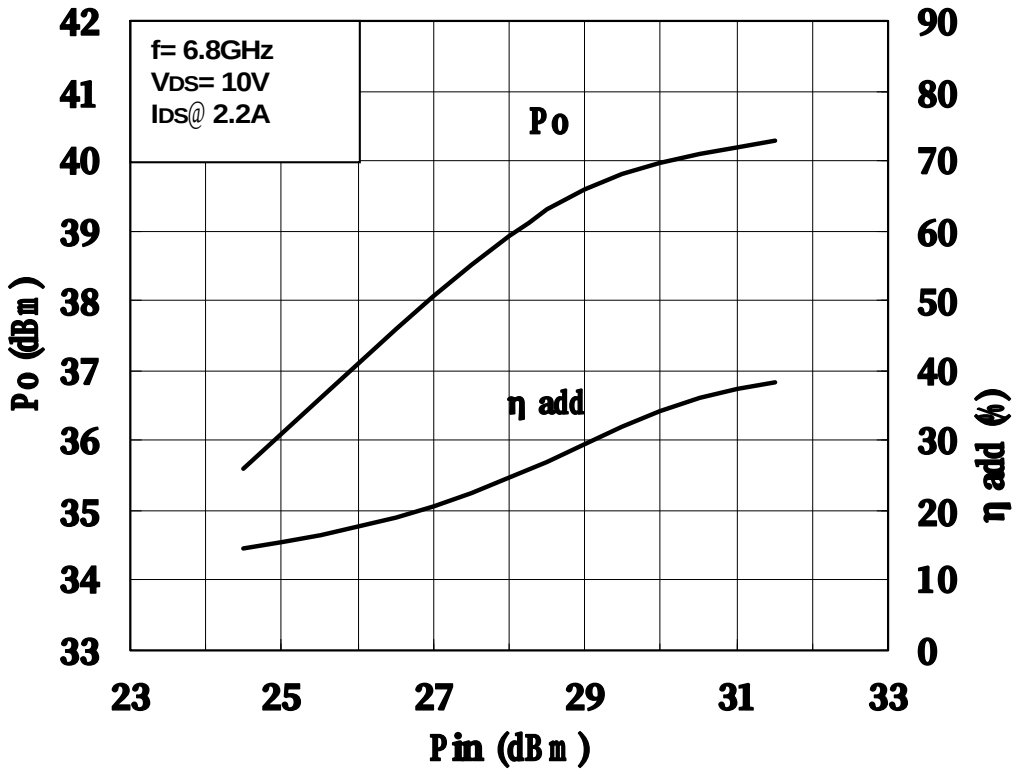
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260◦C.

RF PERFORMANCE

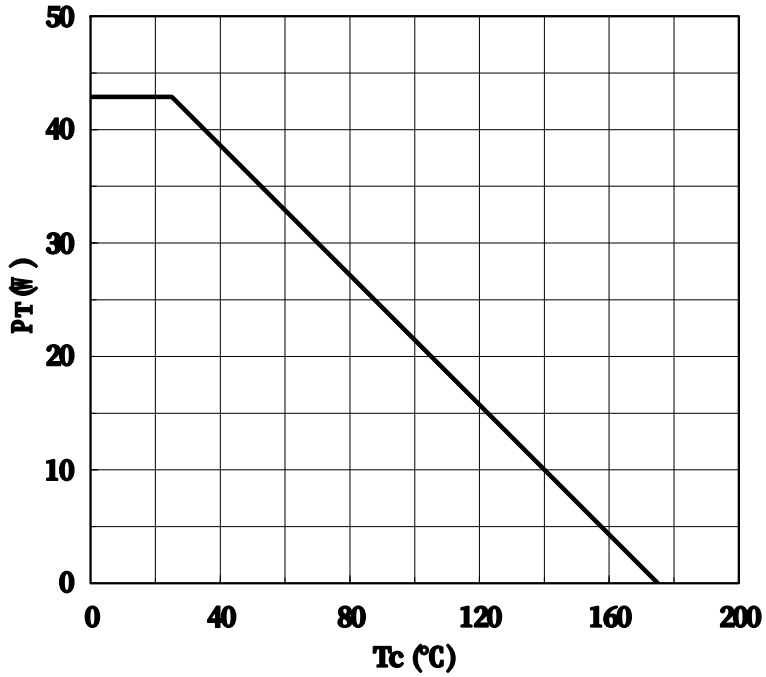
Output Power vs. Frequency



Output Power vs. Input Power



Power Dissipation vs. Case Temperature



IM3 vs. Output Power Characteristics