

TOSHIBA
MICROWAVE SEMICONDUCTOR
TECHNICAL DATA

MICROWAVE POWER GaAs FET
TIM1415-2

FEATURES

n **HIGH POWER**

P1dB=33.5dBm at 14.5GHz to 15.0GHz

n **HIGH GAIN**

G1dB=6.0dB at 14.5GHz to 15.0GHz

n **BROAD BAND INTERNALLY MATCHED**

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= 9V f= 14.5 to 15.0GHz	dBm	32.5	33.5	—
Power Gain at 1dB Gain Compression Point	G1dB		dB	5.0	6.0	—
Drain Current	IDS1		A	—	0.85	1.1
Power Added Efficiency	η_{add}		%	—	22	—
Channel Temperature Rise	ΔT_{ch}		(VDS X IDS + Pin - P1dB) X Rth(c-c)	°C	—	—

Recommended gate resistance(Rg) : Rg= 150 W(MAX.)

ELECTRICAL CHARACTERISTICS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V IDS= 1.0A	mS	—	600	—
Pinch-off Voltage	VGSoff	VDS= 3V IDS= 30mA	V	-2.0	-3.5	-5.0
Saturated Drain Current	IDSS	VDS= 3V VGS= 0V	A	—	2.0	2.6
Gate-Source Breakdown Voltage	VGSO	IGS= -30μA	V	-5	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	5.0	6.0

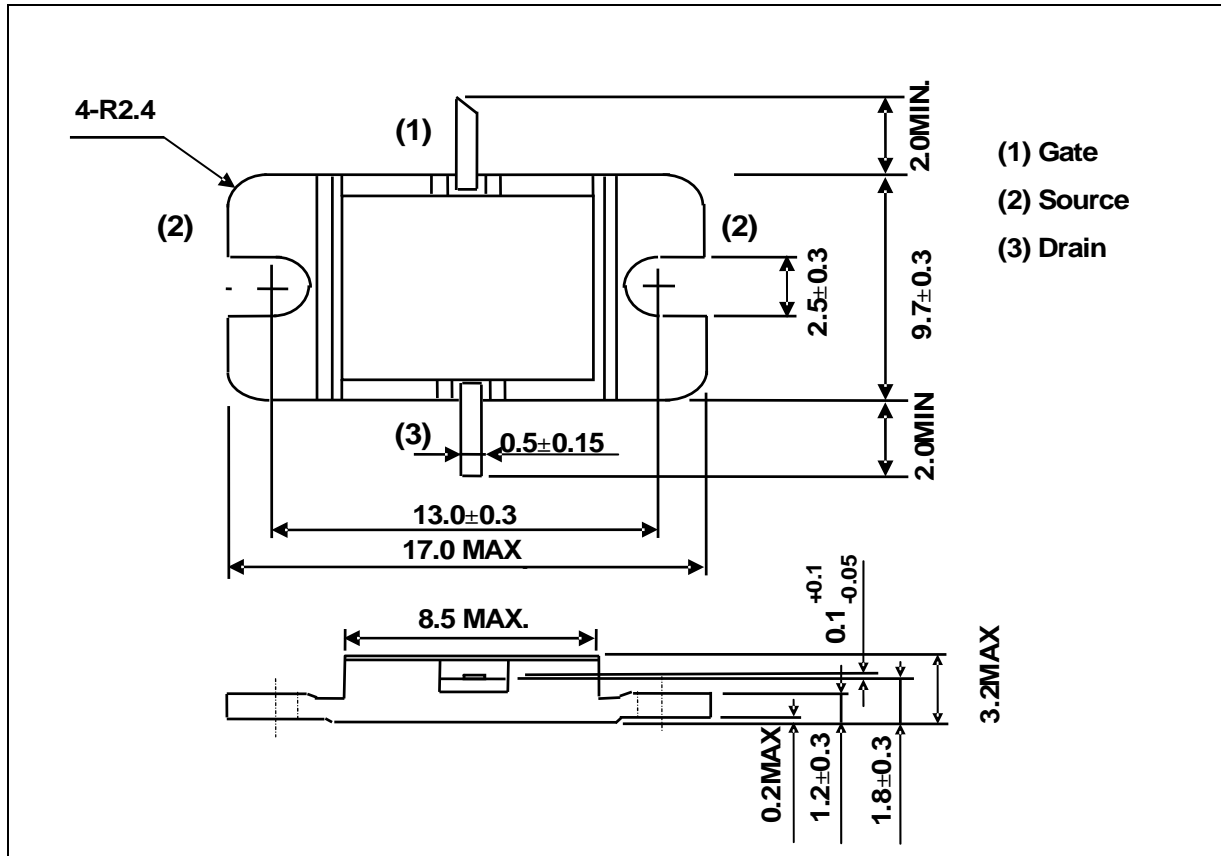
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ABSOLUTE MAXIMUM RATINGS (Ta= 25°C)

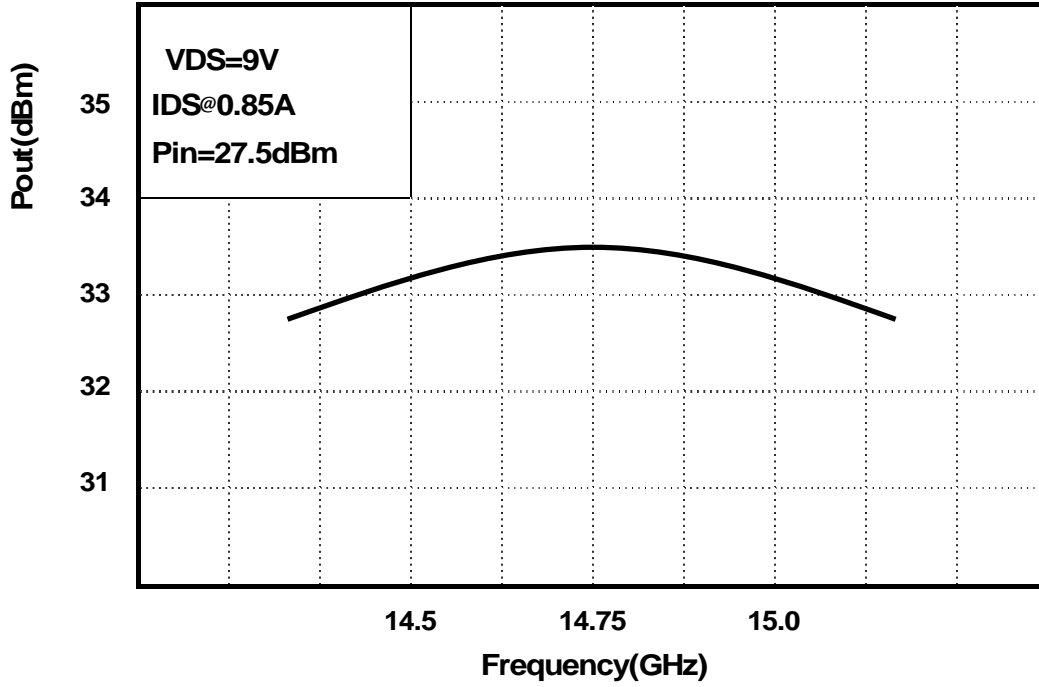
CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	V _{DS}	V	15
Gate-Source Voltage	V _{GS}	V	-5
Drain Current	I _{DS}	A	2.6
Total Power Dissipation (T _c = 25 °C)	PT	W	25
Channel Temperature	T _{ch}	°C	175
Storage Temperature	T _{stg}	°C	-65 to +175

PACKAGE OUTLINE (2-9D1B)**HANDLING PRECAUTIONS FOR PACKAGE MODEL**

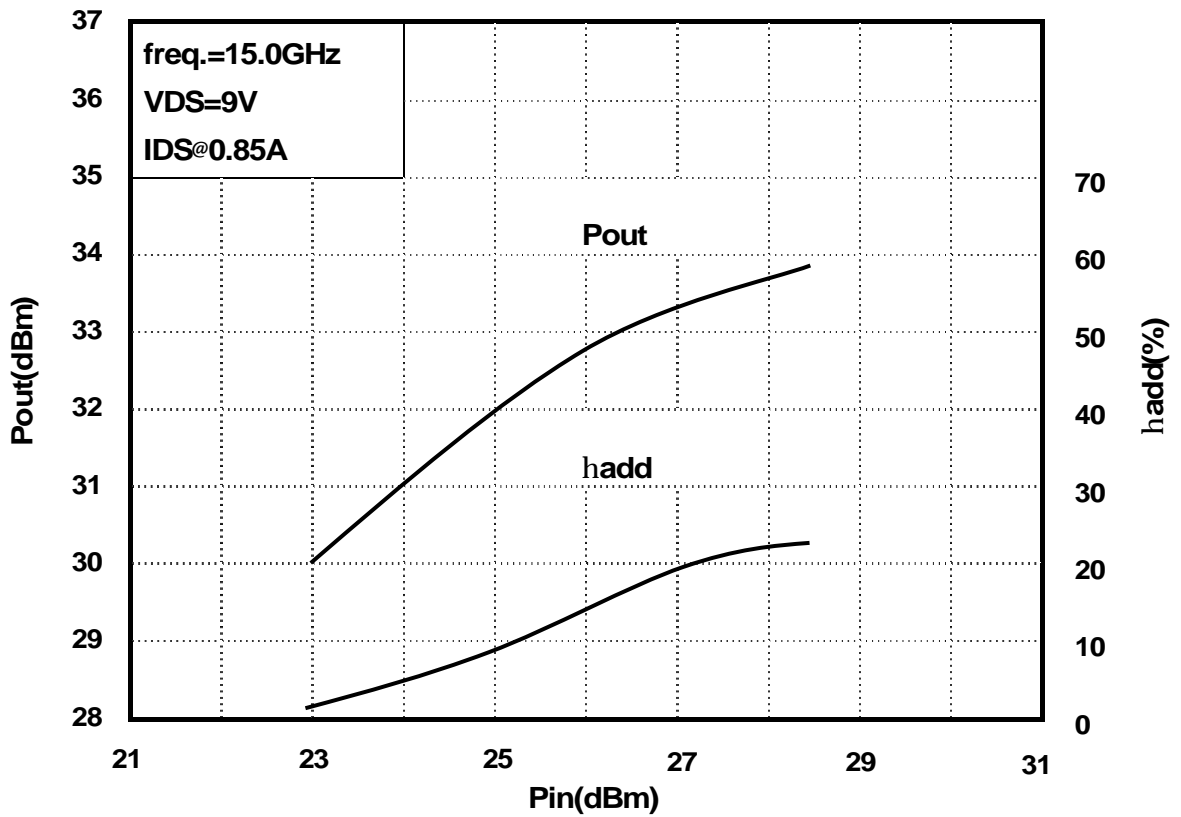
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

RF PERFORMANCE

Output Power (Pout) vs. Frequency



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



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

