MICROWAVE POWER GaAs FET
TIM3742-30SL-341

FEATURES

- **BROAD BAND INTERNALLY MATCHED FET**
- **HIGH POWER**
  P1dB= 45.0dBm at 3.3GHz to 3.6GHz
- **HIGH GAIN**
  G1dB= 10.0dB(Min.) at 3.3GHz to 3.6GHz
- **LOW INTERMODULATION DISTORTION**
  IM3= -45dBc at Pout= 34.5dBm
  Single Carrier Level
- **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 IDSset= 7.0A 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	Two Tone Test Po= 34.5dBm, Δf= 5MHz (Single Carrier Level)	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): 28 Ω

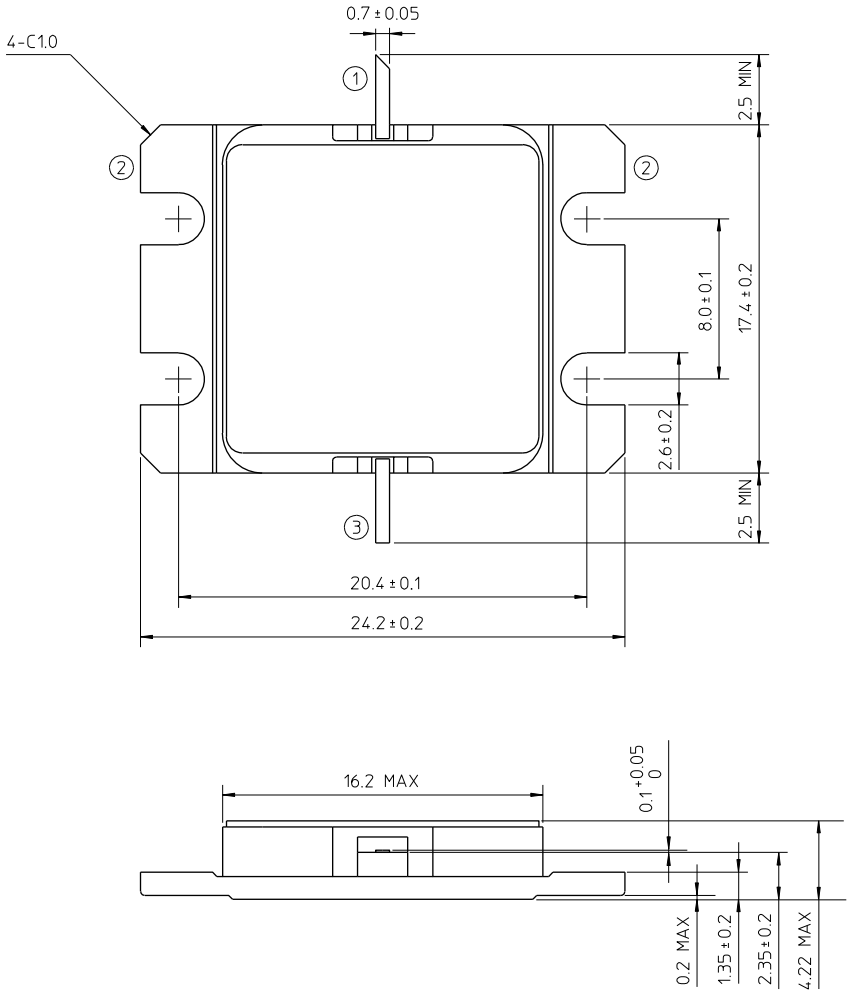
ELECTRICAL CHARACTERISTICS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 3V IDS= 10A	S	—	6.3	—
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

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	115.4
Channel Temperature	Tch	°C	175
Storage Temperature	Tstg	°C	-65 to +175

PACKAGE OUTLINE (2-16G1B)



Unit in mm

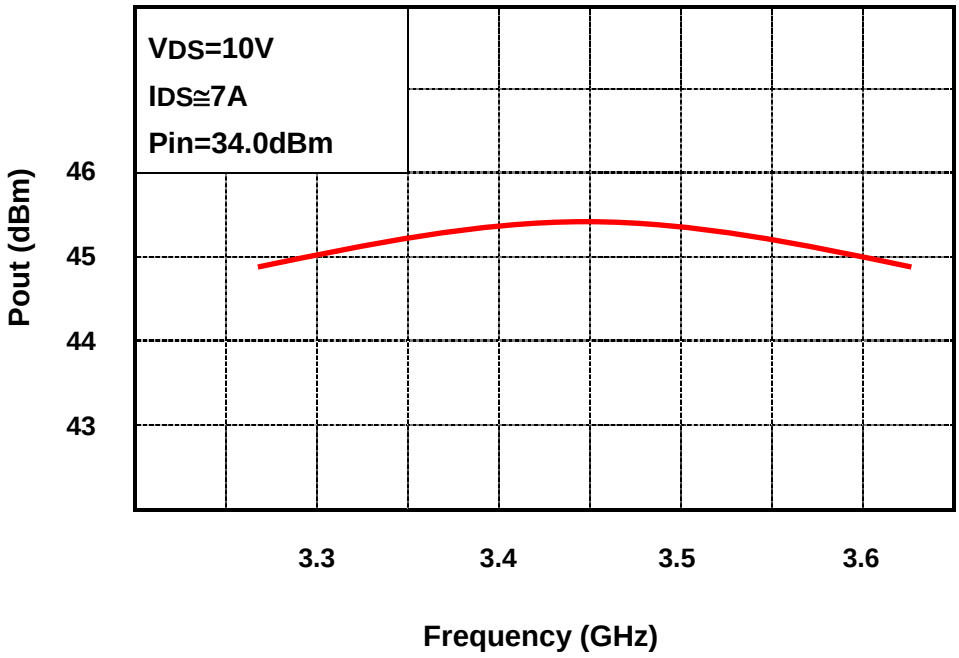
① **Gate**
② **Source**
③ **Drain**

HANDLING PRECAUTIONS FOR PACKAGE MODEL

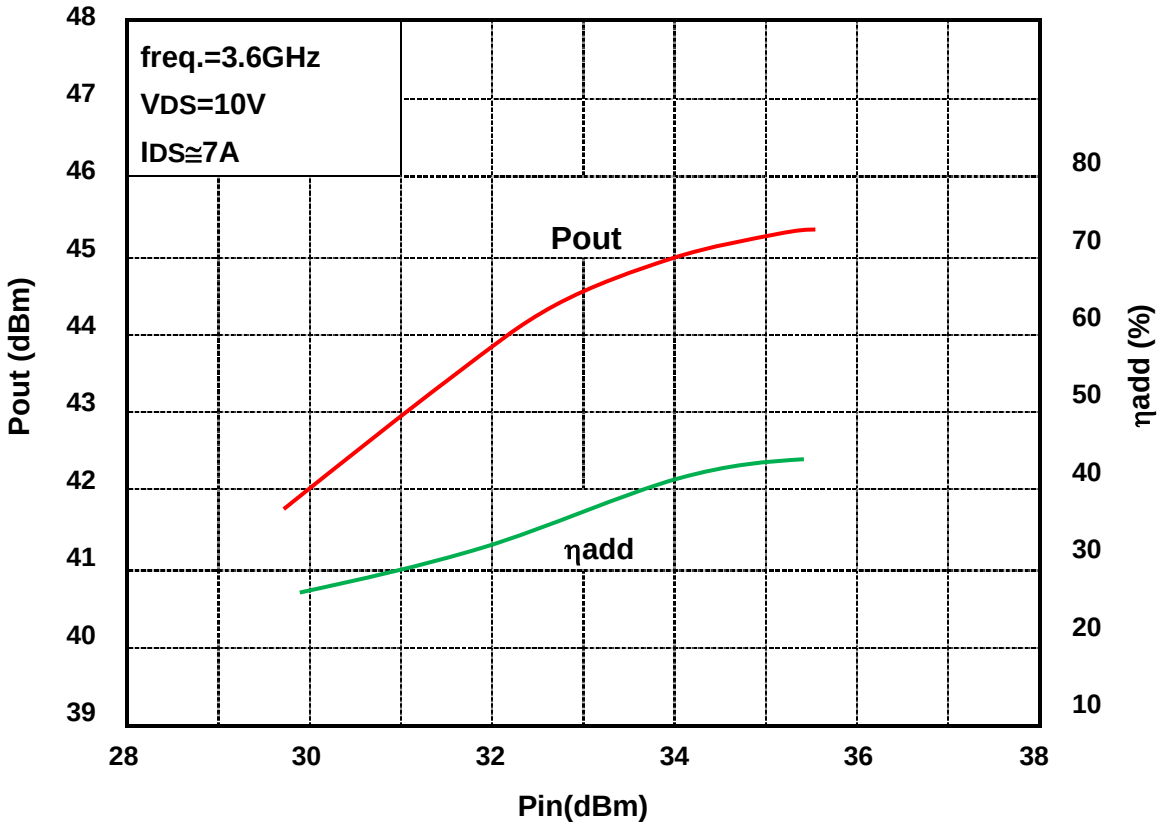
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C or 3 seconds at 350°C.

RF PERFORMANCE

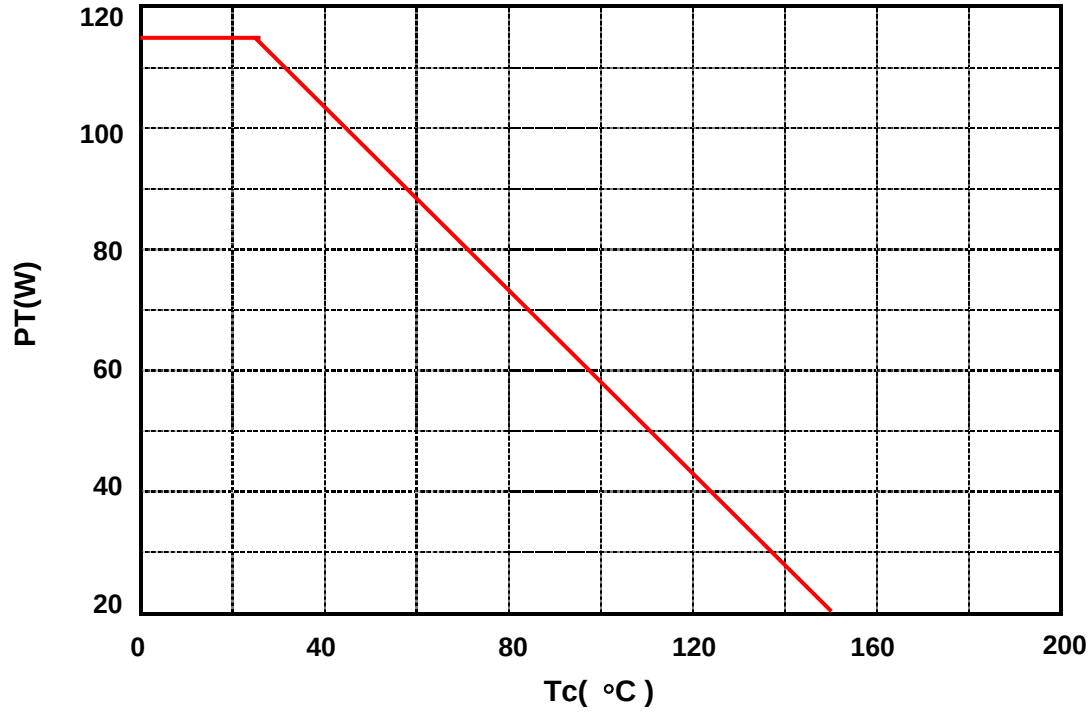
Output Power (Pout) vs. Frequency



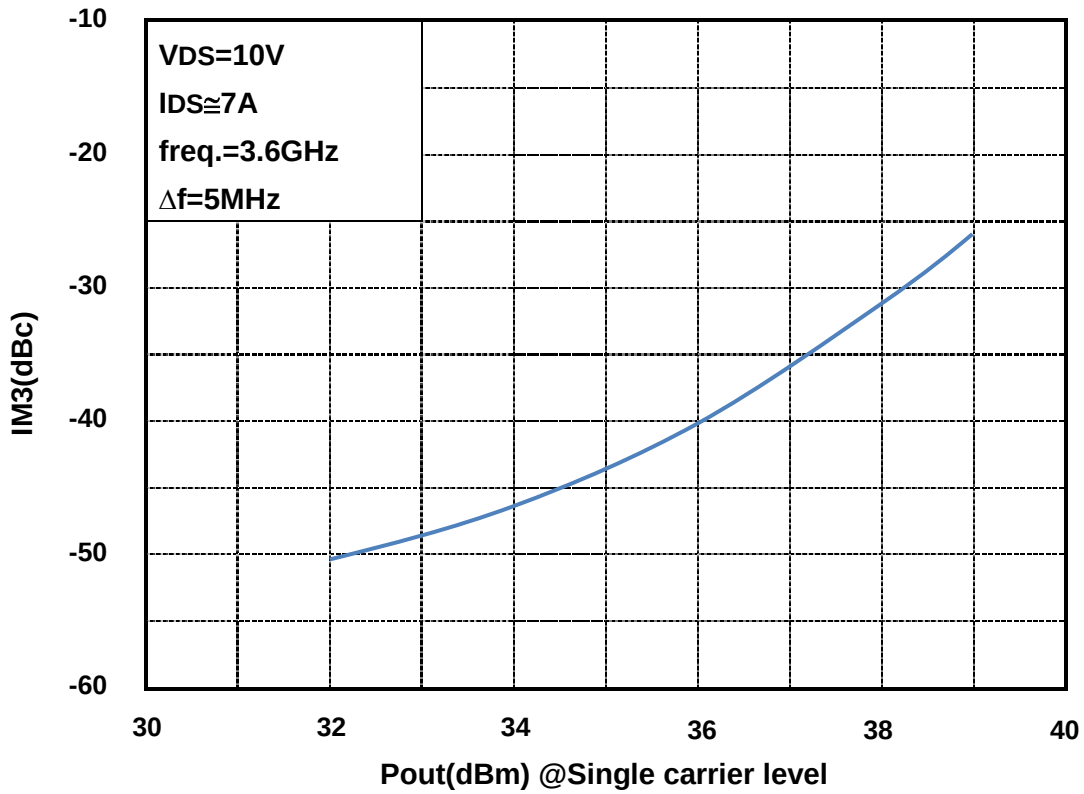
Output Power(Pout) vs. Input Power(Pin)



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



IM3 vs. Output Power Characteristics



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