TOSHIBA

MICROWAVE SEMICONDUCTOR TECHNICAL DATA

MICROWAVE POWER GaAs FET TIM1112-4UL

FEATURES

- **HIGH POWER**
 - P1dB=36.5dBm at 11.7GHz to 12.7GHz
- HIGH GAIN

G1dB=9.5dB at 11.7GHz to 12.7GHz

- 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	P1dB		dBm	35.5	36.5	
Compression Point						
Power Gain at 1dB Gain	G1dB	VDS= 10V	dB	8.5	9.5	
Compression Point		IDSset≅1.0A				
Drain Current	IDS1	f= 11.7 to 12.7GHz	Α		1.1	1.6
Gain Flatness	ΔG		dB			±0.8
Power Added Efficiency	ηadd		%		36	
3 rd Order Intermodulation	IM3	Two-Tone Test	dBc	-42	-45	
Distortion		Po=24.0 dBm				
Drain Current	IDS2	(Single Carrier Level)	Α		1.1	1.6
Channel Temperature Rise	∆Tch	(VDS x IDS + Pin – P1dB)	°C	_		60
		x Rth(c-c)				

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

ELECTRICAL CHARACTERISTICS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V	mS		1200	
		IDS= 1.2A				
Pinch-off Voltage	VGSoff	VDS= 3V	V	-0.5	-2.0	-4.5
		IDS= 40mA				
Saturated Drain Current	IDSS	VDS= 3V	Α		2.2	
		VGS= 0V				
Gate-Source Breakdown	VGSO	IGS= -40μA	V	-5		
Voltage						
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W		3.8	4.4

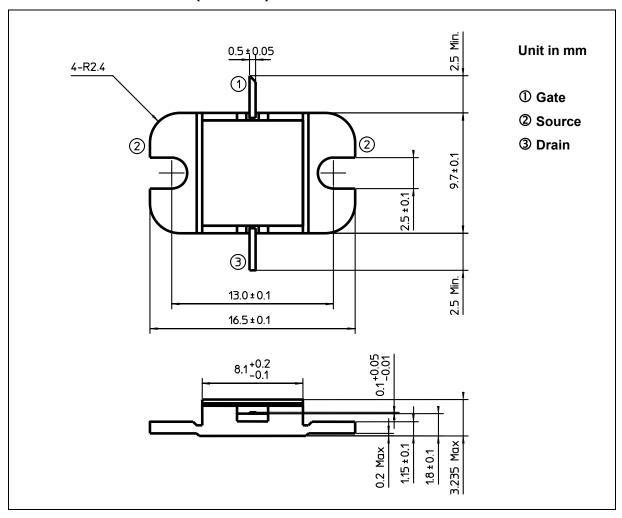
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ABSOLUTE MAXIMUM RATINGS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	VDS	V	15
Gate-Source Voltage	VGS	V	-5
Drain Current	IDS	Α	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.