

FEATURES :

■ LOW INTERMODULATION DISTORTION

$IM_3 = -45$ dBc at $P_o = 31.5$ dBm,

Single Carrier Level

■ HIGH POWER

$P_{1dB} = 42.5$ dBm at 5.9 GHz to 6.75 GHz

■ HIGH GAIN

$G_{1dB} = 8.0$ dB at 5.9 GHz to 6.75 GHz

■ 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 $f = 5.9 \sim 6.75$ GHz	dBm	41.5	42.5	—
Power Gain at 1 dB Compression Point	G_{1dB}		dB	8.0	—	—
Drain Current	I_{DS}		A	—	4.4	5.0
Gain Flatness	ΔG		dB	—	—	± 0.8
Power Added Efficiency	η_{add}		%	—	34	—
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	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	$^\circ\text{C/W}$	—	1.5	2.0

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

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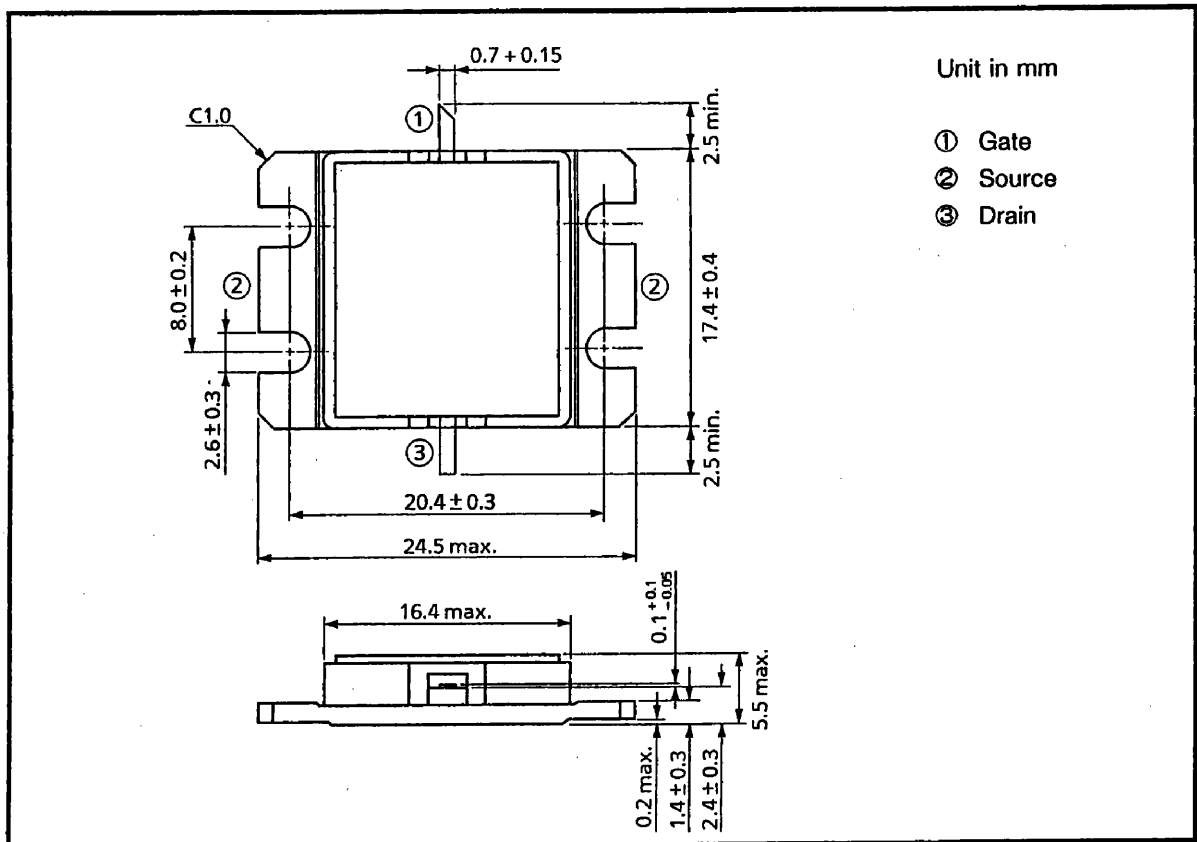


TIM5964-16SL-251

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

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 ($T_C = 25^\circ\text{C}$)	P_T	W	75
Channel Temperature	T_{ch}	$^\circ\text{C}$	175
Storage Temperature	T_{stg}	$^\circ\text{C}$	-65~175

PACKAGE OUTLINE (2-16G1B)

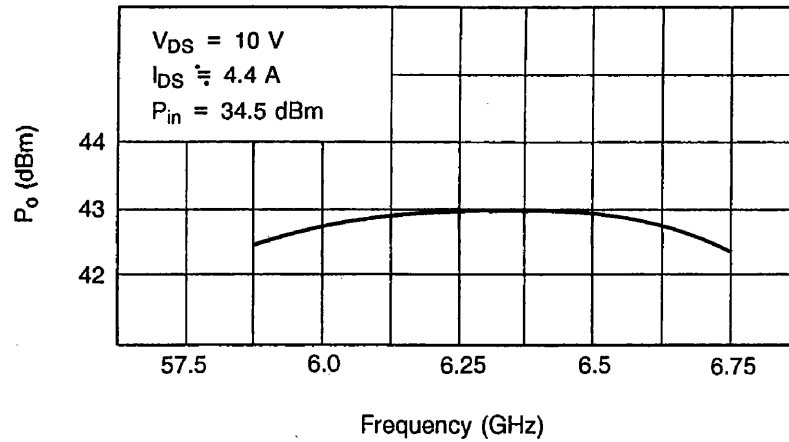


HANDLING PRECAUTIONS FOR PACKAGED TYPE

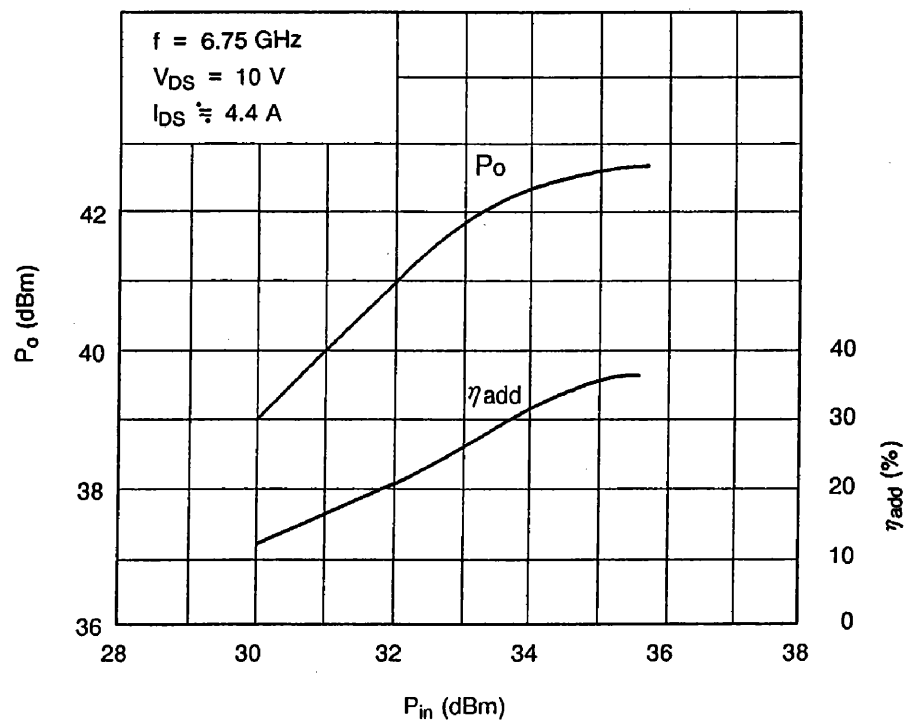
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C .

RF PERFORMANCES

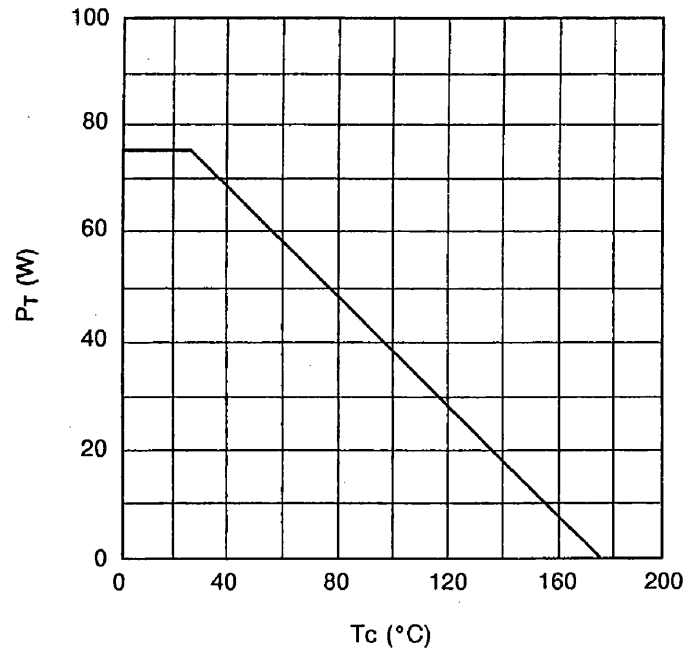
Output Power vs. Frequency



Output Power vs. Input Power



POWER DISSIPATION VS. CASE TEMPERATURE



IM₃ VS. OUTPUT POWER CHARACTERISTICS

