

## MICROWAVE POWER GaAs FET

# TIM1112-4UL

#### MICROWAVE SEMICONDUCTOR TECHNICAL DATA

#### **FEATURES**

- **·BROAD BAND INTERNALLY MATCHED FET**
- ·HIGH POWER

P1dB= 36.5dBm at 11.7GHz to 12.7GHz

·HIGH GAIN

G1dB= 9.5dB at 11.7GHz to 12.7GHz

**-LOW INTERMODULATION DISTOTION** 

IM3=-45dBc at Pout= 24.0dBm

Single Carrier Level

·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= 1.0A f=11.7 to 12.7 GHz	dBm	35.5	36.5	
Power Gain at 1dB Gain Compression Point	G1dB		dB	8.5	9.5	_
Drain Current	IDS1		Α	_	1.1	1.6
Gain Flatness	ΔG		dB		_	±0.8
Power Added Efficiency	ηadd		%		36	
3rd Order Intermodulation Distortion	IM3	Two Tone Test Po= 24.0dBm, $\Delta f$ = 5MHz (Single Carrier Level)	dBc	-42	-45	_
Drain Current	IDS2		Α	_	1.1	1.6
Channel Temperature Rise	ΔTch	(VDS X IDS + Pin – P1dB) X Rth(c-c)	°C	_	_	60

Recommended Gate Resistance(Rg): 150  $\Omega$ 

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

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V IDS= 1.2A	S	_	1.2	_
Pinch-off Voltage	VGSoff	VDS= 3V IDS= 40mA	V	-0.5	-2.0	-4.5
Saturated Drain Current	IDSS	VDS= 3V VGS= 0V	А	_	2.2	_
Gate-Source Breakdown Voltage	VGSO	IGS= -40μA	٧	-5		
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	_	3.8	4.4

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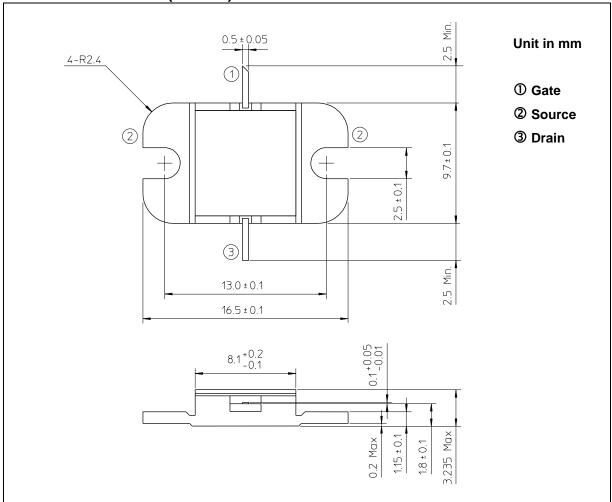


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### ABSOLUTE MAXIMUM RATINGS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	VDS	V	15
Gate-Source Voltage	VGS	V	-5
Drain Current	IDS	А	3.3
Total Power Dissipation (Tc= 25°C)	PT	W	34.1
Channel Temperature	Tch	°C	175
Storage Temperature	Tstg	°C	-65 to +175

### **PACKAGE OUTLINE (2-9D1B)**



#### HANDLING PRECAUTIONS FOR PACKAGE MODEL

Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C or 3 seconds at 350°C.