

TOSHIBA
MICROWAVE SEMICONDUCTOR
TECHNICAL DATA

MICROWAVE POWER GaAs FET
TIM5359-45SL

FEATURES

- **LOW INTERMODULATION DISTORTION**
 IM3=-45 dBc at Pout= 35.5dBm
 Single Carrier Level
- **HIGH POWER**
 P1dB=46.5dBm at 5.3GHz to 5.9GHz
- **HIGH GAIN**
 G1dB=9.0dB at 5.3GHz to 5.9GHz
- **BROAD BAND INTERNALLY MATCHED FET**
- **HERMETICALLY SEALED PACKAGE**

RF PERFORMANCE SPECIFICATIONS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Output Power at 1dB Gain Compression Point	P1dB	VDS= 10V f = 5.3 to 5.9GHz	dBm	46.0	46.5	—
Power Gain at 1dB Gain Compression Point	G1dB		dB	8.0	9.0	—
Drain Current	IDS		A	—	9.6	10.8
Gain Flatness	ΔG		dB	—	—	±0.8
Power Added Efficiency	ηadd		%	—	41	—
3rd Order Intermodulation Distortion	IM3	Two-Tone Test Po=35.5dBm (Single Carrier Level)	dBc	-42	-45	—
Channel Temperature Rise	ΔTch	(VDS X IDS + Pin P1dB) X Rth(c-c)	°C	—	—	100

Recommended Gate Resistance(Rg) : 28 Ω (Max.)

ELECTRICAL CHARACTERISTICS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V IDS= 11.0A	mS	—	8000	—
Pinch-off Voltage	VGSoff	VDS= 3V IDS= 170mA	V	-1.0	-2.5	-4.0
Saturated Drain Current	IDSS	VDS= 3V VGS= 0V	A	—	24	—
Gate-Source Breakdown Voltage	VGSO	IGS= -500μA	V	-5	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	0.8	1.2

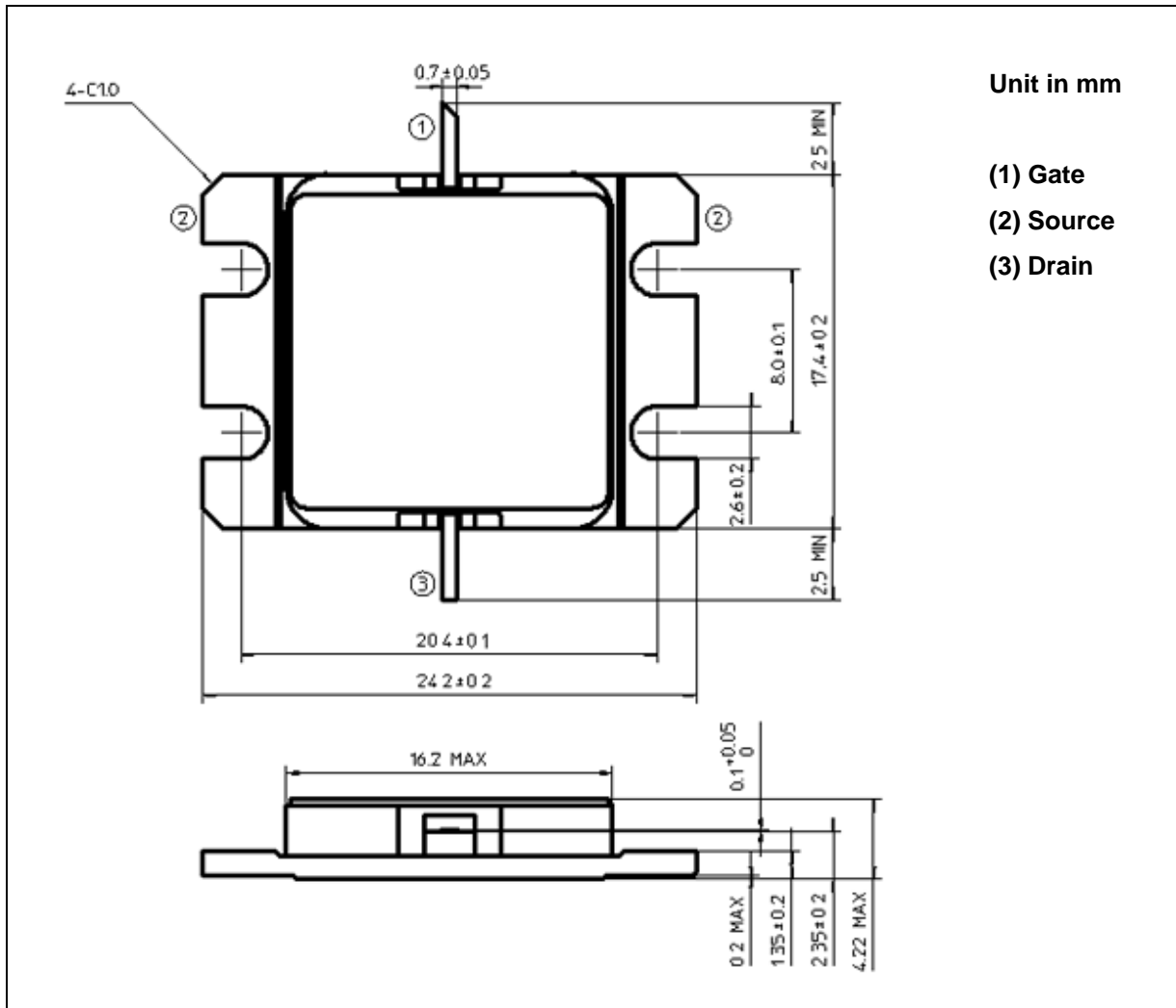
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ABSOLUTE MAXIMUM RATINGS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	VDS	V	15
Gate-Source Voltage	VGS	V	-5
Drain Current	IDS	A	20
Total Power Dissipation (Tc= 25 °C)	PT	W	125
Channel Temperature	Tch	°C	175
Storage Temperature	Tstg	°C	-65 to +175

PACKAGE OUTLINE (2-16G1B)

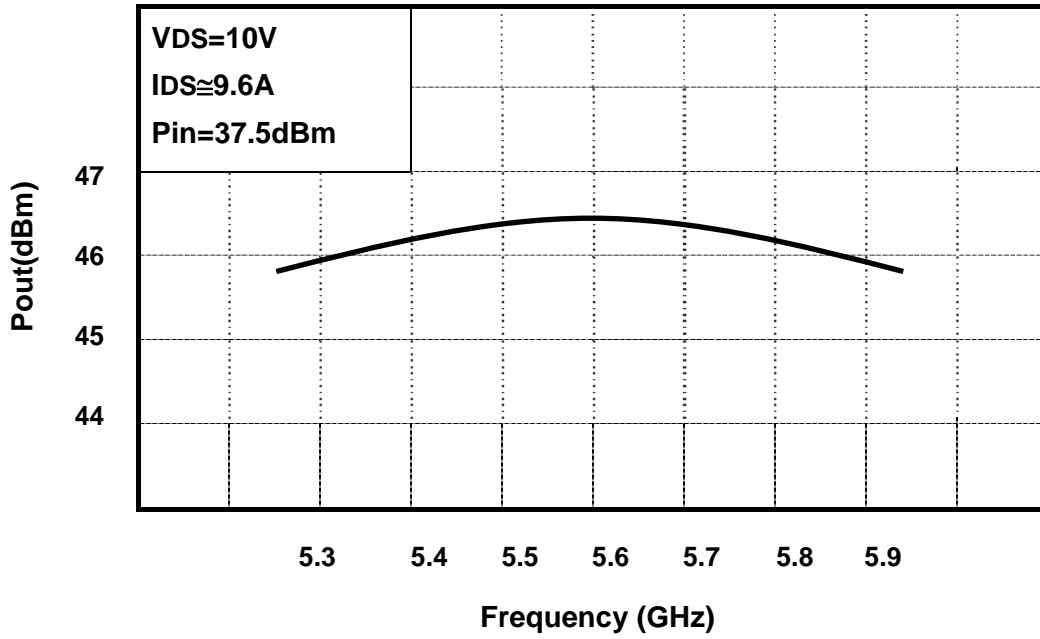


HANDLING PRECAUTIONS FOR PACKAGE MODEL

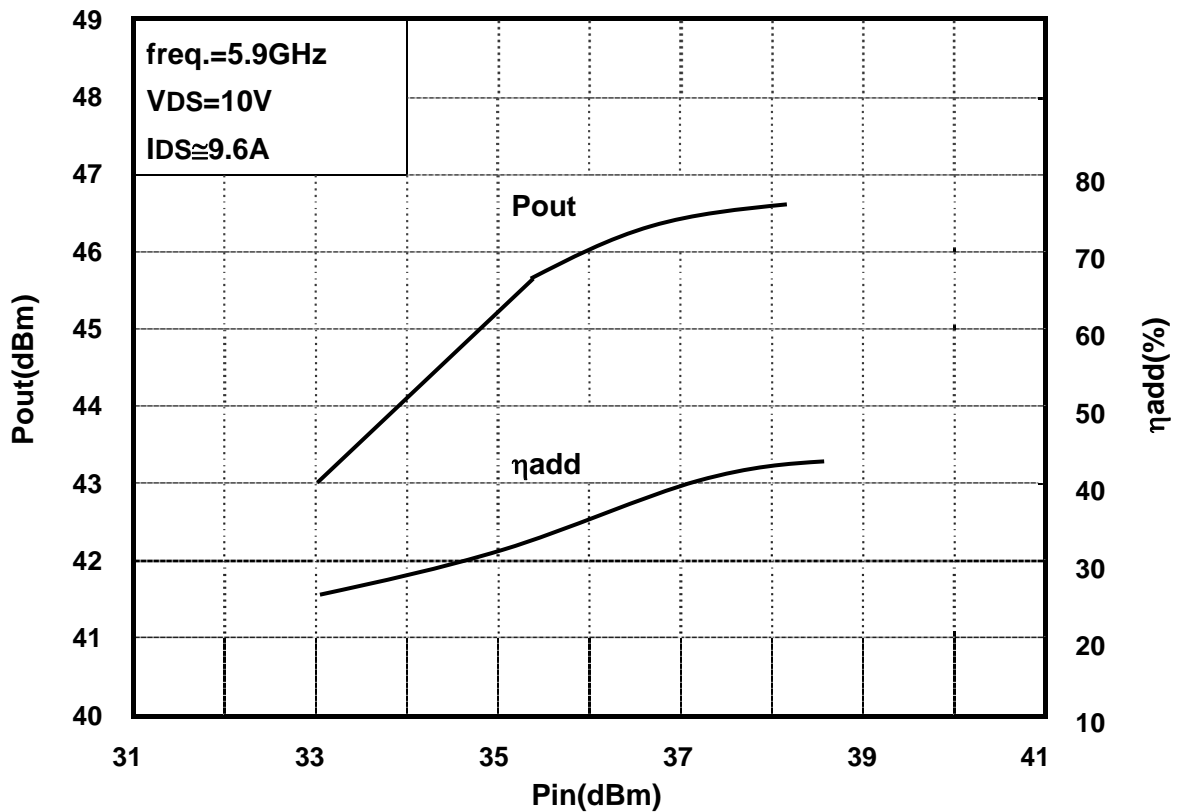
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

RF PERFORMANCE

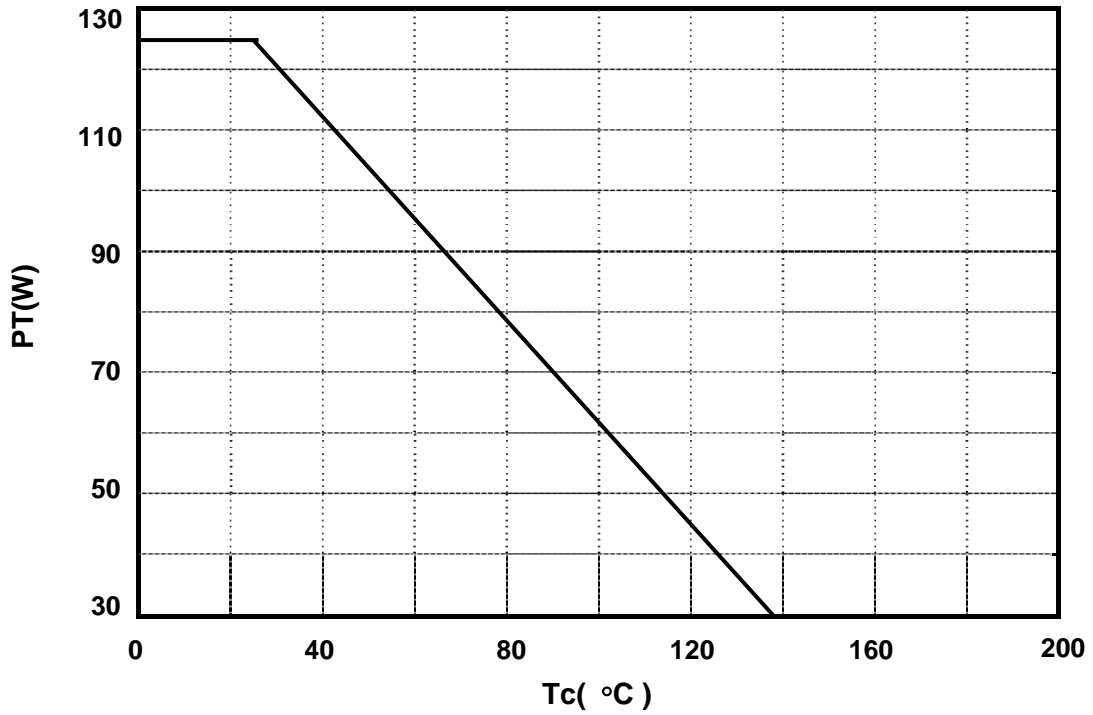
Output Power (Pout) vs. Frequency



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



Power Dissipation(PT) vs. Case Temperature(Tc)



IM3 vs. Output Power Characteristics

