

FEATURES :

- LOW INTERMODULATION DISTORTION
 $IM_3 = -45$ 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 ($T_a = 25^\circ\text{C}$)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Output Power at 1 dB Compression Point	P_{1dB}	$V_{DS} = 10$ V $f = 3.7 \sim 4.2$ GHz	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}	$V_{DS} \times I_{DS} \times R_{th} (c-c)$	$^\circ\text{C}$	—	—	80

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Transconductance	g_m	$V_{DS} = 3$ 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	$^\circ\text{C/W}$	—	1.5	2.0

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

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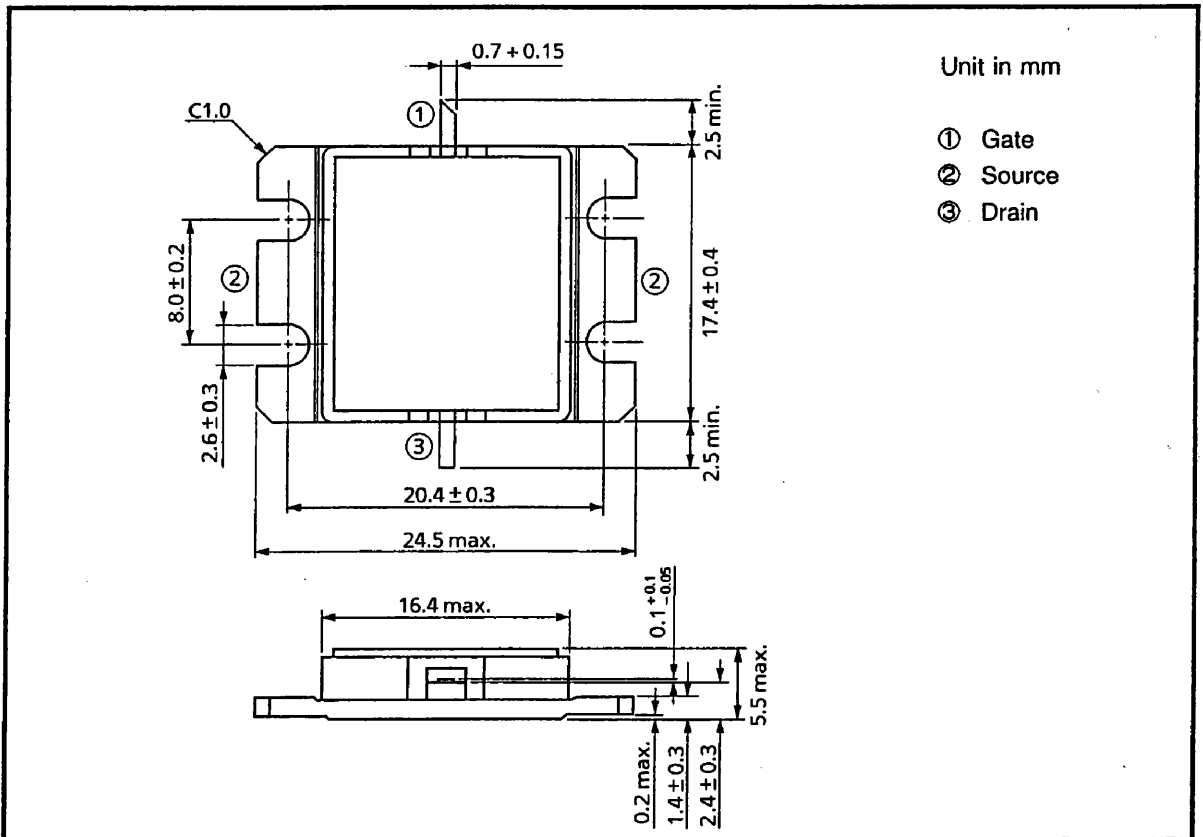


TIM3742-16SL

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

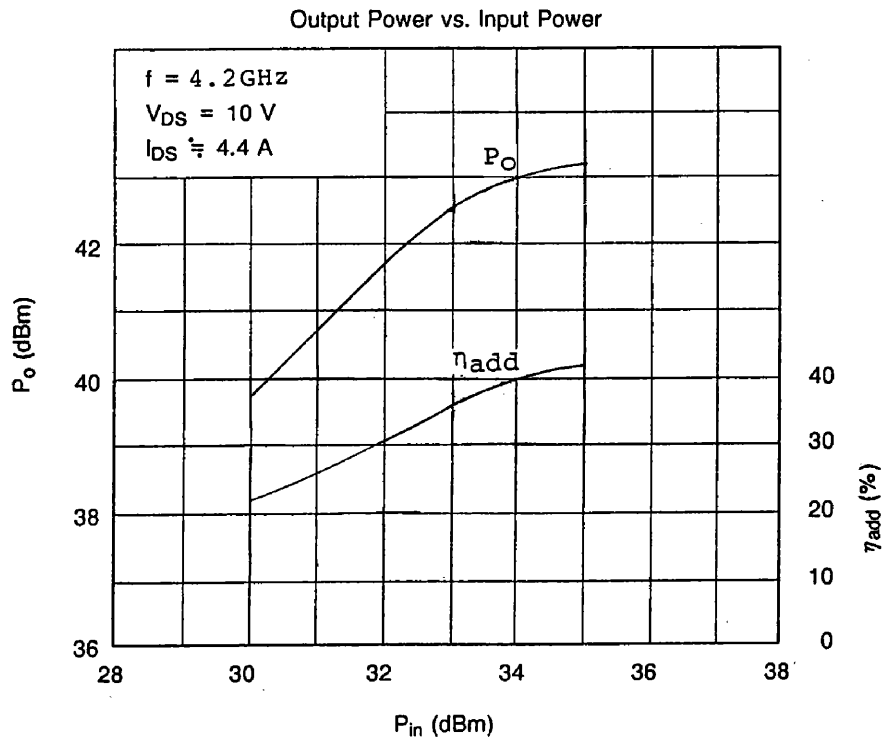
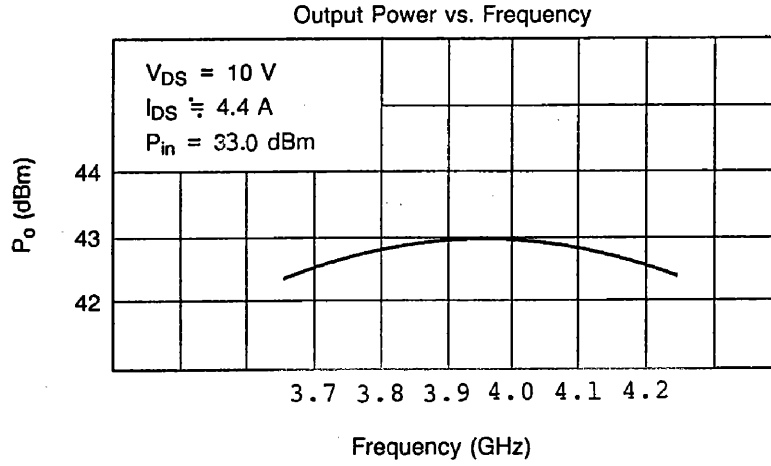
PACKAGE OUTLINE (2-16G1B)



HANDLING PRECAUTIONS FOR PACKAGED TYPE

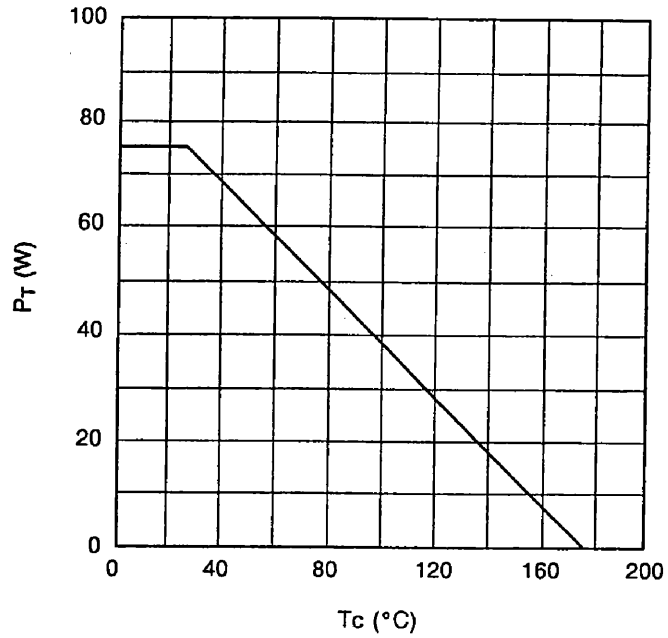
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

RF PERFORMANCES



TIM3742-16SL

POWER DISSIPATION VS. CASE TEMPERATURE



IM₃ VS. OUTPUT POWER CHARACTERISTICS

