

#### FEATURES:

- LOW INTERMODULATION DISTORTION  
IM<sub>3</sub> = -45 dBc at P<sub>o</sub> 25.5 dBm,  
Single Carrier Level
- HIGH GAIN  
G<sub>1dB</sub> = 10.5dB at 3.7 GHz to 4.2 GHz
- BROAD BAND INTERNALLY MATCHED
- HIGH POWER  
P<sub>1dB</sub> = 36.5 dBm at 3.7 GHz to 4.2 GHz
- HERMETICALLY SEALED PACKAGE

#### RF PERFORMANCE SPECIFICATIONS (Ta = 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Output Power at 1 dB Compression Point	P <sub>1dB</sub>	V <sub>DS</sub> = 10V f = 3.7~4.2GHz	dBm	35.5	36.5	-
Power Gain at 1 dB Compression Point	G <sub>1dB</sub>		dB	9.5	10.5	-
Drain Current	I <sub>DS</sub>		A	-	1.1	1.3
Gain Flatness	ΔG		dB	-	-	±0.6
Power Added Efficiency	η <sub>add</sub>		%	-	37	-
3rd Order Intermodulation Distortion	IM <sub>3</sub>	Note 1	dBc	-42	-45	-
Channel Temperature Rise	ΔT <sub>ch</sub>	V <sub>DS</sub> × I <sub>DS</sub> × R <sub>th(c-c)</sub>	°C	-	-	80

#### ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Trans-conductance	gm	V <sub>DS</sub> = 3V I <sub>DS</sub> = 1.5A	mS	-	900	-
Pinch-off Voltage	V <sub>GSoFF</sub>	V <sub>DS</sub> = 3V I <sub>DS</sub> = 15mA	V	-1	-2.5	-4.0
Saturated Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 3V V <sub>GS</sub> = 0V	A	-	2.6	3.5
Gate-Source Breakdown Voltage	V <sub>GSO</sub>	I <sub>GS</sub> = -50 μA	V	-5	-	-
Thermal Resistance	R <sub>th(c-c)</sub>	Channel to Case	°C/W	-	4.5	6.5

Note 1: 2 tone Test Pout = 25.5dBm Single Carrier Level.

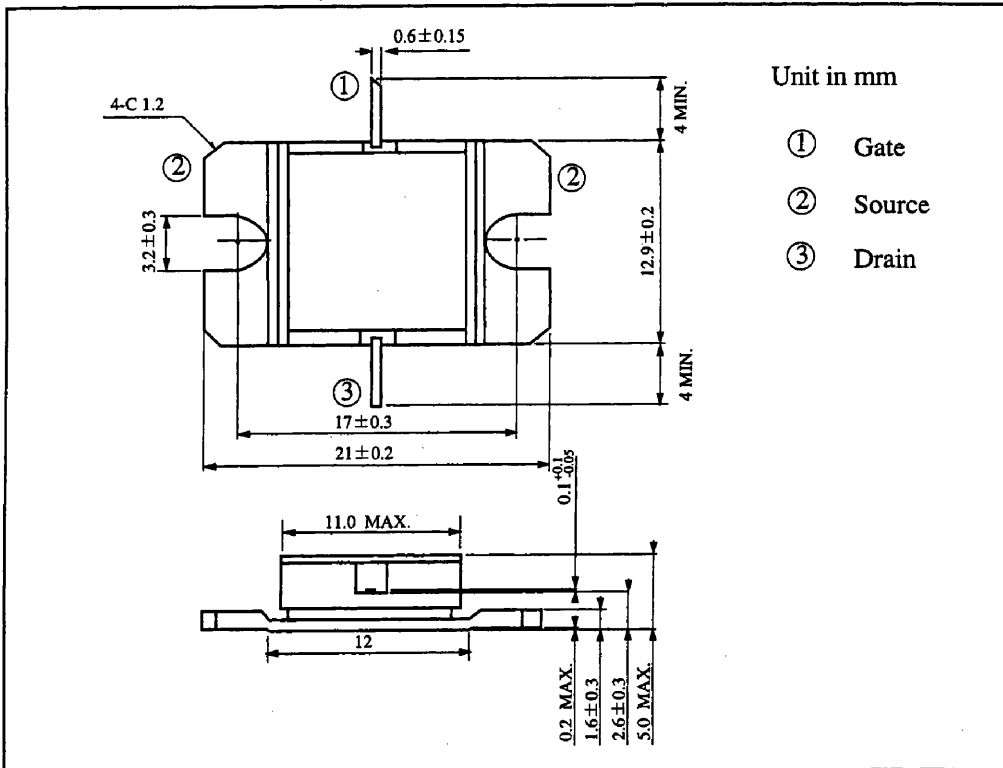
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# TIM3742-4SL

## ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	V <sub>ds</sub>	V	15
Gate-Source Voltage	V <sub>gs</sub>	V	-5
Drain Current	I <sub>ds</sub>	A	3.5
Total Power Dissipation (Tc=25°C)	P <sub>r</sub>	W	23
Channel Temperature	T <sub>ch</sub>	°C	175
Storage Temperature	T <sub>stg</sub>	°C	-65~175

## PACKAGE OUTLINE (2-11D1B)

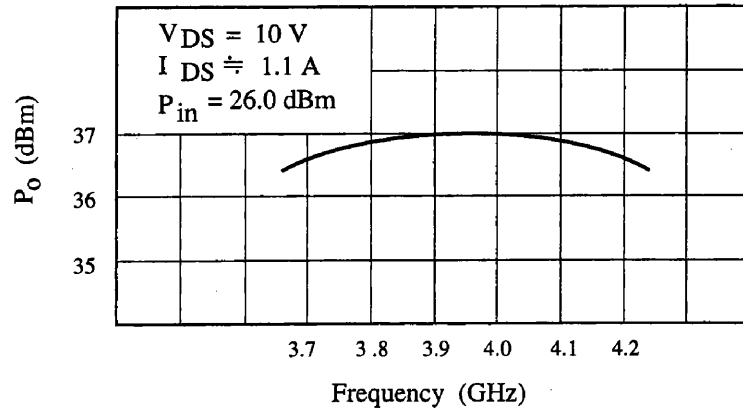


## HANDLING PRECAUTIONS FOR PACKAGED TYPE

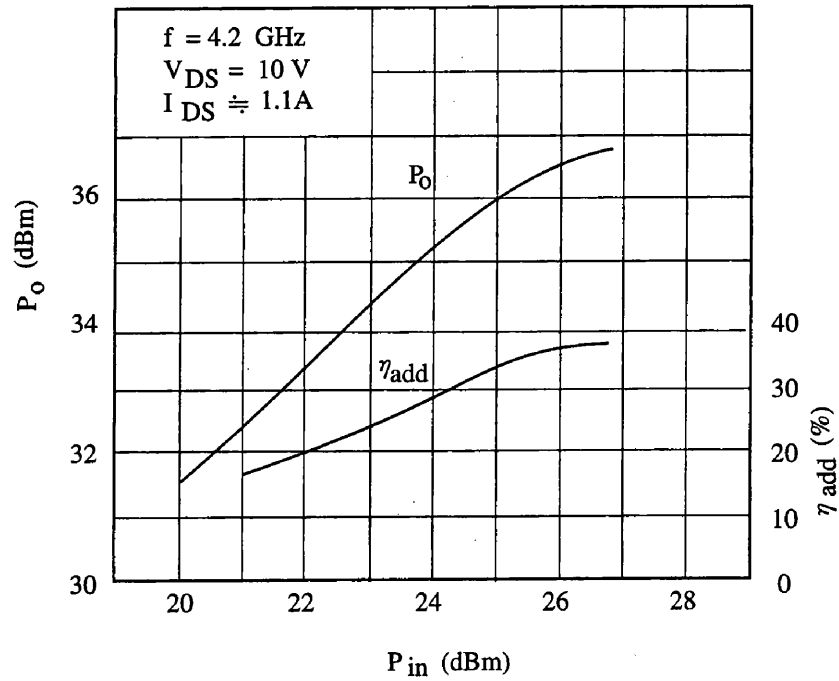
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

RF PERFORMANCES

Output Power vs. Frequency

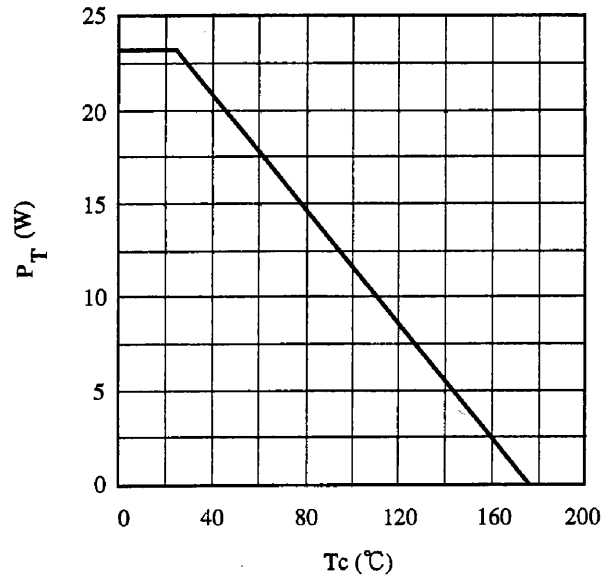


Output Power vs. Input Power



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## POWER DISSIPATION VS. CASE TEMPERATURE



## IM<sub>3</sub> VS. OUTPUT POWER CHARACTERISTICS

