

TOSHIBA**MICROWAVE SEMICONDUCTOR**
TECHNICAL DATA**MICROWAVE POWER GaAs FET**
TIM7179-60SL**FEATURES****■ LOW INTERMODULATION DISTORTION**

IM3=-45 dBc at Pout= 36.5dBm

Single Carrier Level

■ HIGH POWER

P1dB=48.0dBm at 7.1GHz to 7.9GHz

■ HIGH GAIN

G1dB=6.5dB at 7.1GHz to 7.9GHz

■ 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 Compression Point	P1dB	VDS=10V f = 7.1 to 7.9GHz IDSset \leq 9.5A	dBm	47.0	48.0	—
Power Gain at 1dB Gain Compression Point	G1dB		dB	5.5	6.5	—
Drain Current	IDS1		A	—	13.2	15.0
Gain Flatness	ΔG		dB	—	—	± 0.8
Power Added Efficiency	η_{add}		%	—	37	—
3rd Order Intermodulation Distortion	IM3		dBc	-42	-45	—
Drain Current	IDS2	Two-Tone Test Po=36.5dBm (Single Carrier Level)	A	—	—	11.8
Channel Temperature Rise	ΔT_{ch}	(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	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V IDS= 12.0A	S	—	20	—
Pinch-off Voltage	VGSoff	VDS= 3V IDS= 200mA	V	-1.0	-1.8	-3.0
Saturated Drain Current	IDSS	VDS= 3V VGS= 0V	A	—	38	—
Gate-Source Breakdown Voltage	VGSO	IGS= -1.0mA	V	-5	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	0.6	0.8

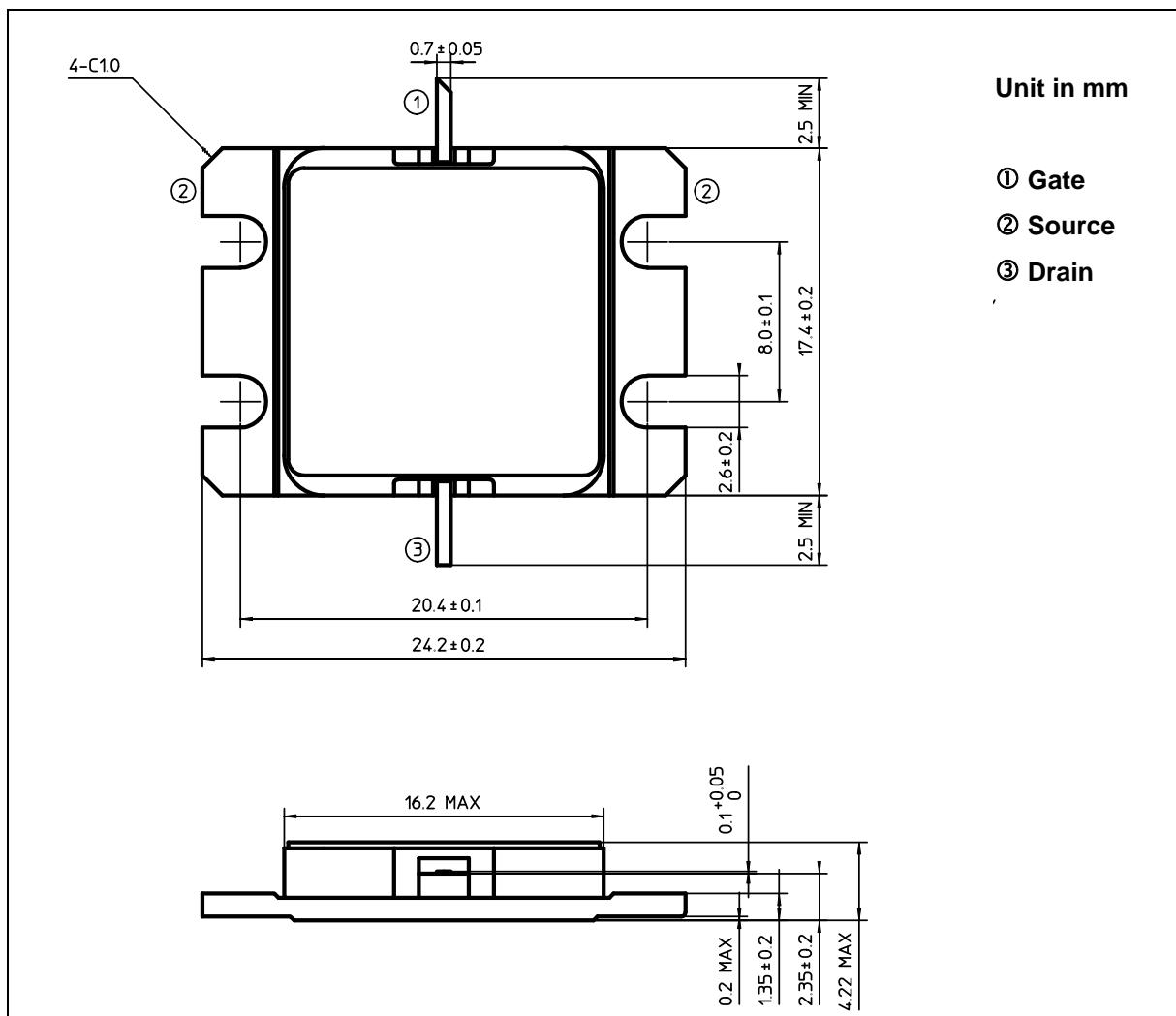
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The information contained herein is subject to change without prior notice. It is therefor advisable to contact TOSHIBA before proceeding with design of equipment incorporating this product.

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	20
Total Power Dissipation (Tc= 25 °C)	PT	W	187.5
Channel Temperature	Tch	°C	175
Storage Temperature	Tstg	°C	-65 to +175

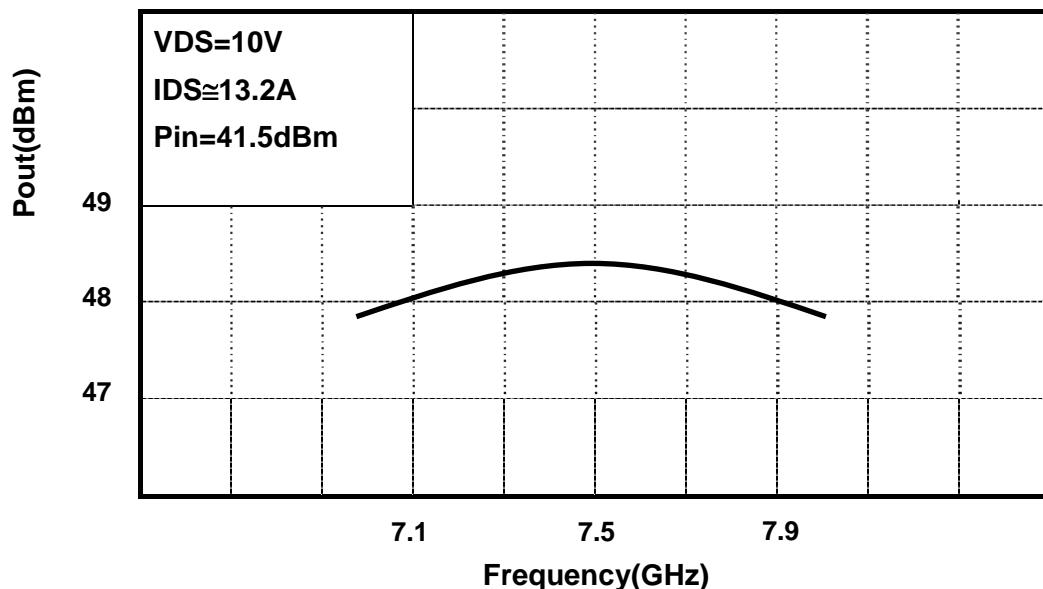
PACKAGE OUTLINE (2-16G1B)

HANDLING PRECAUTIONS FOR PACKAGE MODEL

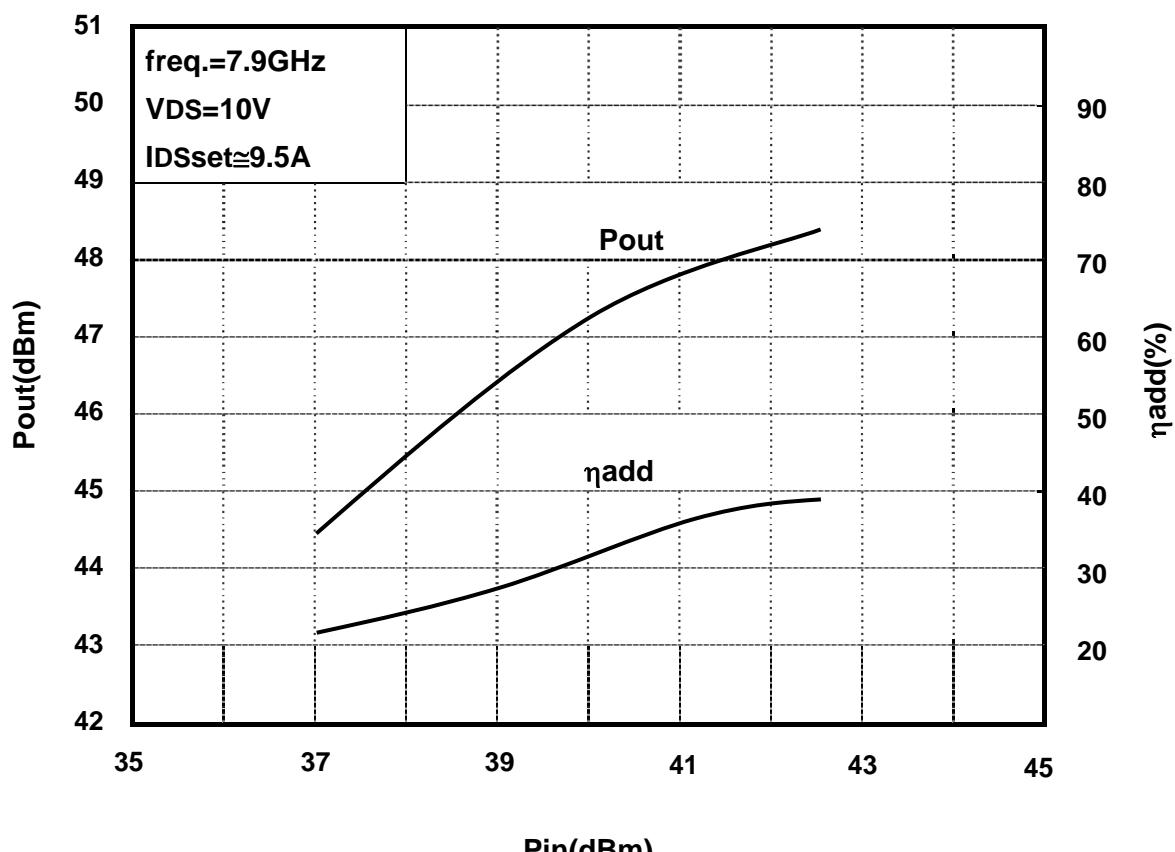
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

RF PERFORMANCE

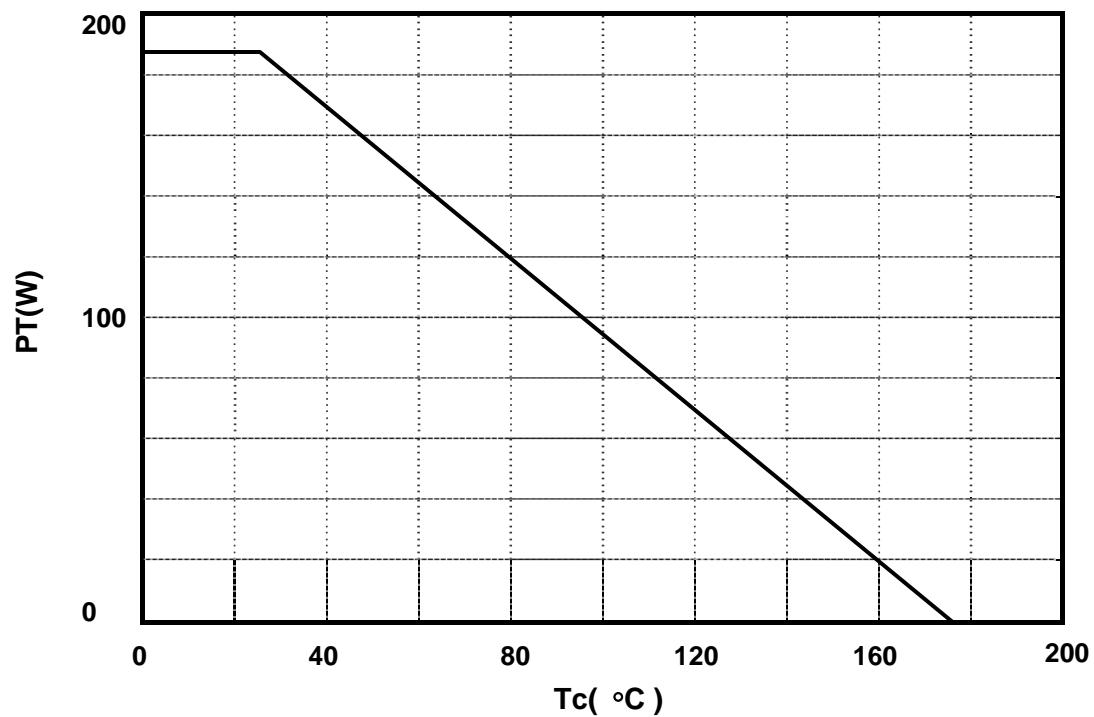
Output Power (Pout) vs. Frequency



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



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



IM3 vs. Power Characteristics

