

FEATURES :

- LOW INTERMODULATION DISTORTION
IM₃ = -45 dBc at P_o = 35.5 dBm,
Single Carrier Level
- HIGH POWER
P_{1dB} = 46.5 dBm at 5.9 GHz to 6.4 GHz
- HIGH GAIN
G_{1dB} = 9.0 dB 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 V f = 5.9~6.4 GHz	dBm	46.0	46.5	-
Power Gain at 1 dB Compression Point	G _{1dB}		dB	8.0	9.0	-
Drain Current	I _{DS}		A	-	9.6	10.8
Gain Flatness	ΔG		dB	-	-	±0.8
Power Added Efficiency	η _{add}		%	-	41	-
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	-	-	100

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTICS	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	V _{DS} = 3 V I _{DS} = 11.0 A	mS	-	8000	-
Pinch-off Voltage	V _{GSoff}	V _{DS} = 3 V I _{DS} = 170 mA	V	-1.0	-2.5	-4.0
Saturated Drain Current	I _{DSS}	V _{DS} = 3 V V _{GS} = 0 V	A	-	24	31
Gate-Source Breakdown Voltage	V _{GS0}	I _{GS} = -500 μA	V	-5	-	-
Thermal Resistance	R _{th} (c-c)	Channel to Case	°C/W	-	0.8	1.2

Note 1 : 2 tone Test Pout = 35.5 dBm Single Carrier Level.

Recommended gate resistace (R_g) : R_g=R_{g1}(10 Ω)+R_{g2}(18 Ω)=28 Ω (MAX.)

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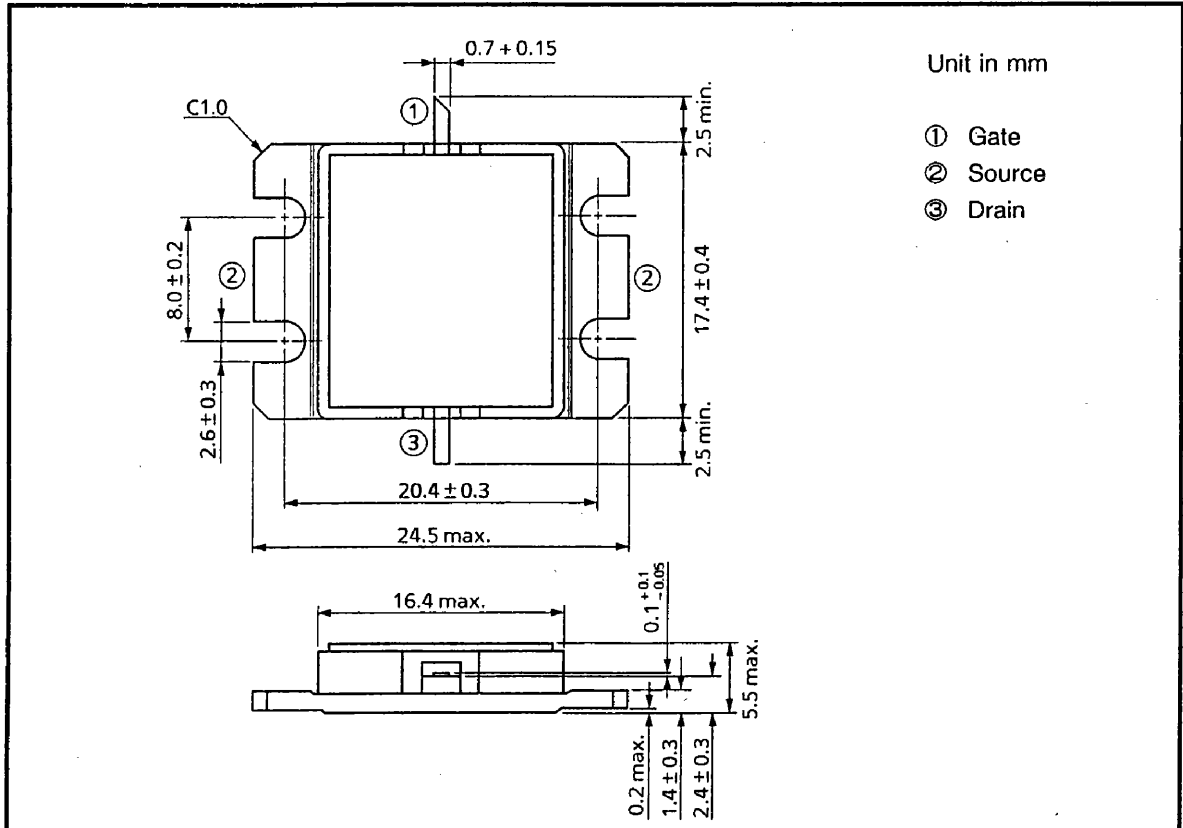


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ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	V _{DS}	V	15
Gate-Source Voltage	V _{GS}	V	-5
Drain Current	I _{DS}	A	31
Total Power Dissipation (T _C = 25°C)	P _T	W	125
Channel Temperature	T _{ch}	°C	175
Storage Temperature	T _{stg}	°C	-65~175

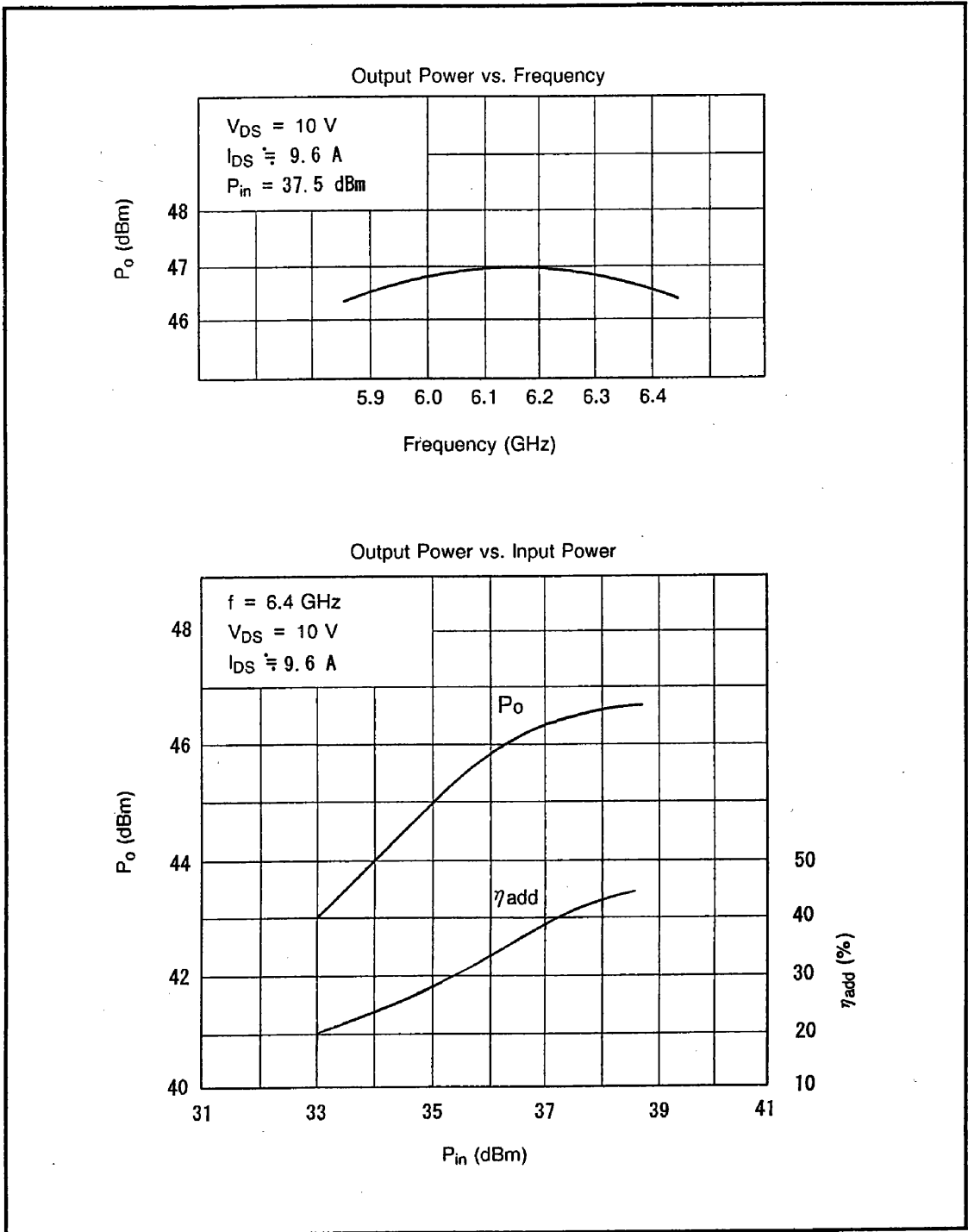
PACKAGE OUTLINE (2-16G1B)



HANDLING PRECAUTIONS FOR PACKAGED TYPE

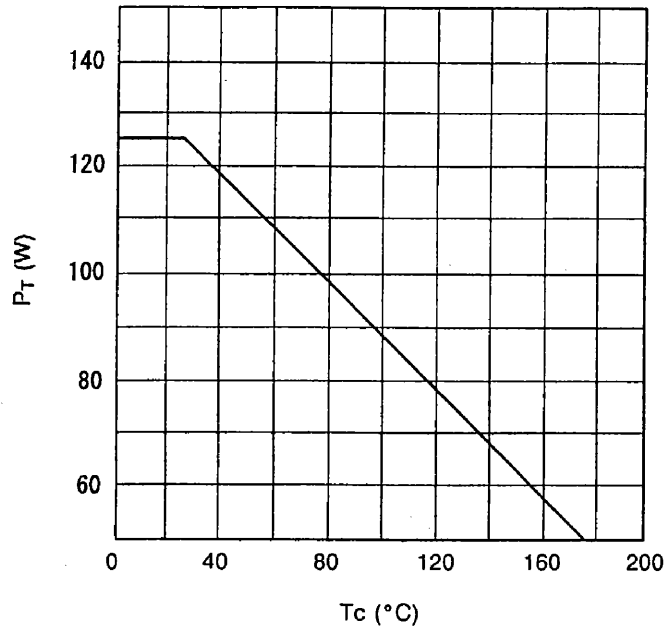
Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C.

RF PERFORMANCES

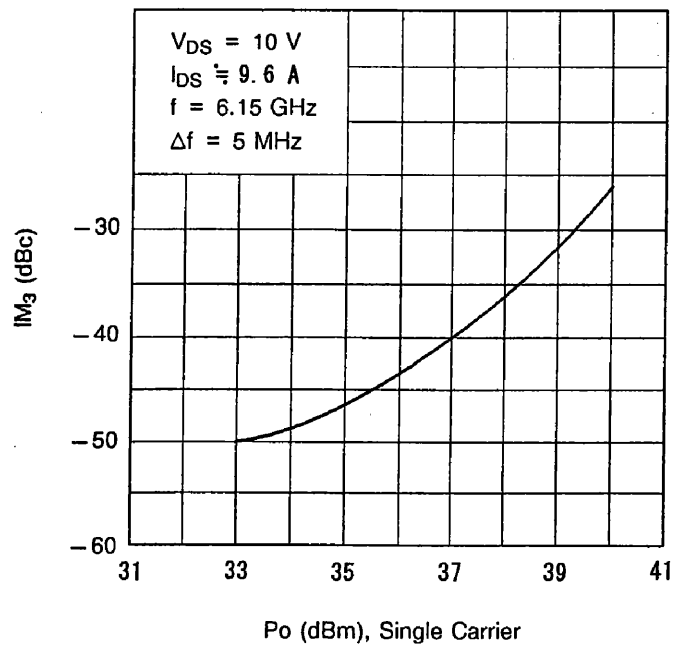


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POWER DISSIPATION VS. CASE TEMPERATURE



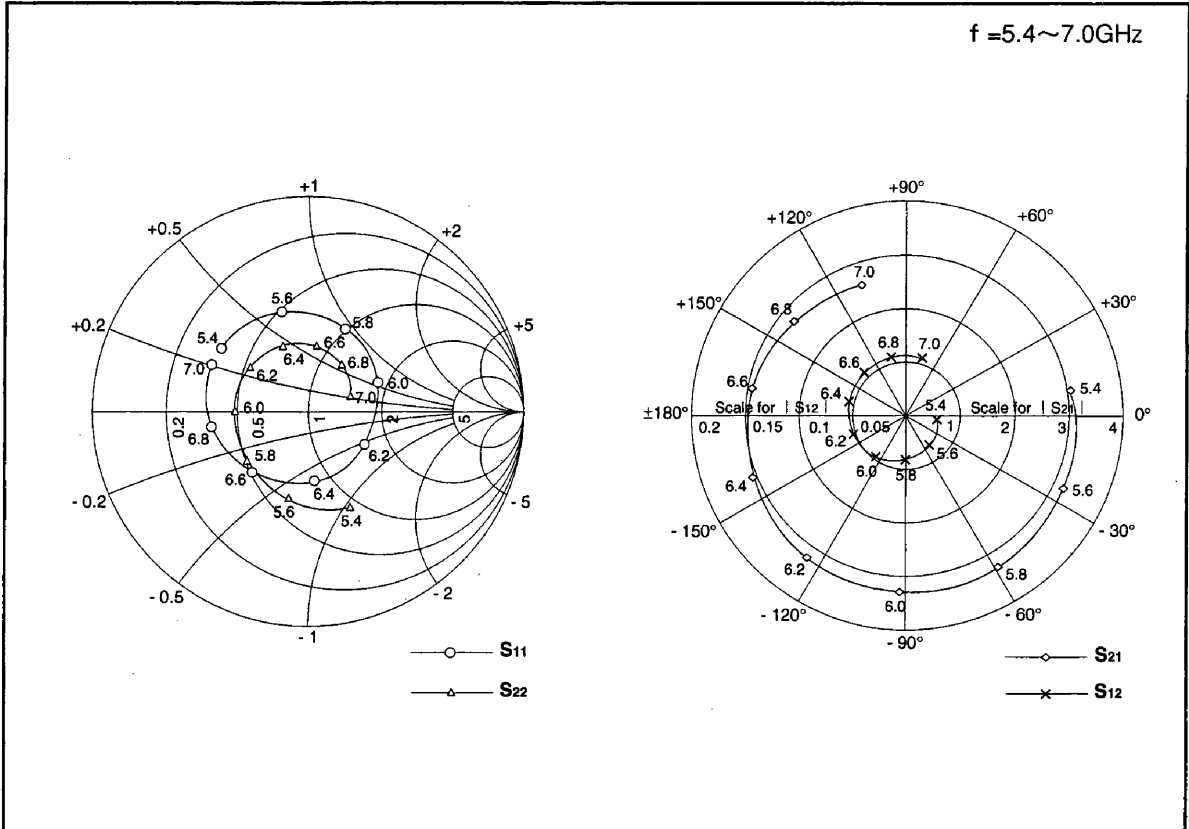
IM₃ VS. OUTPUT POWER CHARACTERISTICS



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TIM5964-45SL S-PARAMETERS (MAGN.and ANGLES)

$V_{DS} = 10V, I_{DS} = 9.6A$



FREQUENCY (GHz)	S_{11}		S_{21}		S_{12}		S_{22}	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5.4	0.50	144	3.06	9	0.029	-7	0.48	-66
5.6	0.48	105	3.20	-25	0.035	-51	0.41	-103
5.8	0.42	66	3.28	-59	0.041	-90	0.36	-142
6.0	0.35	23	3.29	-92	0.047	-126	0.34	179
6.2	0.30	-30	3.22	-125	0.052	-161	0.34	142
6.4	0.32	-85	3.08	-158	0.055	166	0.33	111
6.6	0.38	-133	2.91	170	0.056	134	0.31	83
6.8	0.45	-171	2.74	140	0.056	104	0.27	55
7.0	0.50	154	2.58	109	0.056	74	0.21	22