

FEATURES :

- **LOW INTERMODULATION DISTORTION**
 $IM_3 = -45 \text{ dBc}$ at $P_o = 31.5 \text{ dBm}$,
 Single Carrier Level
- **HIGH GAIN**
 $G_{1dB} = 8.0 \text{ dB}$ at 5.9 GHz to 6.4 GHz
- **HIGH POWER**
 $P_{1dB} = 42.5 \text{ dBm}$ at 5.9 GHz to 6.4 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	P_{1dB}	$V_{DS} = 10 \text{ V}$ $f = 5.9 \sim 6.4 \text{ GHz}$	dBm	41.5	42.5	—
Power Gain at 1 dB Compression Point	G_{1dB}		dB	7.0	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}	$V_{DS} \times I_{DS} \times R_{th} (c-c)$	°C	—	—	80

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	$V_{DS} = 3 \text{ V}$ $I_{DS} = 6.0 \text{ A}$	mS	—	3600	—
Pinch-off Voltage	V_{GSoff}	$V_{DS} = 3 \text{ V}$ $I_{DS} = 60 \text{ mA}$	V	-1	-2.5	-4.0
Saturated Drain Current	I_{DSS}	$V_{DS} = 3 \text{ V}$ $V_{GS} = 0 \text{ V}$	A	—	10.5	14.0
Gate-Source Breakdown Voltage	V_{GSO}	$I_{GS} = -200 \mu\text{A}$	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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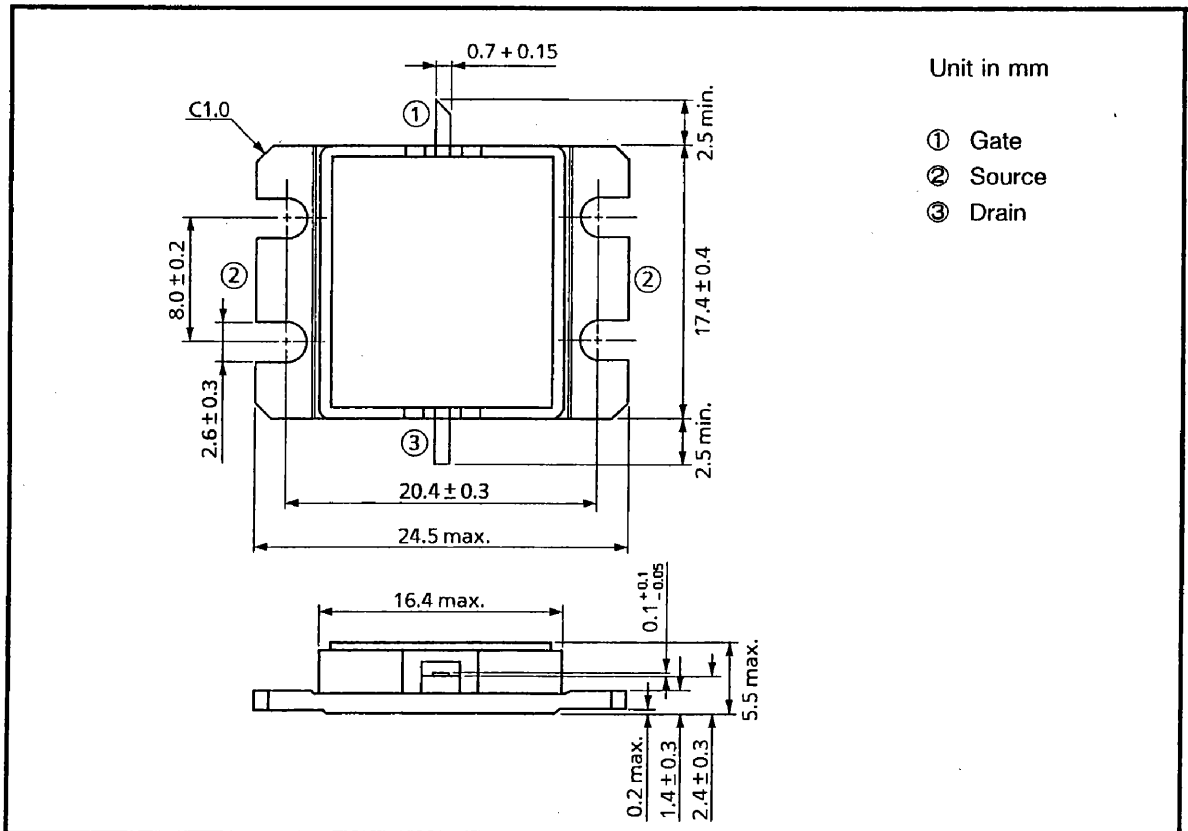


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ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

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)

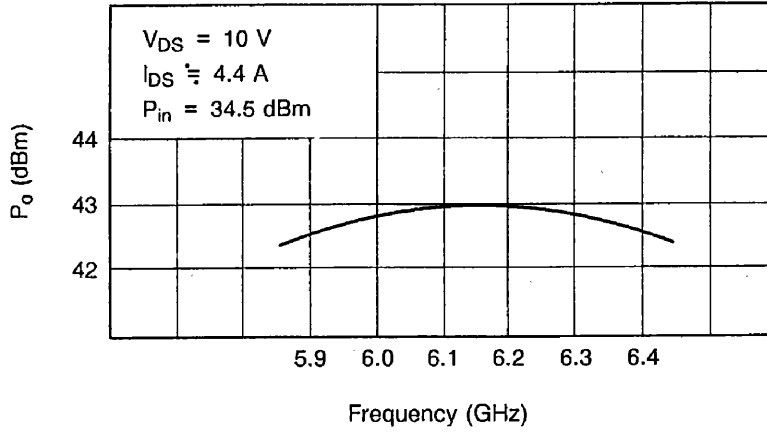


HANDLING PRECAUTIONS FOR PACKAGED TYPE

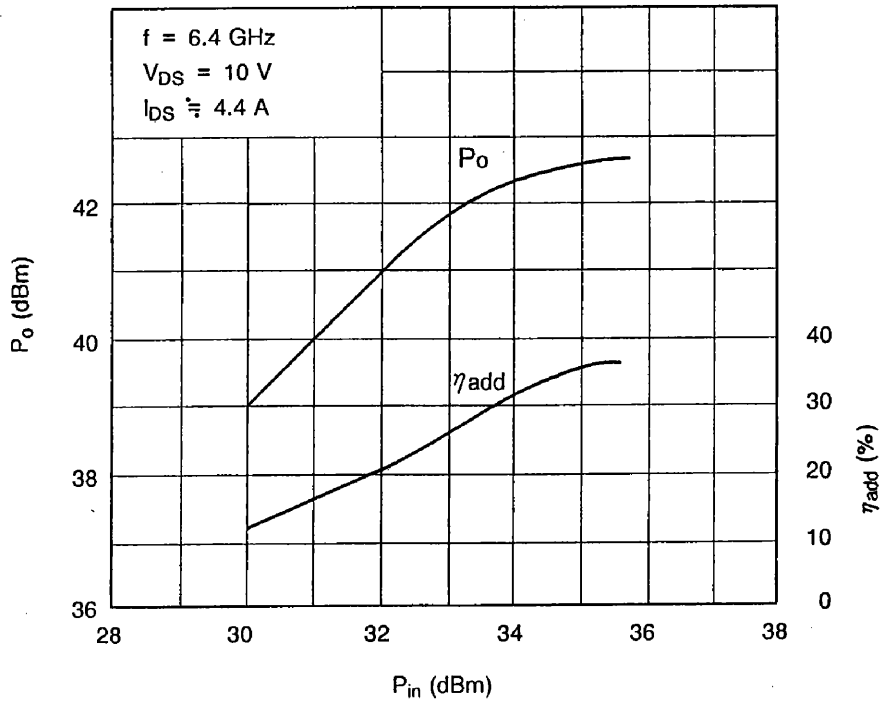
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

RF PERFORMANCES

Output Power vs. Frequency

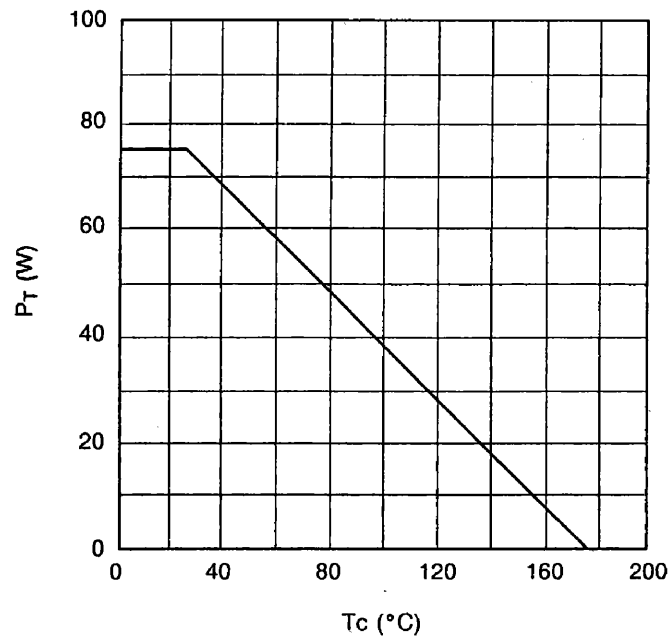


Output Power vs. Input Power

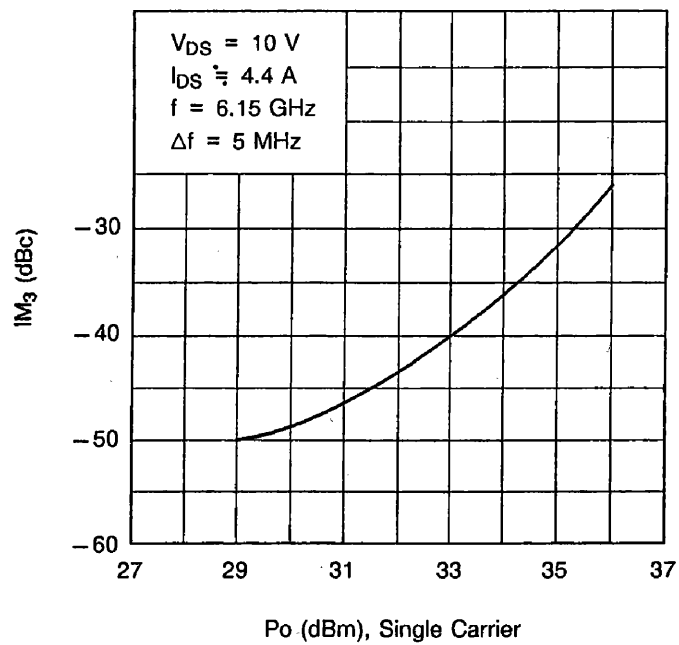


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POWER DISSIPATION VS. CASE TEMPERATURE



IM₃ VS. OUTPUT POWER CHARACTERISTICS

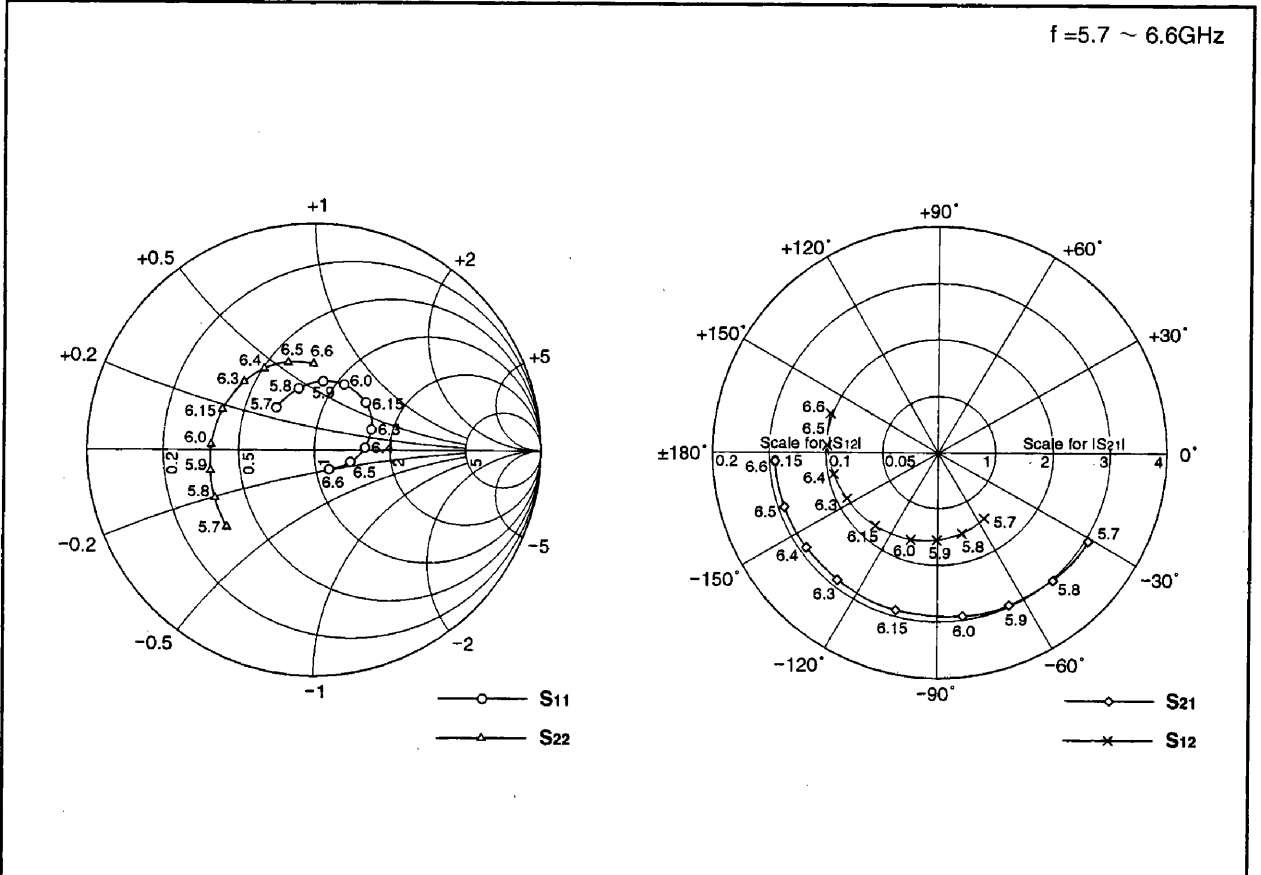


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TIM5964-16SL S-PARAMETERS (MAGN. and ANGLES)

V_{DS} = 10V , I_{DS} = 4.0A

f = 5.7 ~ 6.6GHz



FREQUENCY (GHz)	S ₁₁		S ₂₁		S ₁₂		S ₂₂	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5.70	0.252	131.6	3.056	-31.1	0.071	-55.6	0.515	-138.3
5.80	0.281	104.2	3.025	-48.5	0.075	-73.8	0.487	-153.9
5.90	0.306	83.0	2.974	-65.3	0.078	-90.8	0.467	-168.8
6.00	0.318	65.8	2.928	-81.4	0.081	-107.1	0.456	176.8
6.15	0.310	43.1	2.886	-104.9	0.086	-130.5	0.444	156.1
6.30	0.268	20.2	2.877	-128.3	0.091	-153.2	0.433	135.7
6.40	0.224	3.3	2.882	-144.1	0.095	-168.4	0.422	121.7
6.50	0.167	-17.8	2.893	-160.3	0.099	176.0	0.404	106.7
6.60	0.107	-52.2	2.898	-177.1	0.102	160.1	0.381	90.6

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