

# TOSHIBA

MICROWAVE SEMICONDUCTOR  
TECHNICAL DATA

## MICROWAVE POWER GaAs FET TIM5359-16UL

### FEATURES

n **HIGH POWER**

P1dB=42.5dBm at 5.3GHz to 5.9GHz

n **BROAD BAND INTERNALLY MATCHED FET**

n **HIGH GAIN**

G1dB=10.0dB at 5.3GHz to 5.9GHz

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 = 5.3 to 5.9GHz	dBm	41.5	42.5	—
Power Gain at 1dB Gain Compression Point	G1dB		dB	9.0	10.0	—
Drain Current	IDS1		A	—	4.4	5.0
Gain Flatness	ΔG		dB	—	—	±0.6
Power Added Efficiency	ηadd		%	—	36	—
3rd Order Intermodulation Distortion	IM3		Two-Tone Test Po= 31.5dBm	dBc	-44	-47
Drain Current	IDS2	(Single Carrier Level)	A	—	4.4	5.0
Channel Temperature Rise	ΔTch	(VDS X IDS +Pin-P1dB) X Rth(c-c)	°C	—	—	80

Recommended gate resistance(Rg) : Rg= 100 W (MAX.)

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

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V IDS= 6.0A	mS	—	3600	—
Pinch-off Voltage	VGSoff	VDS= 3V IDS= 60mA	V	-1.0	-2.5	-4.0
Saturated Drain Current	IDSS	VDS= 3V VGS= 0V	A	—	10.5	—
Gate-Source Breakdown Voltage	VGSO	IGS= -200μA	V	-5	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	1.5	1.8

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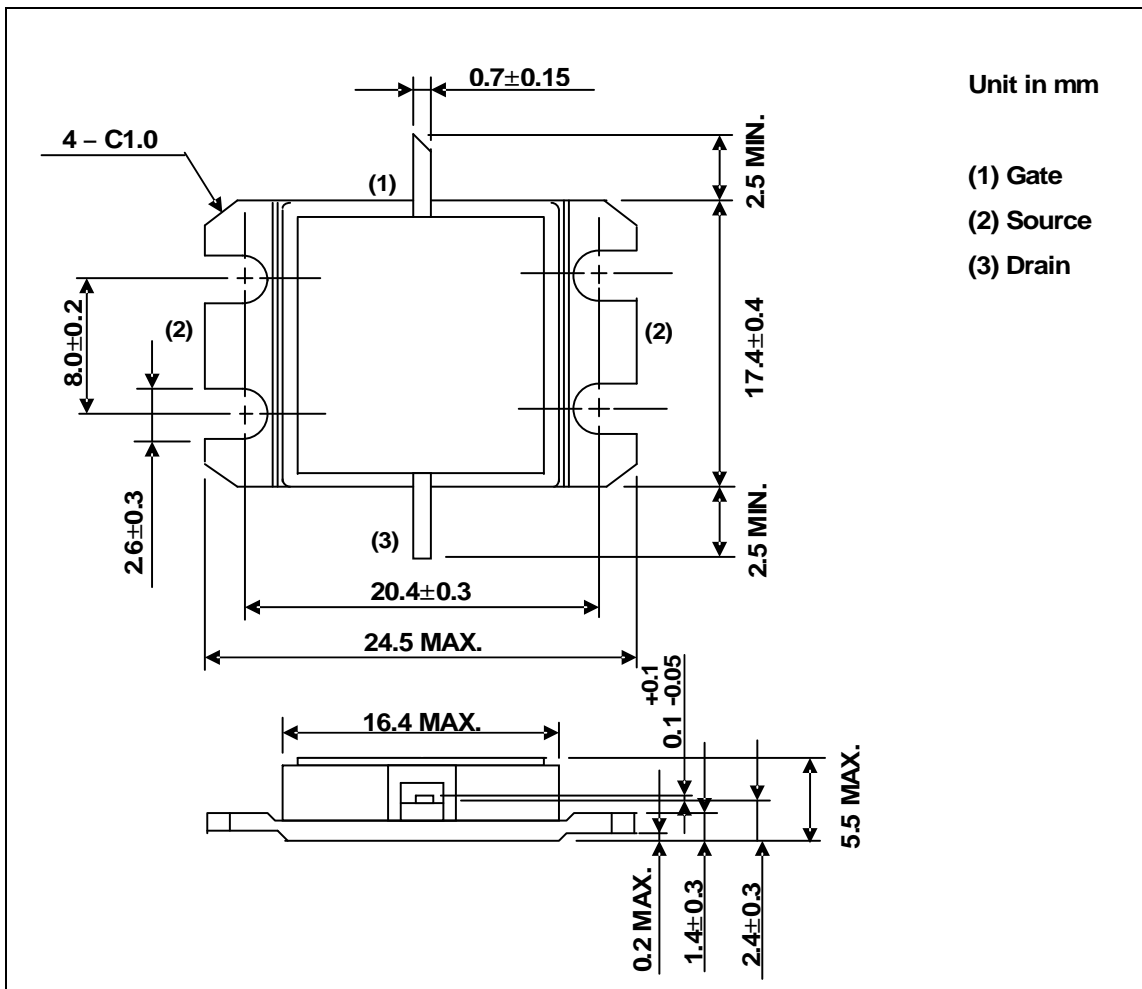
TOSHIBA CORPORATION

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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	14
Total Power Dissipation (Tc= 25 °C)	PT	W	83.3
Channel Temperature	Tch	°C	175
Storage	Tstg	°C	-65 to +175

**PACKAGE OUTLINE (2-16G1B)**

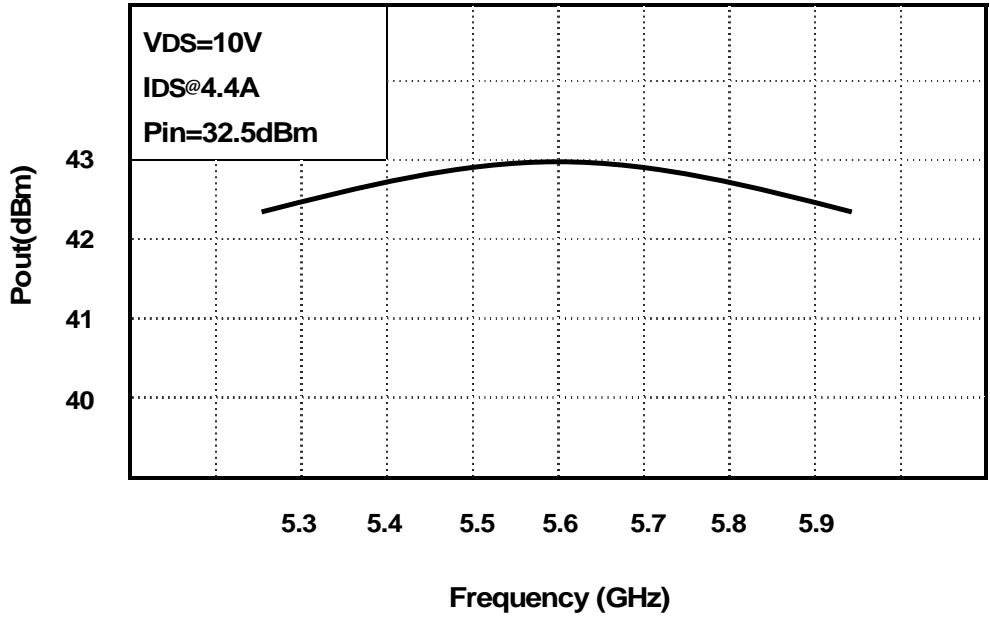


**HANDLING PRECAUTIONS FOR PACKAGE MODEL**

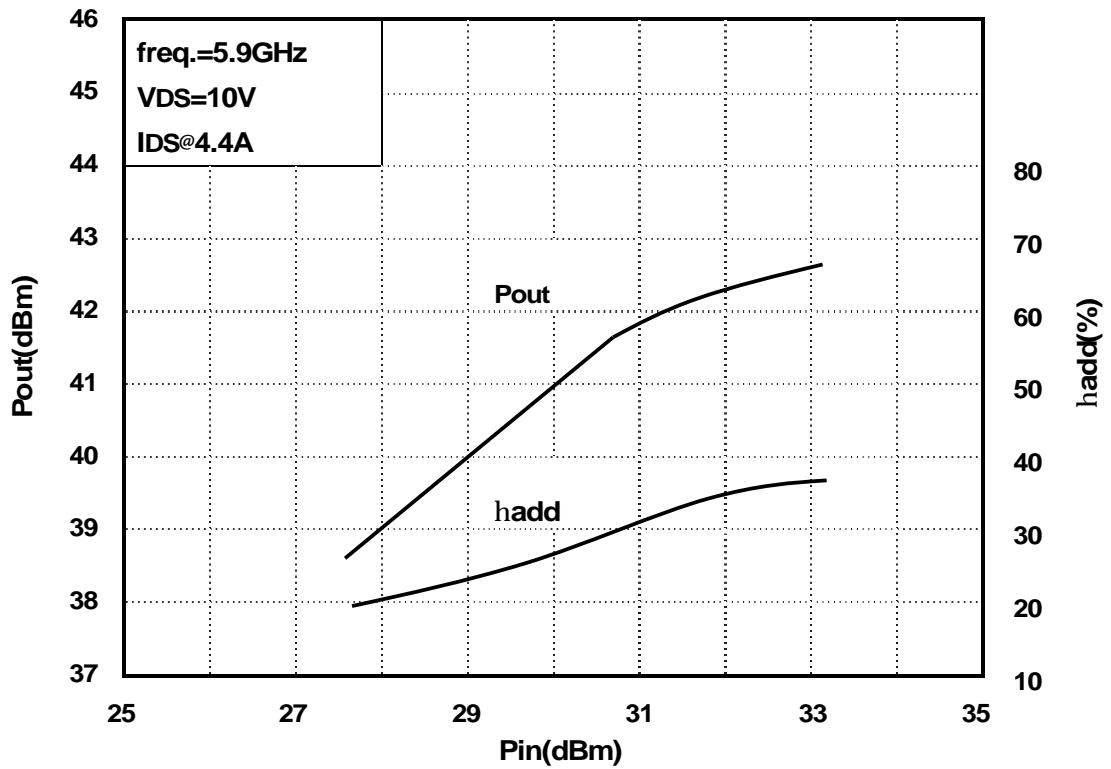
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

**RF PERFORMANCE**

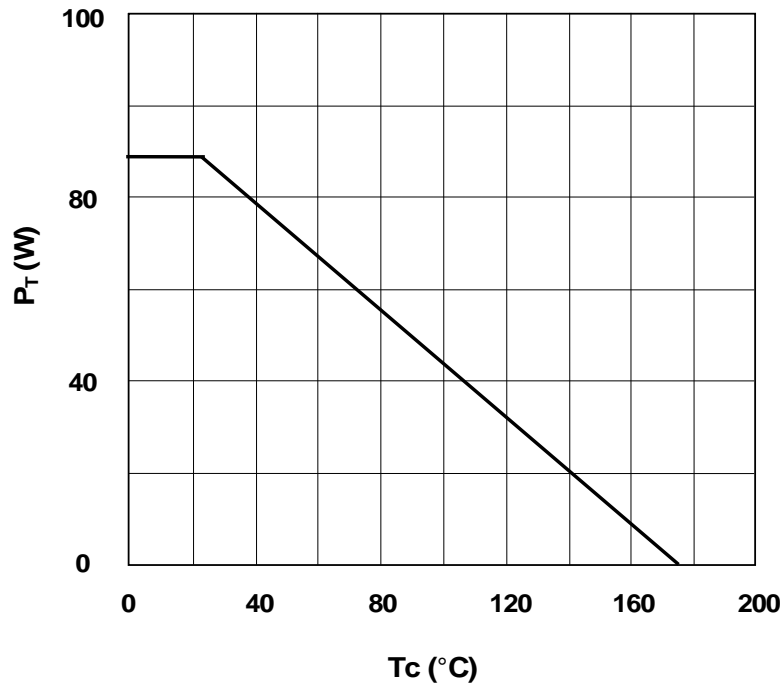
**Output Power (Pout) vs. Frequency**



**Output Power(Pout) vs. Input Power(Pin)**



**Power Dissipation vs. Case Temperature**



**IM3 vs. Output Power Characteristics**

