

FEATURES :

- LOW INTERMODULATION DISTORTION
IM₃ = -45 dBc at P_o = 25.5 dBm,
Single Carrier Level
- HIGH GAIN
G_{1dB} = 9.0 dB at 5.9 GHz to 6.4 GHz
- BROAD BAND INTERNALLY MATCHED
- HIGH POWER
P_{1dB} = 36.5 dBm at 5.9 GHz to 6.4 GHz
- HERMETICALLY SEALED PACKAGE

RF PERFORMANCE SPECIFICATIONS (T_a = 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Output Power at 1 dB Compression Point	P _{1dB}	V _{DS} = 10 V f = 5.9 ~ 6.4 GHz	dBm	35.5	36.5	—
Power Gain at 1 dB Compression Point	G _{1dB}		dB	8.0	9.0	—
Drain Current	I _{DS}		A	—	1.1	1.3
Gain Flatness	ΔG		dB	—	—	± 0.6
Power Added Efficiency	η _{add}		%	—	35	—
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 (T_a = 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	V _{DS} = 3 V I _{DS} = 1.5 A	mS	—	900	—
Pinch-off Voltage	V _{GSoff}	V _{DS} = 3 V I _{DS} = 15 mA	V	-1	-2.5	-4.0
Saturated Drain Current	I _{DSS}	V _{DS} = 3 V V _{GS} = 0 V	A	—	2.6	3.5
Gate-Source Breakdown Voltage	V _{GS0}	I _{GS} = -50 μA	V	-5	—	—
Thermal Resistance	R _{th} (c-c)	Channel to Case	°C/W	—	4.5	6.5

Note 1 : 2 tone Test Pout = 25.5 dBm Single Carrier Level.

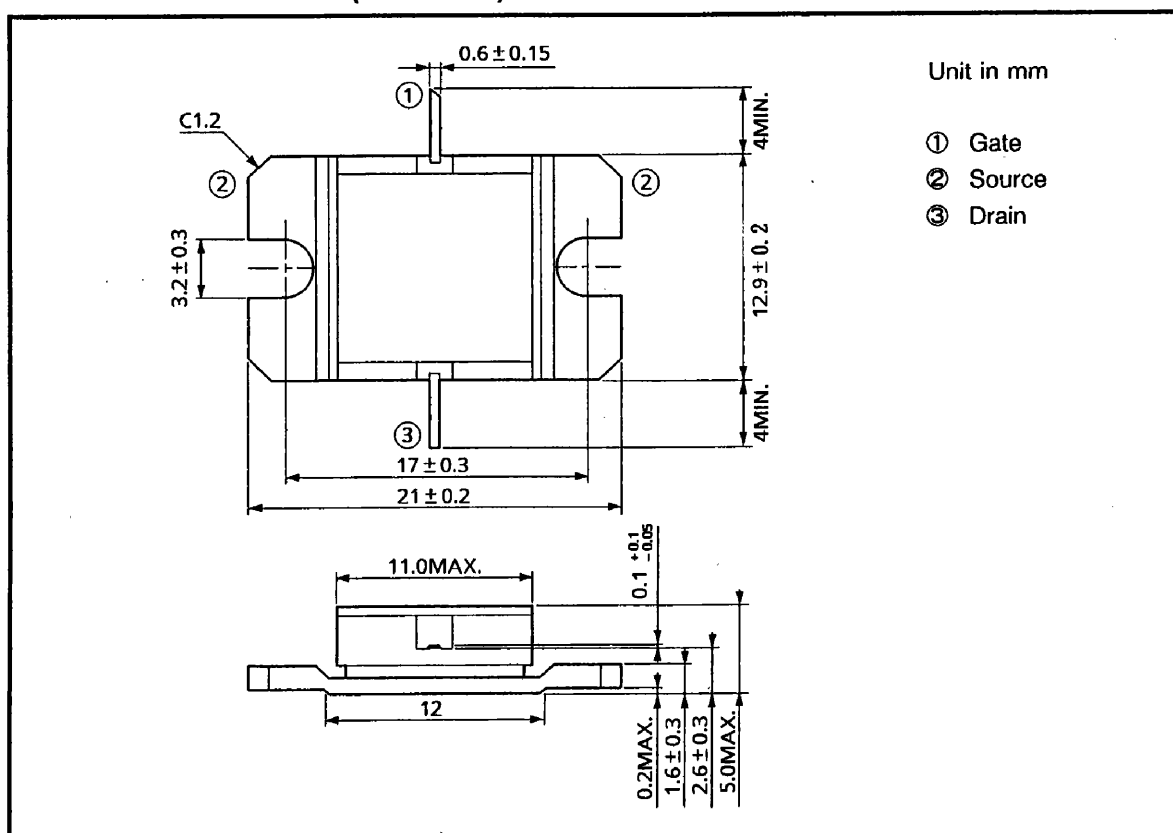
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ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	V_{DS}	V	15
Gate-Source Voltage	V_{GS}	V	-5
Drain Current	I_{DS}	A	3.5
Total Power Dissipation ($T_C = 25^\circ\text{C}$)	P_T	W	23
Channel Temperature	T_{ch}	$^\circ\text{C}$	175
Storage Temperature	T_{stg}	$^\circ\text{C}$	-65~175

PACKAGE OUTLINE (2-11D1B)

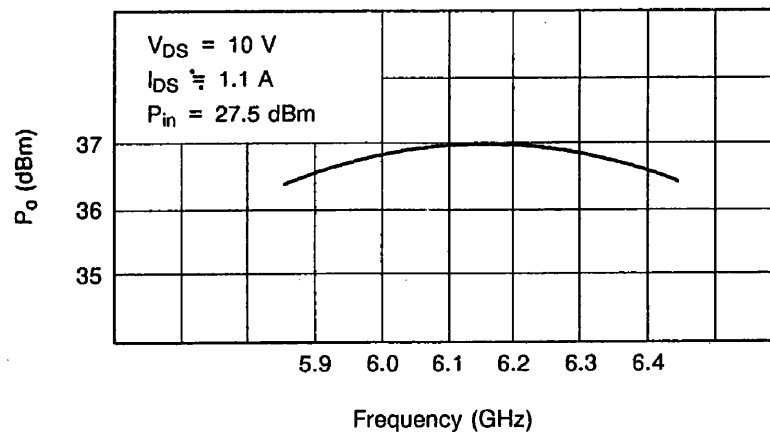


HANDLING PRECAUTIONS FOR PACKAGED TYPE

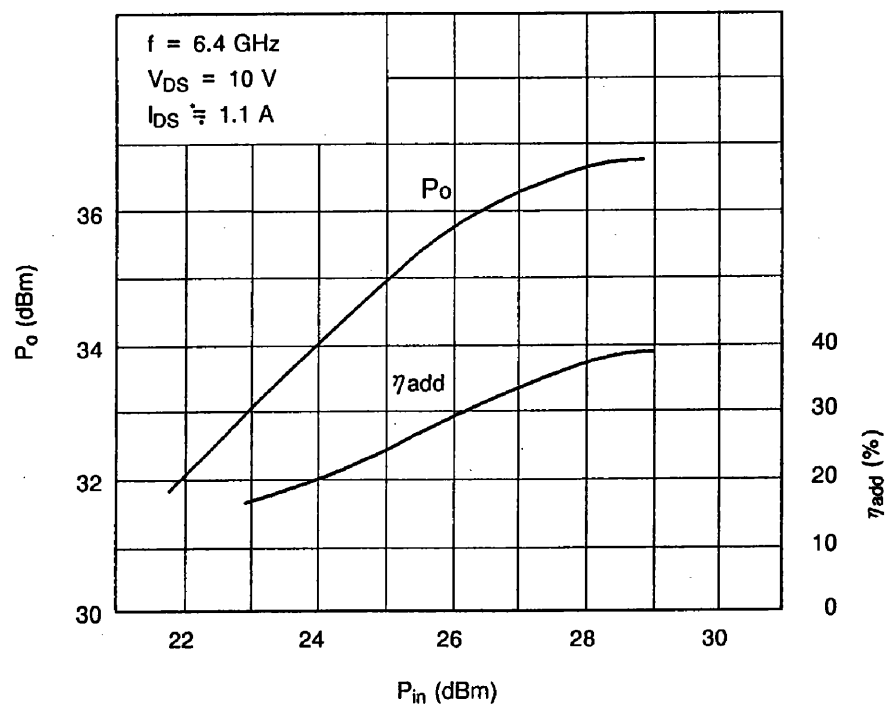
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C .

RF PERFORMANCES

Output Power vs. Frequency

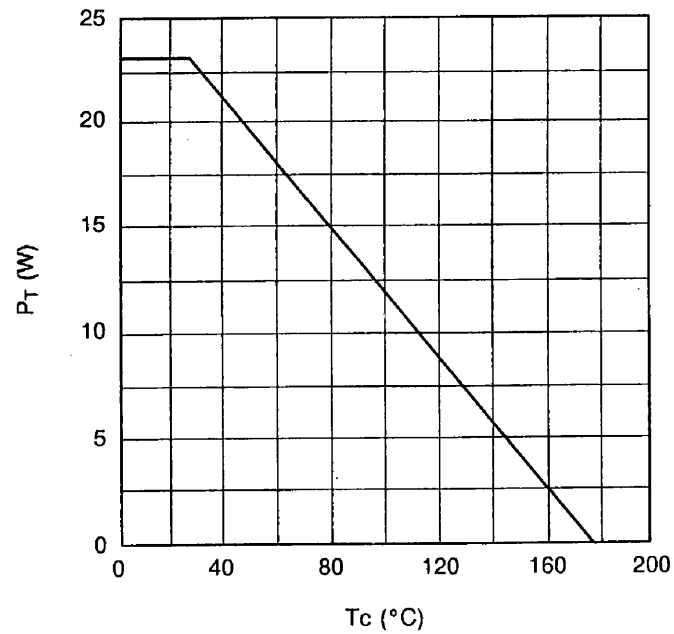


Output Power vs. Input Power

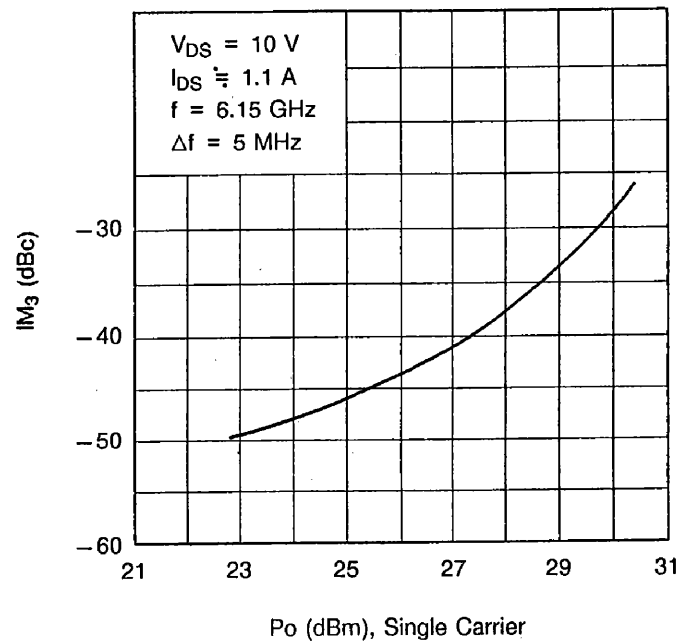


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POWER DISSIPATION VS. CASE TEMPERATURE



IM₃ VS. OUTPUT POWER CHARACTERISTICS

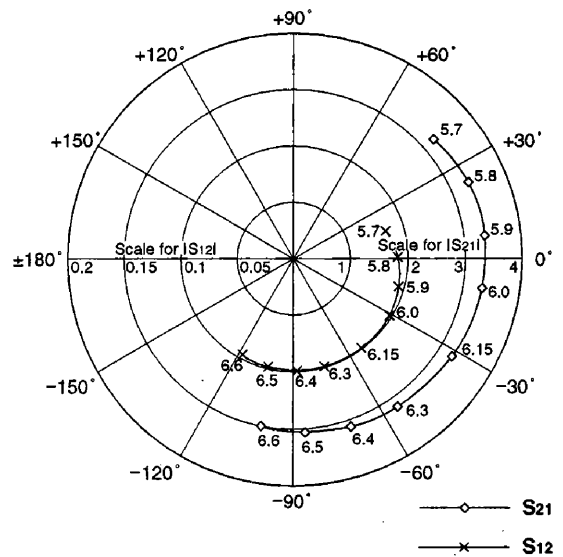
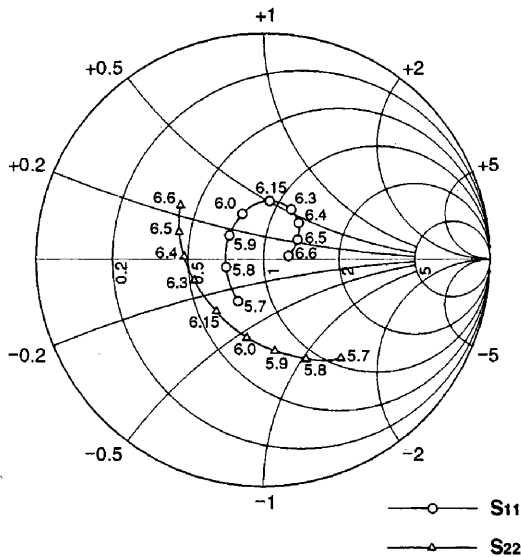


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TIM5964-4SL S-PARAMETERS (MAGN. and ANGLES)

$V_{DS} = 10V$, $I_{DS} = 1.0A$

$f = 5.7 \sim 6.6GHz$



FREQUENCY (GHz)	S_{11}		S_{21}		S_{12}		S_{22}	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5.70	0.217	-121	3.228	41	0.084	17	0.555	-52
5.80	0.169	-168	3.335	24	0.091	1	0.479	-67
5.90	0.183	145	3.359	7	0.095	-15	0.409	-83
6.00	0.221	115	3.335	-9	0.098	-31	0.355	-102
6.15	0.258	84	3.262	-32	0.099	-53	0.311	-132
6.30	0.251	61	3.177	-55	0.099	-74	0.319	-163
6.40	0.222	46	3.121	-71	0.099	-88	0.350	178
6.50	0.173	30	3.062	-86	0.098	-103	0.391	162
6.60	0.111	8	2.994	-101	0.096	-118	0.436	147