

FEATURES :

- LOW INTERMODULATION DISTORTION
IM₃ = -45 dBc at P_o = 31.5 dBm,
Single Carrier Level
- HIGH GAIN
G_{1dB} = 9.5 dB at 3.7 GHz to 4.2 GHz
- HIGH POWER
P_{1dB} = 42.5 dBm at 3.7GHz to 4.2GHz
- 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	P _{1dB}	V _{DS} = 10 V f = 3.7 ~ 4.2GHz	dBm	41.5	42.5	—
Power Gain at 1 dB Compression Point	G _{1dB}		dB	8.5	9.5	—
Drain Current	I _{DS}		A	—	4.4	5.0
Gain Flatness	ΔG		dB	—	—	±0.8
Power Added Efficiency	η _{add}		%	—	36	—
3rd Order Intermodulation Distortion	IM ₃	Note 1	dBc	-42	-45	—
Channel-Temperature Rise	ΔT _{ch}	V _{DS} × I _{DS} × R _{th} (c-c)	°C	—	—	80

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	V _{DS} = 3 V I _{DS} = 6.0 A	mS	—	3600	—
Pinch-off Voltage	V _{Gsoff}	V _{DS} = 3 V I _{DS} = 60 mA	V	-1	-2.5	-4.0
Saturated Drain Current	I _{DSS}	V _{DS} = 3 V V _{GS} = 0 V	A	—	10.5	14.0
Gate-Source Breakdown Voltage	V _{GSO}	I _{GS} = -200 μA	V	-5	—	—
Thermal Resistance	R _{th} (c-c)	Channel to Case	°C/W	—	1.5	2.0

Note 1.: 2 tone Test Pout = 31.5 dBm Single Carrier Level.

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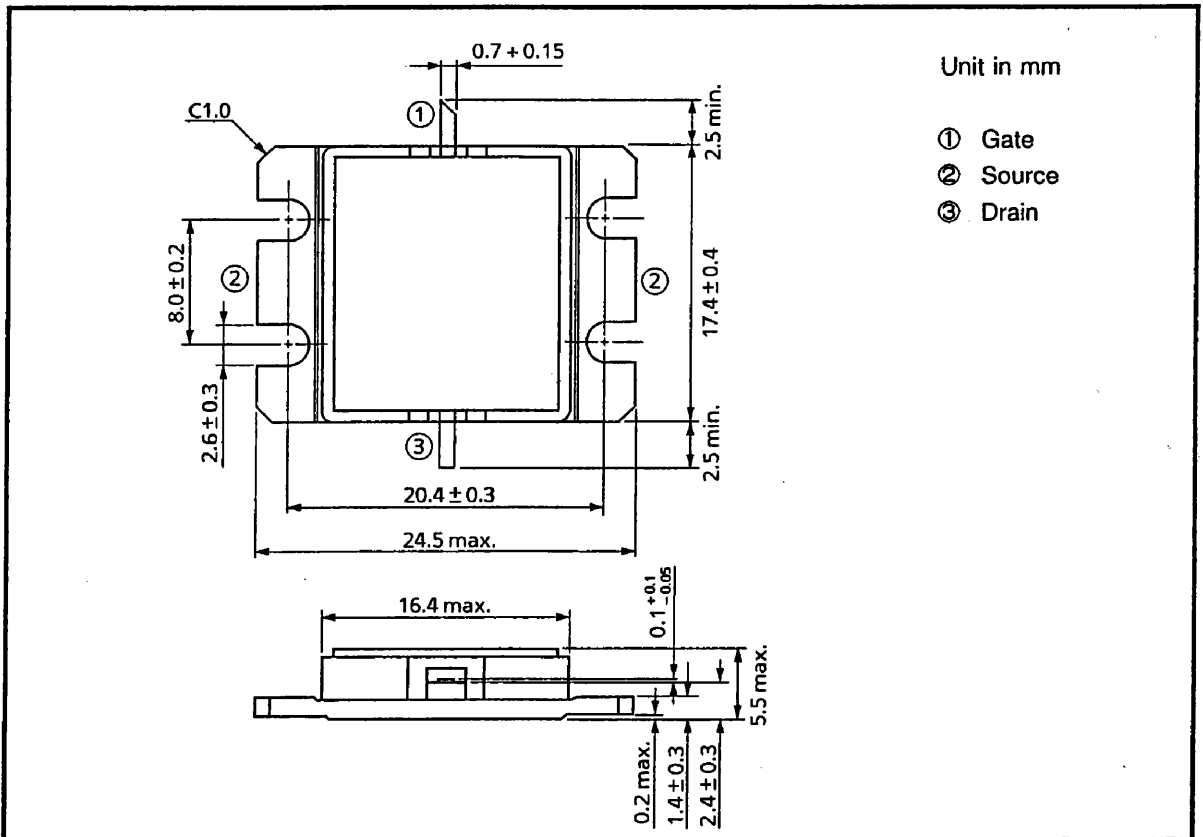


TIM3742-16SL

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	14
Total Power Dissipation (T _C = 25°C)	P _T	W	75
Channel Temperature	T _{ch}	°C	175
Storage Temperature	T _{stg}	°C	-65~175

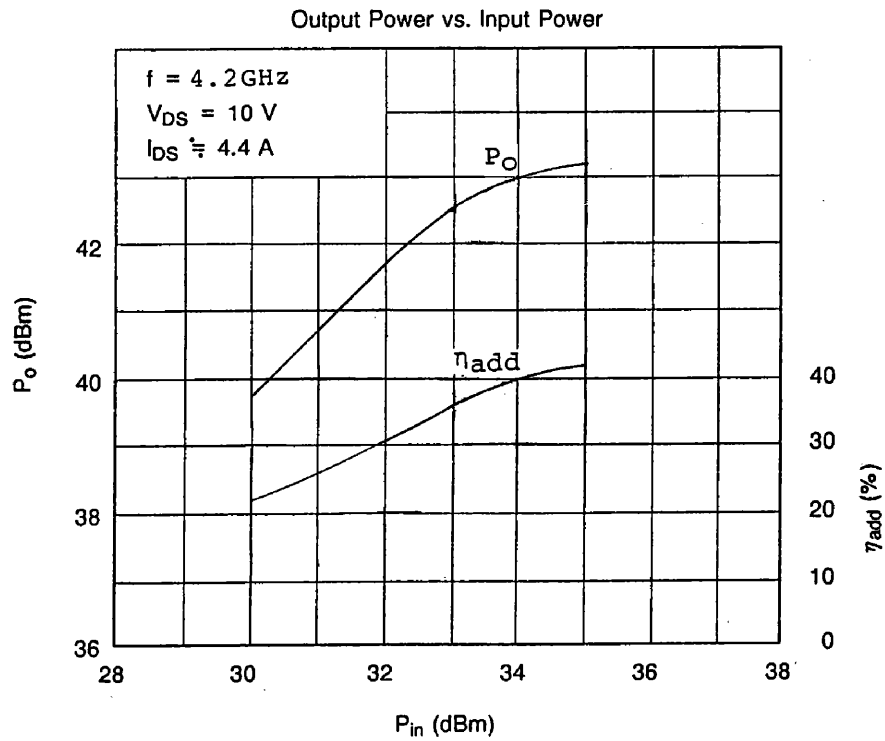
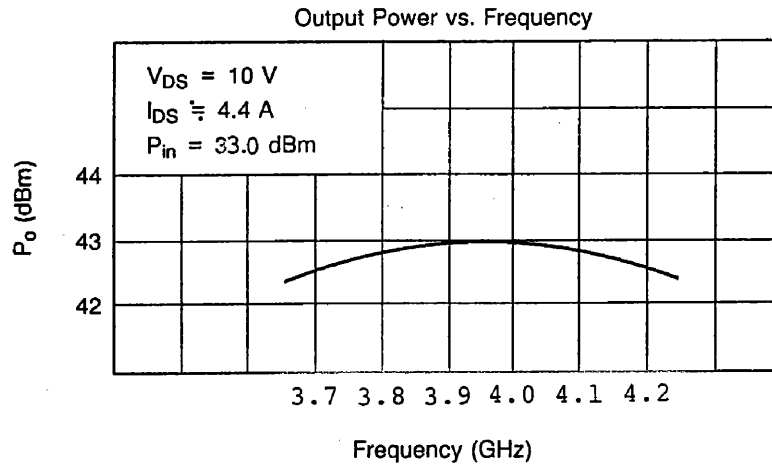
PACKAGE OUTLINE (2-16G1B)



HANDLING PRECAUTIONS FOR PACKAGED TYPE

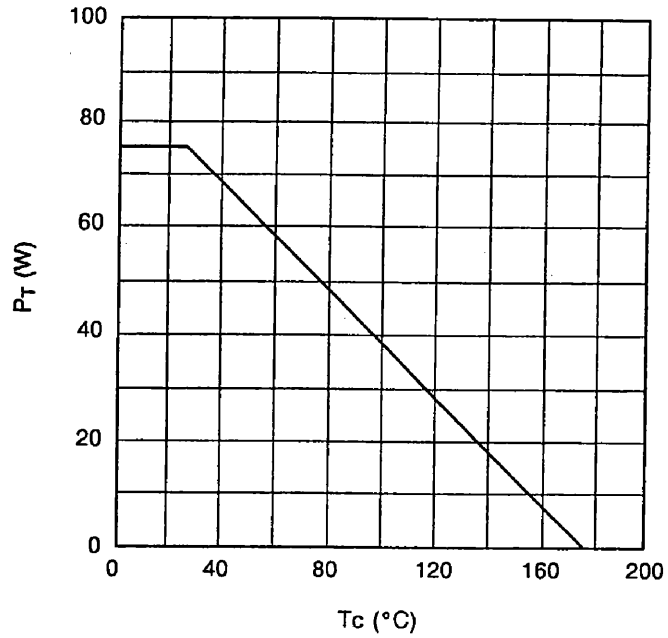
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

RF PERFORMANCES



TIM3742-16SL

POWER DISSIPATION VS. CASE TEMPERATURE



IM₃ VS. OUTPUT POWER CHARACTERISTICS

