

TOSHIBA**MICROWAVE SEMICONDUCTOR**
TECHNICAL DATA**MICROWAVE POWER GaAs FET****TIM3742-30SL-341****FEATURES****■ LOW INTERMODULATION DISTORTION**

IM3=-45 dBc at Po= 34.5 dBm,

Single Carrier Level

■ HIGH POWER

P1dB=45.0 dBm at 3.3GHz to 3.6GHz

■ HIGH GAIN

G1dB=11.0dB at 3.3GHz to 3.6GHz

■ 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 = 3.3 to 3.6GHz	dBm	44.0	45.0	—
Power Gain at 1dB Gain Compression Point	G1dB		dB	10.0	11.0	—
Drain Current	IDS1		A	—	7.0	8.0
Gain Flatness	ΔG		dB	—	—	±0.8
Power Added Efficiency	ηadd		%	—	42	—
3rd Order Intermodulation Distortion	IM3		dBc	-42	-45	—
Drain Current	IDS2		A	—	7.0	8.0
Channel Temperature Rise	ΔTch	(VDS X IDS + Pin - P1dB) X Rth(c-c)	°C	—	—	100

Recommended gate resistance(Rg) : Rg= 28 Ω(MAX.)

ELECTRICAL CHARACTERISTICS (Ta= 25°C)

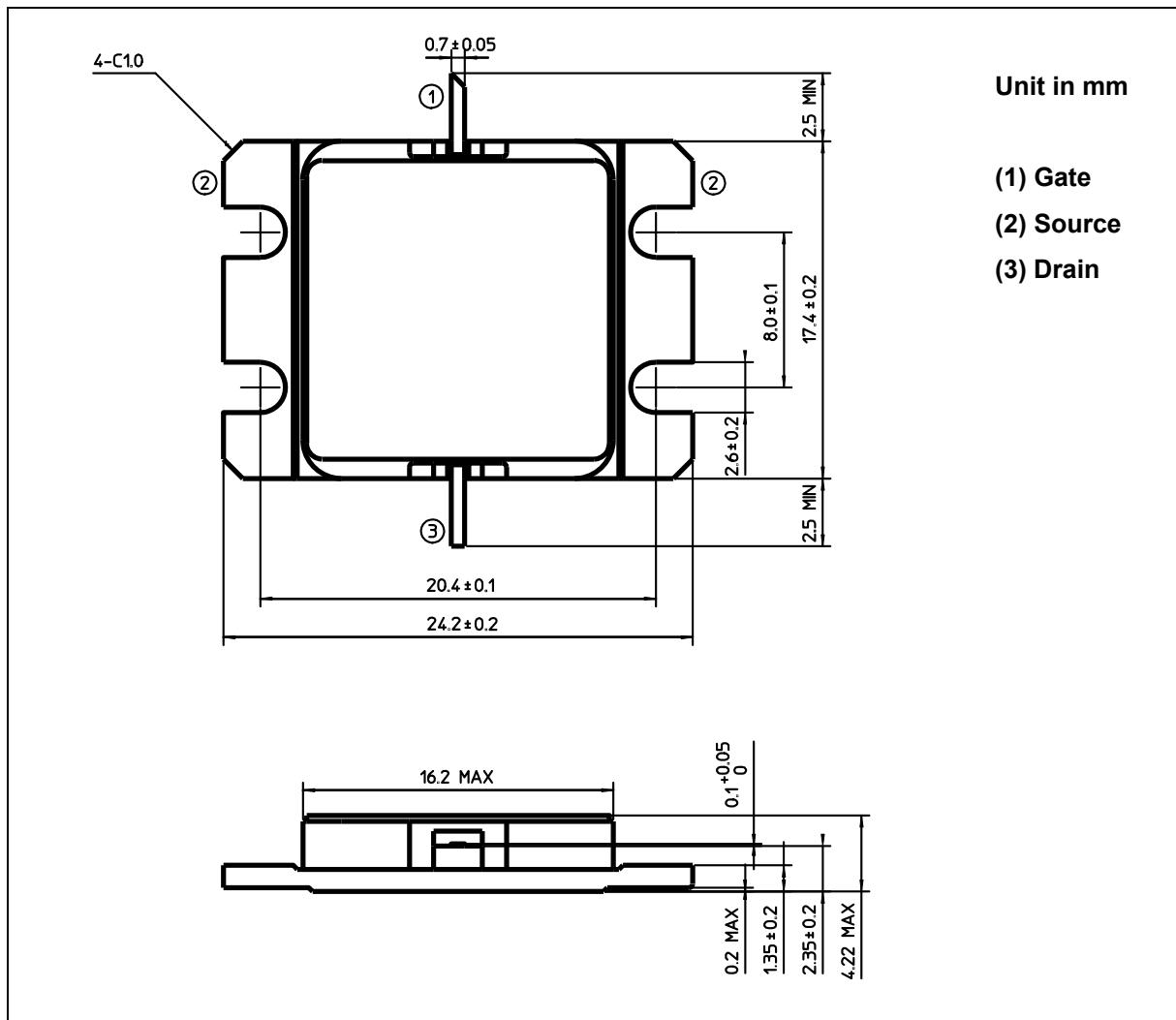
CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V IDS= 10A	mS	—	6300	—
Pinch-off Voltage	VGSoff	VDS= 3V IDS= 100mA	V	-1.0	-2.5	-4.0
Saturated Drain Current	IDSS	VDS= 3V VGS= 0V	A	—	18	—
Gate-Source Breakdown Voltage	VGSO	IGS= -350μA	V	-5	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	1.0	1.3

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

ABSOLUTE MAXIMUM RATINGS (Ta= 25°C)

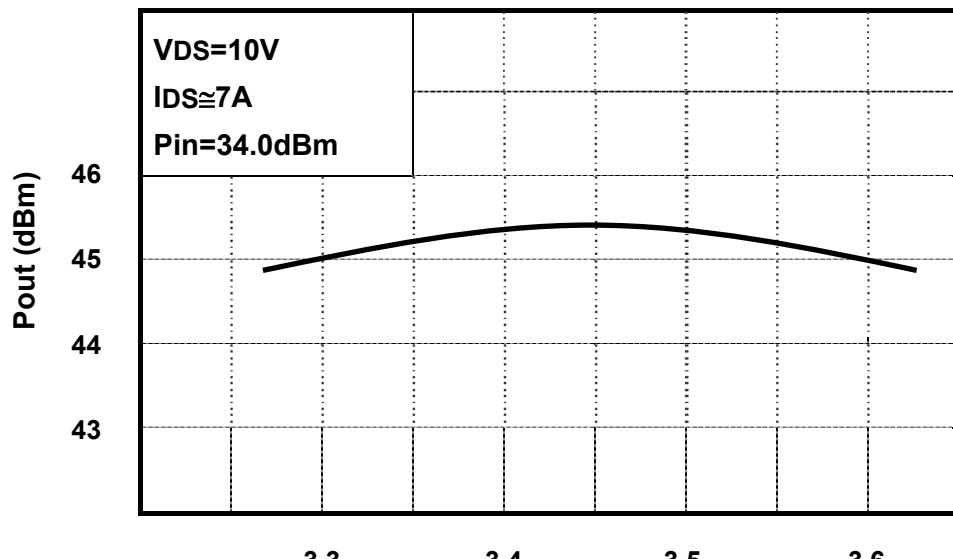
CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	V _{DS}	V	15
Gate-Source Voltage	V _G S	V	-5
Drain Current	I _{DS}	A	20
Total Power Dissipation (T _c = 25 °C)	P _T	W	115.4
Channel Temperature	T _{ch}	°C	175
Storage	T _{stg}	°C	-65 to +175

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.

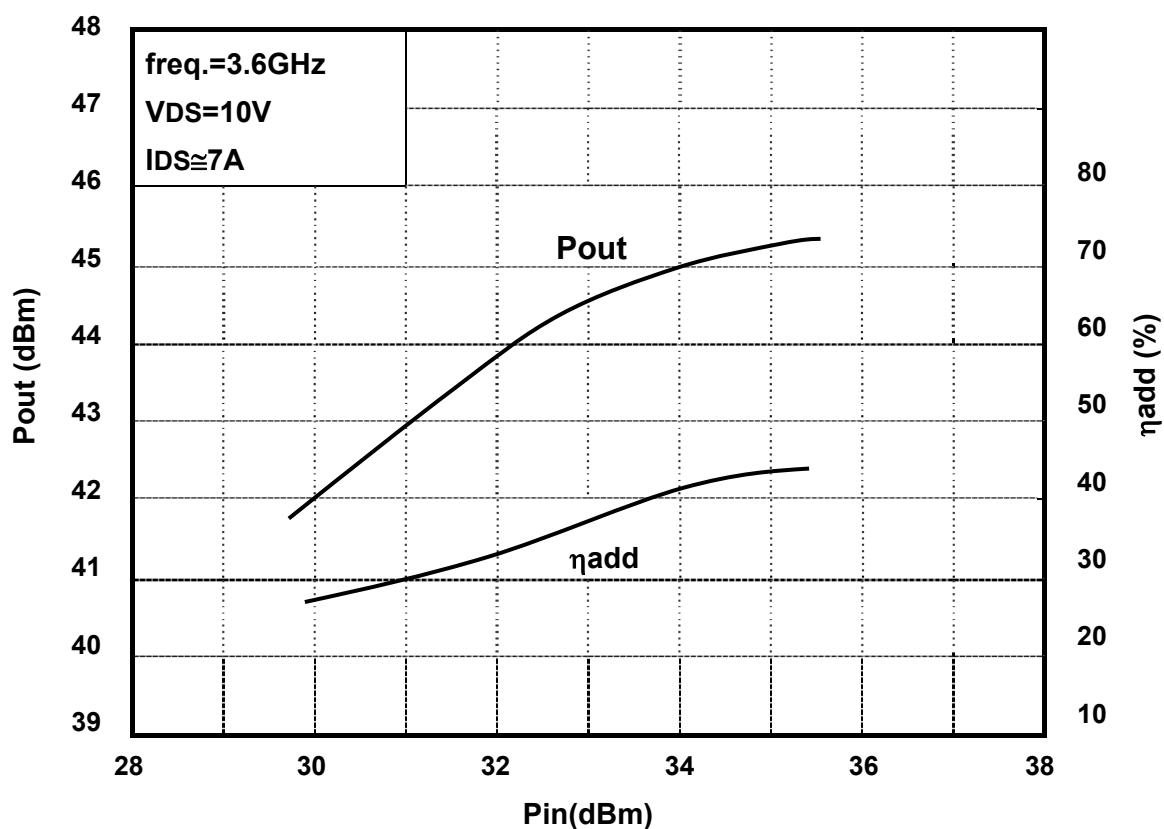
RF PERFORMANCE

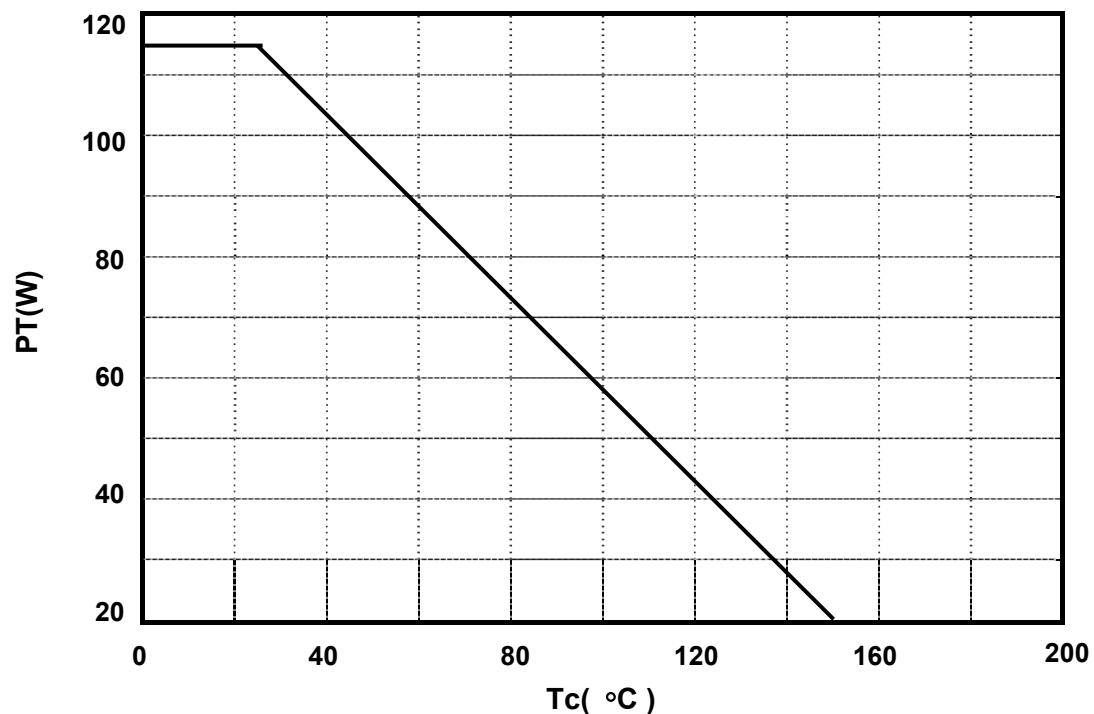
Output Power (Pout) vs. Frequency



Frequency (GHz)

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



Power Dissipation(PT) vs. Case Temperature(Tc)**IM3 vs. Output Power Characteristics**