

# MGFC41V5964

## 5.9 - 6.4GHz BAND 12W INTERNALLY MATCHED GaAs FET

### 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

- Internally matched to 50ohm system
- High output power  
P1dB = 12W (TIP.) @ f=5.9 - 6.4 Hz
- High power gain  
GLP = 9.5 dB (TYP.) @ f=5.9 - 6.4 GHz
- High power added efficiency  
Eadd = 33 % (TYP.) @ f=5.9 - 6.4 GHz
- Low Distortion[Item-51]  
IM3=-45 dBc(TYP.)@Po=30dBm S.C.L.

### APPLICATION

5.9 - 6.4GHz band amplifiers

### QUALITY GRADE

IG

### RECOMMENDED BIAS CONDITIONS

- VDS = 10V
- ID = 3.4 A
- Rg = 50(ohm) Refer to Bias Procedure

### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Ratings	Unit
V <sub>GDO</sub>	Gate to drain voltage	-15	V
V <sub>GSO</sub>	Gate to source voltage	-15	V
I <sub>D</sub>	Drain current	12	A
I <sub>GR</sub>	Reverse gate current	-30	mA
I <sub>GF</sub>	Forward gate current	63	mA
P <sub>T</sub>	Total power dissipation *1	53.6	W
T <sub>ch</sub>	Channel temperature	175	DegreesC
T <sub>stg</sub>	Storage temperature	-65 to +175	DegreesC

\*1 : Tc=25 DegreesC

### ABSOLUTE MAXIMUM RATINGS

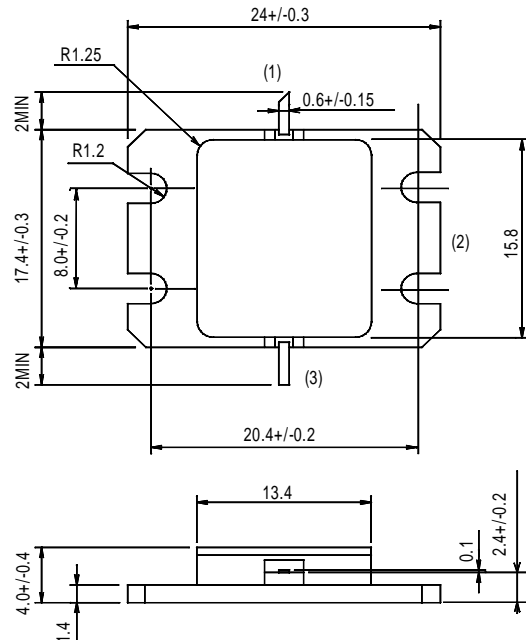
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
IDSS	Saturated drain current	VDS = 3V , VGS = 0V	-	-	12	A
gm	Transconductance	VDS = 3V , ID = 3.0A	-	3	-	S
VGS(off)	Gate to source cut-off voltage	VDS = 3V , ID = 30mA	-	-	-5	V
P1dB	Output power at 1dB gain compression	VDS = 10V , ID = 3.4A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

\*1 : Channel to case

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

### OUTLINE DRAWING

Unit: millimeters (inches)



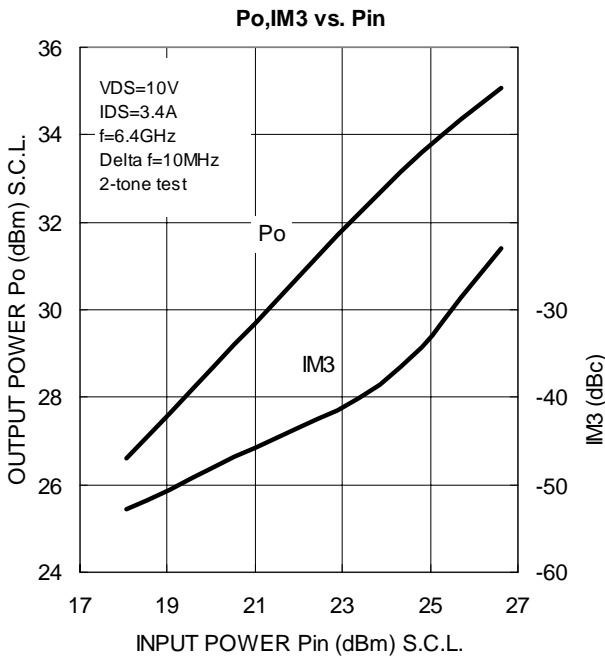
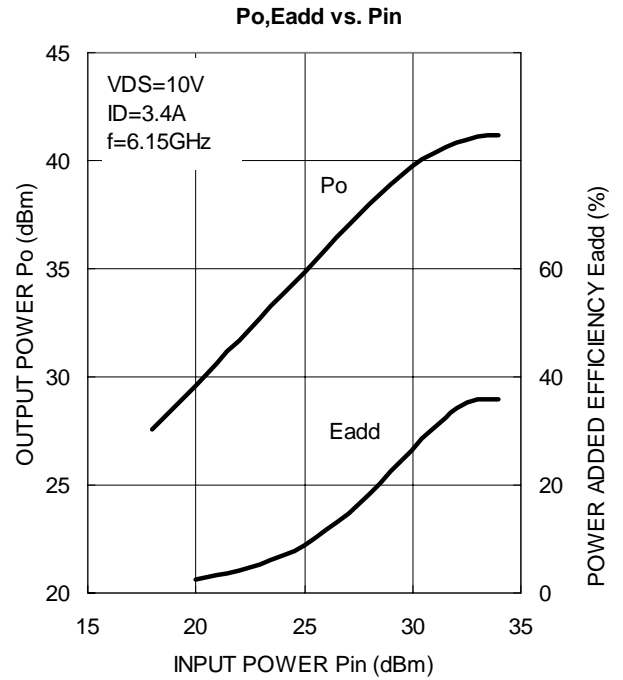
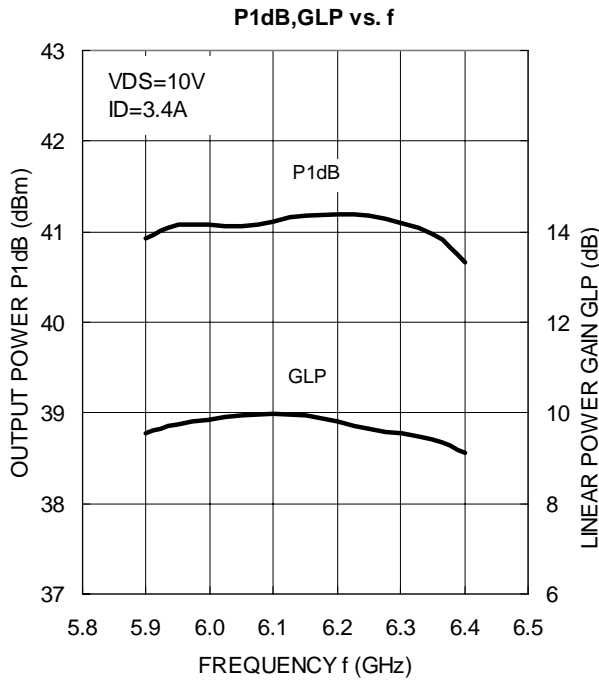
GF-18

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

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### TYPICAL CHARACTERISTICS (Ta=25 DegreesC)



S P

A)

f (GHz)	S Parameters (TYP.)							
	S <sub>11</sub>		S <sub>21</sub>		S <sub>12</sub>		S <sub>22</sub>	
	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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