

# TOSHIBA

## MICROWAVE SEMICONDUCTOR

### TECHNICAL DATA

## MICROWAVE POWER GaAs FET

### TIM4450-8SL

### PRELIMINARY

#### FEATURES

##### ■ HIGH POWER

P1dB=39.5dBm at 4.4GHz to 5.0GHz

##### ■ HIGH GAIN

G1dB=9.5dB at 4.4GHz to 5.0GHz

##### ■ BROAD BAND INTERNALLY MATCHED

##### ■ HERMETICALLY SEALED PACKAGE

#### RF PERFORMANCE SPECIFICATIONS (Ta= 25° C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Output Power at 1dB Compression Point	P1dB	VDS= 10V f= 4.4 to 5.0GHz	dBm	38.5	39.5	—
Power Gain at 1dB Compression Point	G1dB		dB	8.5	9.5	—
Drain Current	IDS1		A	—	2.2	2.6
Gain Flatness	ΔG		dB	—	—	±0.6
Power Added Efficiency	ηadd		%	—	36	—
3 <sup>rd</sup> Order Intermodulation Distortion	IM3	NOTE	dBc	-42	-45	—
Drain Current	IDS2		A	—	2.2	2.6
Channel Temperature Rise	ΔTch	VDS X IDS X Rth(c-c)	°C	—	—	80

NOTE : Two Tone Test, Po=28.5dBm (Single Carrier Level)

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

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Transconductance	Gm	VDS= 3V IDS= 3.0A	mS	—	1800	—
Pinch-off Voltage	VGSoff	VDS= 3V IDS= 30mA	V	-1.0	-2.5	-4.0
Saturated Drain Current	IDSS	VDS= 3V VGS= 0V	A	—	5.2	7.0
Gate-Source Breakdown Voltage	VGSO	IGS= -100μA	V	-5	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	2.5	3.8

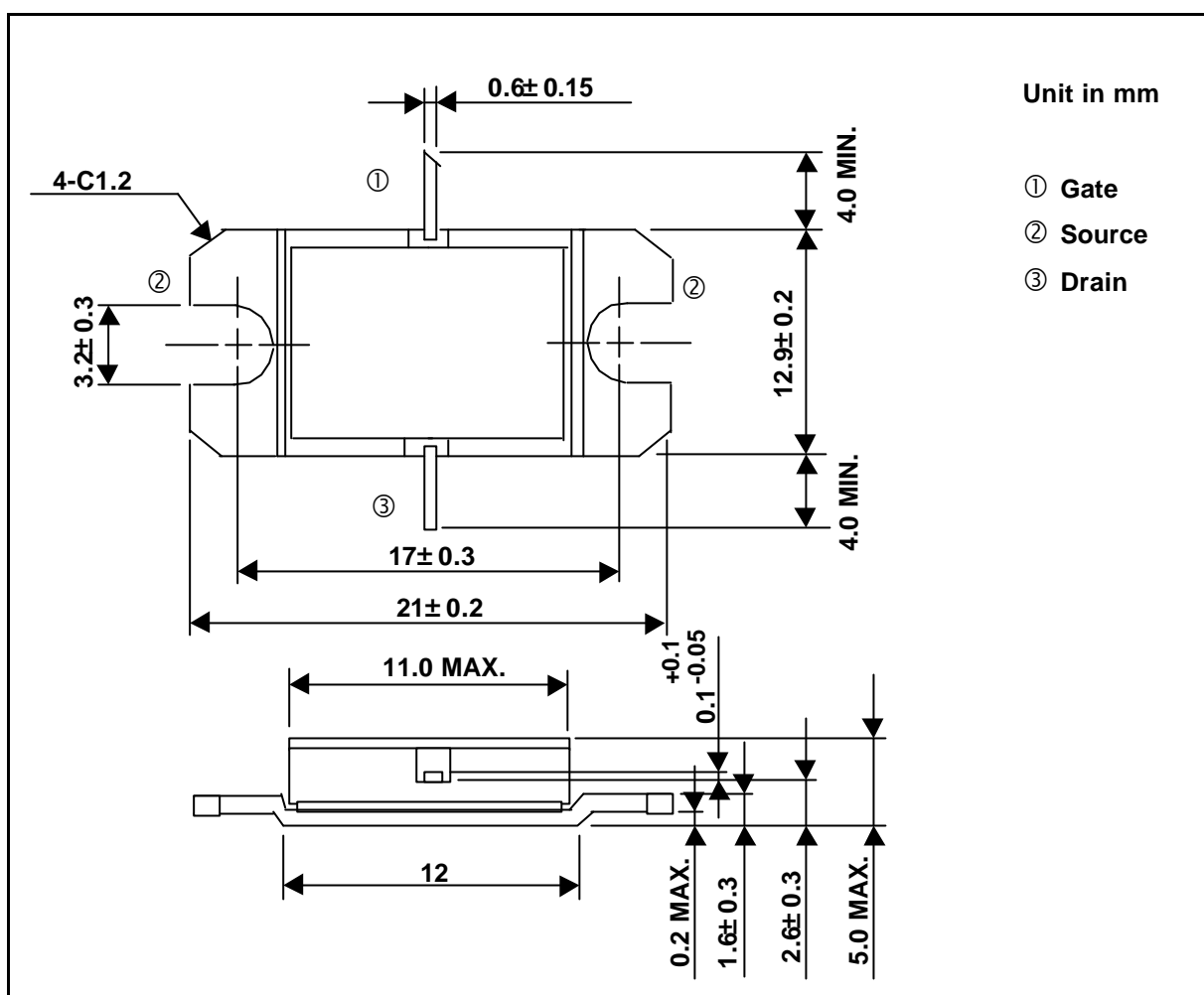
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The information contained herein is subject to change without prior notice. It is therefor advisable to contact TOSHIBA before proceeding with design of equipment incorporating this product.



**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	7.0
Total Power Dissipation (Tc= 25 °C)	PT	W	37.5
Channel Temperature	Tch	°C	175
Storage Temperature	Tstg	°C	-65 to +175

**PACKAGE OUTLINE (2-11D1B)****HANDLING PRECAUTIONS FOR PACKAGED TYPE**

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