

< C band internally matched power GaAs FET >

MGFC41V5964

5.9 – 6.4 GHz BAND / 12W

DESCRIPTION

The MGFC41V5964 is an internally impedance-matched GaAs power FET especially designed for use in 5.9 – 6.4 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

FEATURES

Class A operation

Internally matched to 50(ohm) system

- High output power
P1dB=12W (TYP.) @f=5.9 – 6.4GHz
- High power gain
GLP=9.5dB (TYP.) @f=5.9 – 6.4GHz
- High power added efficiency
P.A.E.=33% (TYP.) @f=5.9 – 6.4GHz
- Low distortion [item -51]
IM3=-45dBc (TYP.) @Po=30dBm S.C.L.

APPLICATION

- item 01 : 5.9 – 6.4 GHz band power amplifier

QUALITY

- IG

RECOMMENDED BIAS CONDITIONS

- VDS=10V • ID=3.4A • RG=50ohm Refer to Bias Procedure

Absolute maximum ratings (Ta=25°C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain breakdown voltage	-15	V
VGSO	Gate to source breakdown voltage	-15	V
ID	Drain current	12	A
IGR	Reverse gate current	-30	mA
IGF	Forward gate current	63	mA
PT *1	Total power dissipation	53.6	W
Tch	Cannel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C

*1 : Tc=25°C

Electrical characteristics (Ta=25°C)

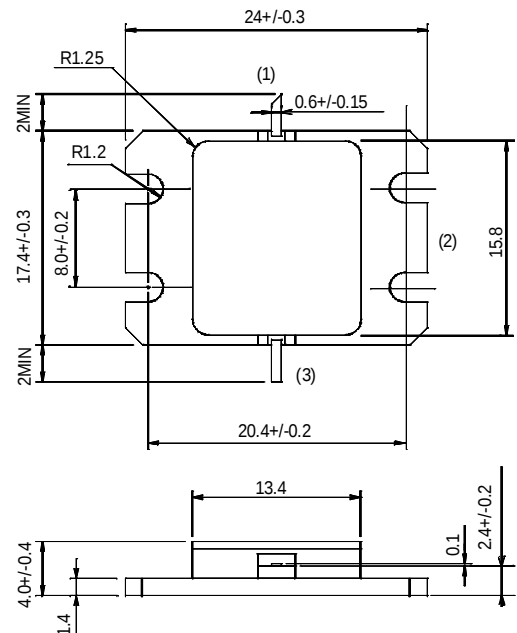
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V, VGS=0V	-	-	12	A
gm	Transconductance	VDS=3V, ID=3.0A	-	3	-	S
VGS(off)	Gate to source cut-off voltage	VDS=3V, ID=30mA	-	-	-5	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=3.4A	40	41	-	dBm
GLP	Linear Power Gain	f=5.9 – 6.4GHz	8.5	9.5	-	dB
P.A.E.	Power added efficiency		-	33	-	%
IM3*2	3rd order IM distortion		-42	-45	-	dBc
Rth(ch-c) *3	Thermal resistance	delta Vf method	-	-	2.8	°C/W

*2 :Item-51,2-tone test Po=30dBm Signal Carrier Level f=6.4GHz Δf=10MHz

*3 :Channel-case

OUTLINE DRAWING

Unit: millimeters (inches)

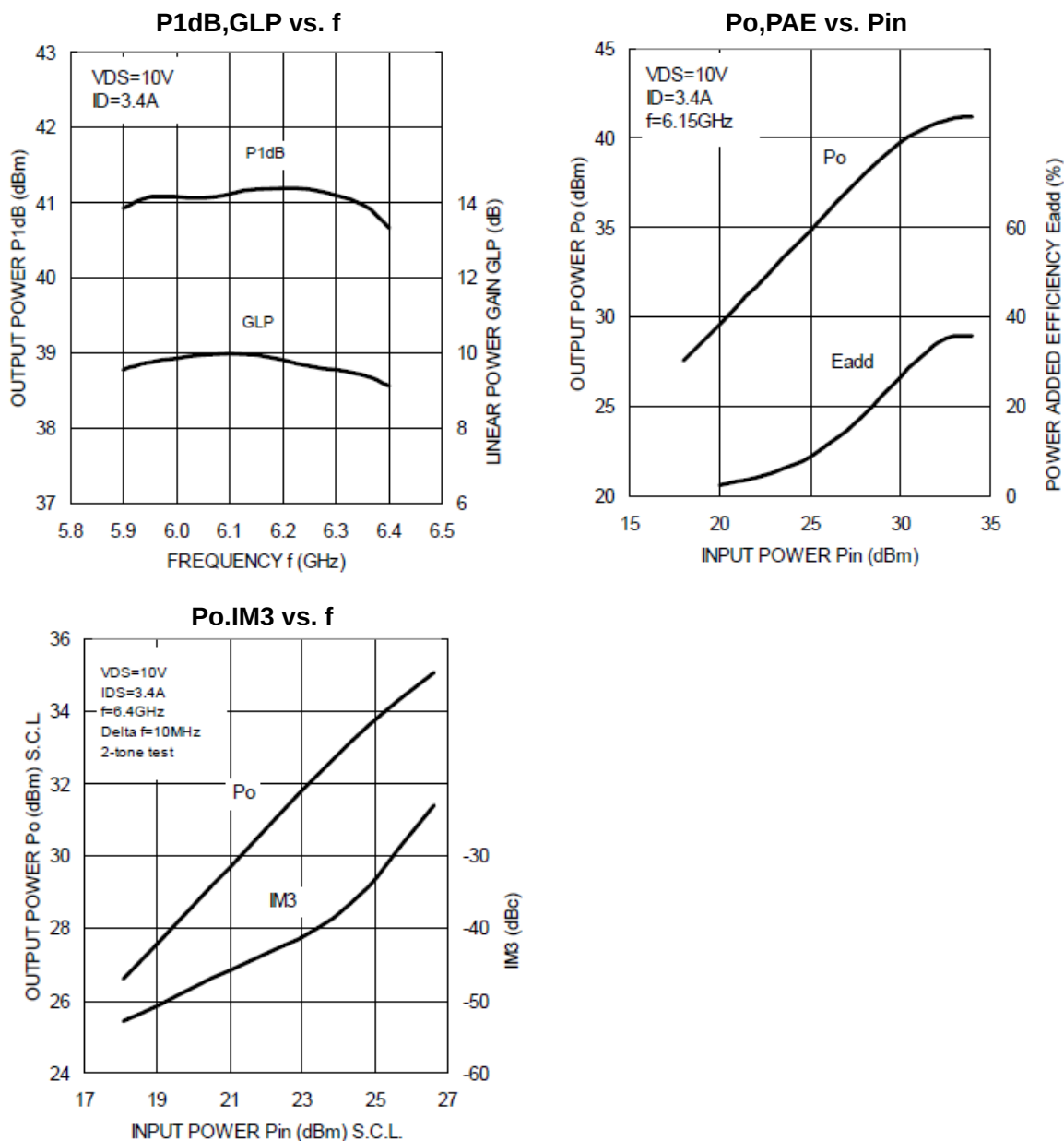


GF-18

- (1): GATE
(2): SOURCE (FLANGE)
(3): DRAIN

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MGFC41V5964 TYPICAL CHARACTERISTICS(Ta=25deg.C)**MGFC41V5964 S-parameters**(Ta=25deg.C , VDS=10(V), IDS=3.4(A))

f (GHz)	S Parameters(Typ.)							
	S11		S21		S12		S22	
	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)
5.9	0.37	124	2.98	-81	0.051	-131	0.31	111
6.0	0.35	105	2.94	-96	0.053	-145	0.31	102
6.1	0.32	84	2.91	-112	0.058	-163	0.30	94
6.2	0.29	64	2.88	-128	0.060	-177	0.29	87
6.3	0.25	38	2.86	-144	0.064	167	0.26	82
6.4	0.23	8	2.83	-161	0.066	152	0.22	81

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