

# TOSHIBA

MICROWAVE SEMICONDUCTOR

## TECHNICAL DATA

MICROWAVE POWER GaAs FET

TIM3742-8SL-341

### FEATURES:

- LOW INTERMODULATION DISTORTION  
IM3 = -45 dBc at Po 28.5 dBm,  
Single Carrier Level
- HIGH POWER  
P1dB = 39.5 dBm at 3.3 GHz to 3.6 GHz

- HIGH GAIN  
G1dB = 11 dB at 3.3 GHz to 3.6 GHz
- BROAD BAND INTERNALLY MATCHED
- HERMETICALLY SEALED PACKAGE

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

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Output Power at 1 dB Compression Point	P1dB	VDS = 10V f = 3.3~3.6GHz	dBm	38.5	39.5	-
Power Gain at 1 dB Compression Point	G1dB		dB	10.0	11.0	-
Drain Current	IDS		A	-	2.2	2.6
Gain Flatness	ΔG		dB	-	-	±0.6
Power Added Efficiency	η add		%	-	36	-
3rd Order Intermodulation Distortion	IM3	Note 1	dBc	-42	-45	-
Channel Temperature Rise	ΔTch	VDS × IDS × Rth(c-c)	°C	-	-	80

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

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Trans- conductance	gm	VDS = 3V IDS = 3.0A	mS	-	1800	-
Pinch-off Voltage	VGSoff	VDS = 3V IDS = 30mA	V	-1	-2.5	-4.0
Saturated Drain Current	IDSS	VDS = 3V VGS = 0V	A	-	5.2	7.0
Gate-Source Breakdown Voltage	VGSO	IGS = -100 μA	V	-5	-	-
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	-	2.5	3.8

Note 1: 2 tone Test Pout = 28.5dBm Single Carrier Level.

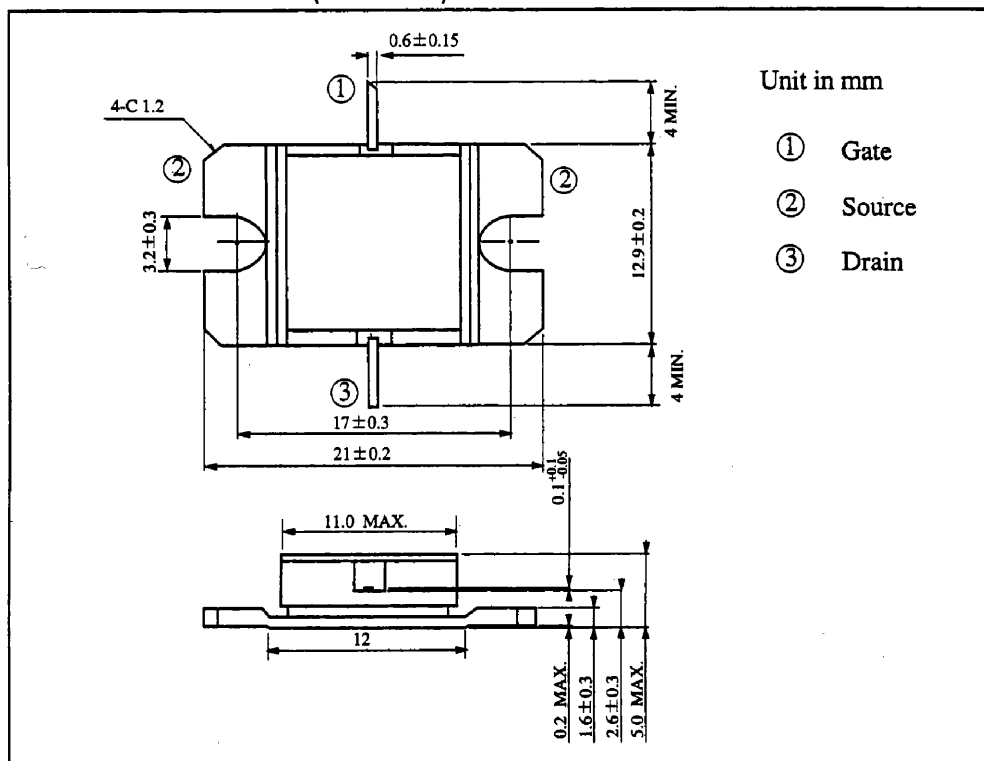
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# TIM3742-8SL-341

## ABSOLUTE MAXIMUM RATINGS (Ta = 25℃)

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	7.0
Total Power Dissipation (Tc=25℃)	P <sub>T</sub>	W	37.5
Channel Temperature	T <sub>ch</sub>	℃	175
Storage Temperature	T <sub>stg</sub>	℃	-65~175

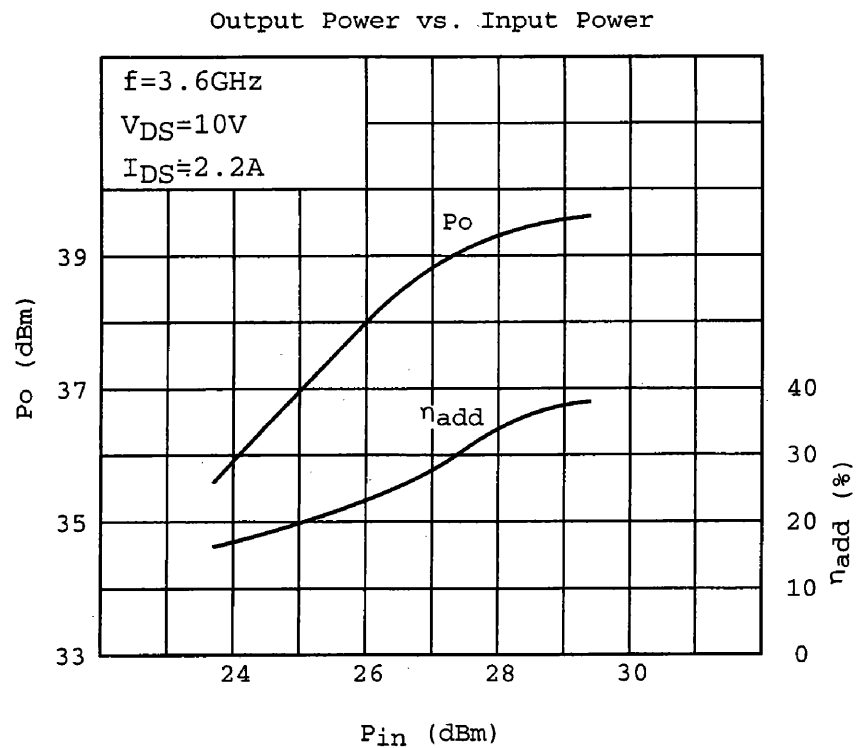
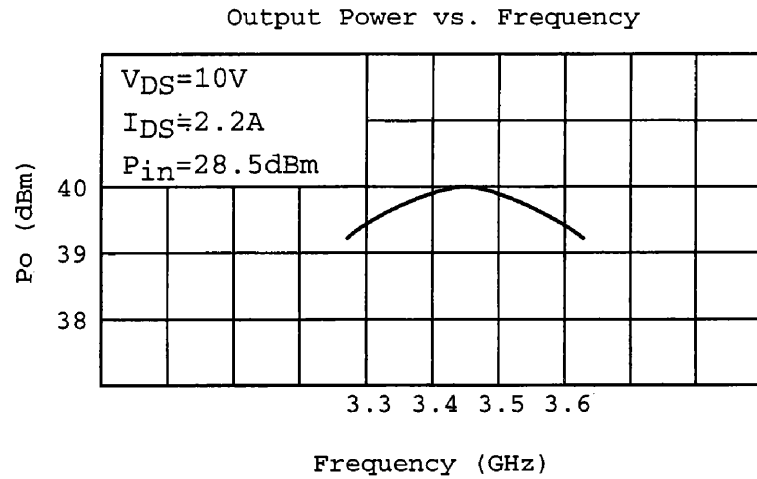
## PACKAGE OUTLINE (2-11D1B)



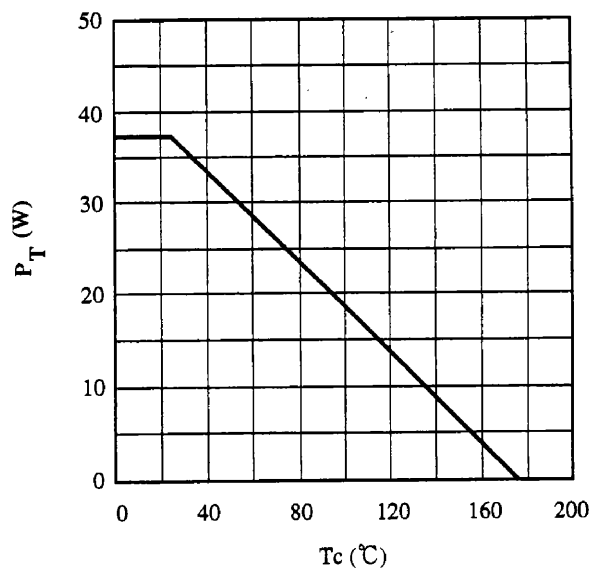
## HANDLING PRECAUTIONS FOR PACKAGED TYPE

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

## RF PERFORMANCES.



## POWER DISSIPATION VS. CASE TEMPERATURE



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

