MGFC44V6472

6.4~7.2GHz BAND 24W INTERNALLY MATCHED GaAs FET

DESCRIPTION

The MGFC44V6472 is an internally impedance-matched GaAs power FET especially designed for use in 6.4 ~ 7.2 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

FEATURES

- Class A operation
- Internally matched to 50Ω system
- High output power
  P_{1dB} =24W (TYP) @ 6.4 ~ 7.2 GHz
- High power gain
  G_{LP} = 8 dB (TYP) @ 6.4 ~ 7.2 GHz
- High power added efficiency
  η_{add} = 31% (TYP) @ 6.4 ~ 7.2 GHz
- Hermetically sealed metal-ceramic package
- Low distortion [Item: -51]
  IM_3 = −42dBc(MIN) @ Po=33.5(dBm) S.C.L.

APPLICATION

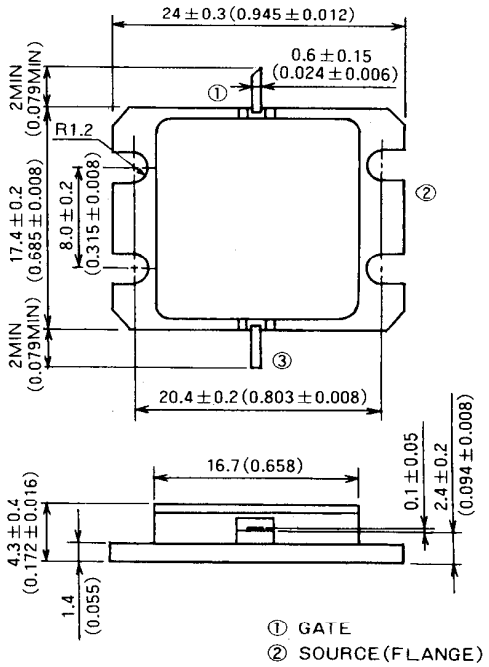
Item -01: 6.4 ~ 7.2GHz band power amplifier
Item -51: Digital radio communication

QUALITY GRADE

- IG

OUTLINE DRAWING

Unit: millimeters (inches)



GF-38

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Symbol	Parameter	Ratings	Unit
V_{GDO}	Gate to drain voltage	−15	V
V_{GSO}	Gate to source voltage	−15	V
I_D	Drain current	20	A
I_{GR}	Reverse gate current	−60	mA
I_{GF}	Forward gate current	126	mA
P_T	Total power dissipation *1	93	W
Tch	Channel temperature	175	°C
Tstg	Storage temperature	−65 ~ +175	°C

*1: T_C = 25°C

RECOMMENDED BIAS CONDITIONS

- V_{DS}=10V
- I_D=6.4A
- Rg=25Ω
- Refer to Bias Procedure

ELECTRICAL CHARACTERISTICS (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
I_{DSS}	Saturated drain current	V_{DS}=3V, V_{GS}=0V	—	18	—	A
g_m	Transconductance	V_{DS}=3V, I_D=6.4A	—	6.5	—	S
$V_{GS(off)}$	Gate to source cut-off voltage	V_{DS}=3V, I_D=120mA	−2	—	−5	V
P_{1dB}	Output power at 1dB gain compression	V_{DS}=10V, I_D=6.4A, f=6.4~7.2GHz	43	44	—	dBm
G_{LP}	Linear power gain		7	8	—	dB
η_{add}	Power added efficiency		—	31	—	%
IM_3	3rd order IM distortion *1		−42	—	—	dBc
$R_{th(ch-c)}$	Thermal resistance *2	ΔV_f method	—	—	1.6	°C/W

*1: Item-51, 2-tone test P_o =33.5dBm Single Carrier Level f = 7.2 GHz Δf = 10 MHz. *2: Channel to case

MITSUBISHI ELECTRIC

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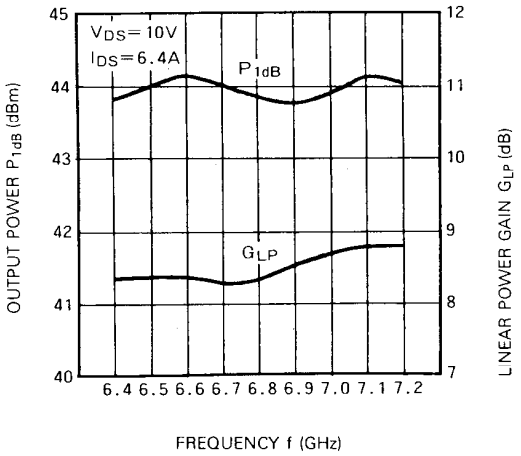
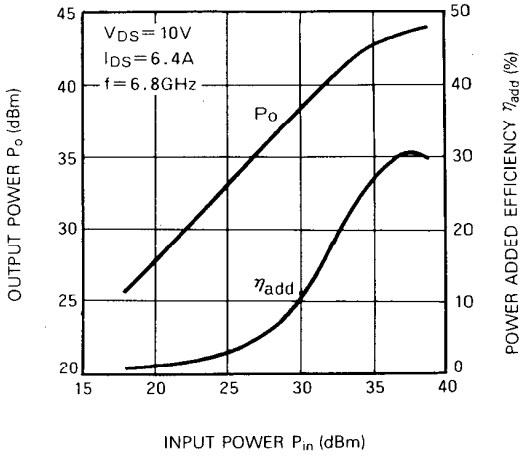
TYPICAL CHARACTERISTICS (Ta=25℃)

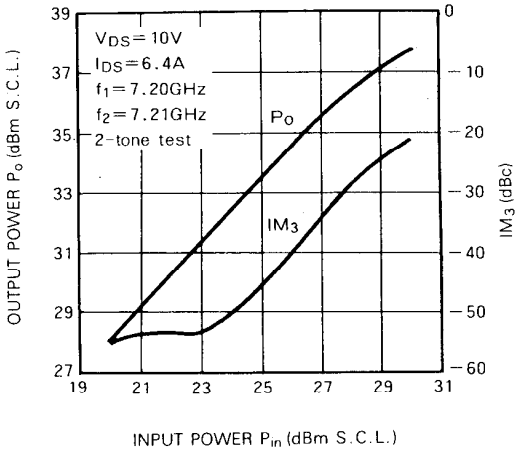
P_{1dB}, G_{LP} vs. f



P_o, η_{add} vs. P_{in}



P_o, IM_3 vs. P_{in}



S PARAMETERS (Ta=25°C, V_{DS}=10V, I_{DS}=6.4A)

f (GHz)	S Parameter (TYP.)							
	S_{11}		S_{21}		S_{12}		S_{22}	
	Magn.	Angle (deg.)	Magn.	Angle (deg.)	Magn.	Angle (deg.)	Magn.	Angle (deg.)
6.4	0.55	81	2.46	−124	0.039	−168	0.33	67
6.5	0.51	62	2.52	−141	0.042	173	0.35	71
6.6	0.46	43	2.49	−157	0.051	157	0.32	63
6.7	0.41	25	2.58	−174	0.054	138	0.32	51
6.8	0.37	3	2.60	169	0.062	126	0.31	29
6.9	0.33	−16	2.62	152	0.065	105	0.26	30
7.0	0.28	−37	2.64	136	0.071	91	0.22	16
7.1	0.26	−55	2.68	125	0.071	84	0.19	8
7.2	0.19	−91	2.65	107	0.076	65	0.13	0

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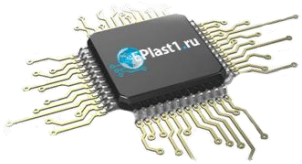
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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