

DESCRIPTION

The MGFC45V6472A 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 50(ohm) system
 High output power
 $P_{1dB} = 32W$ (TYP.) @ $f=6.4-7.2$ GHz
 High power gain
 $GLP = 8$ dB (TYP.) @ $f=6.4-7.2$ GHz
 High power added efficiency
 $PAE = 28\%$ (TYP.) @ $f=6.4-7.2$ GHz
 Low distortion [item -51]
 $IM3=-45dBc$ (TYP.) @ $Po=34.5dBm$ S.C.L.

APPLICATION

item 01 : 6.4-7.2 GHz band power amplifier
 item 51 : 6.4-7.2 GHz band digital radio communication

QUALITY GRADE

IG

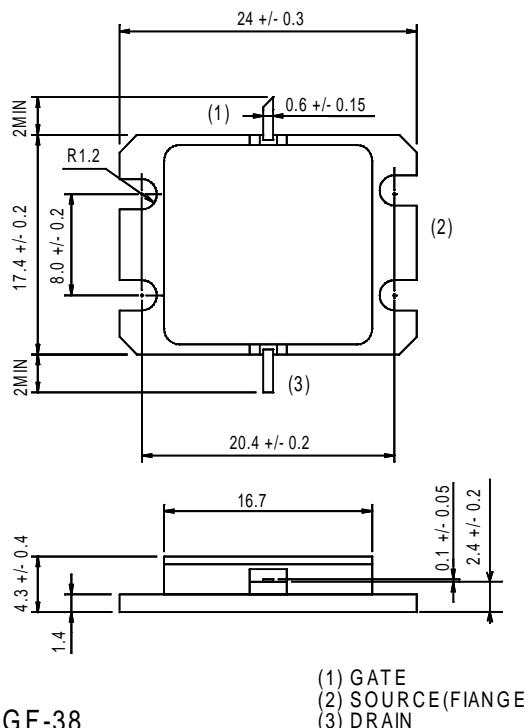
RECOMMENDED BIAS CONDITIONS

$VDS = 10$ (V)
 $ID = 8.0$ (A)
 $RG=25$ (ohm)

ABSOLUTE MAXIMUM RATINGS

(Ta=25 deg.C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain voltage	-15	V
VGSO	Gate to source voltage	-15	V
ID	Drain current	25	A
IGR	Reverse gate current	-80	mA
IGF	Forward gate current	168	mA
PT	Total power dissipation	150	W
Tch	Channel temperature	175	deg.C
Tstg	Storage temperature	-65 / +175	deg.C

*1 : $Tc=25$ deg.C**OUTLINE DRAWING Unit:millimeters (inches)**

GF-38

(1) GATE
 (2) SOURCE(FIANGE)
 (3) DRAIN

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 Mitsubishi Electric Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage. Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (1)placement of substitutive, auxiliary circuits, (2)use of non-flammable material or (3)prevention against any malfunction or mishap.

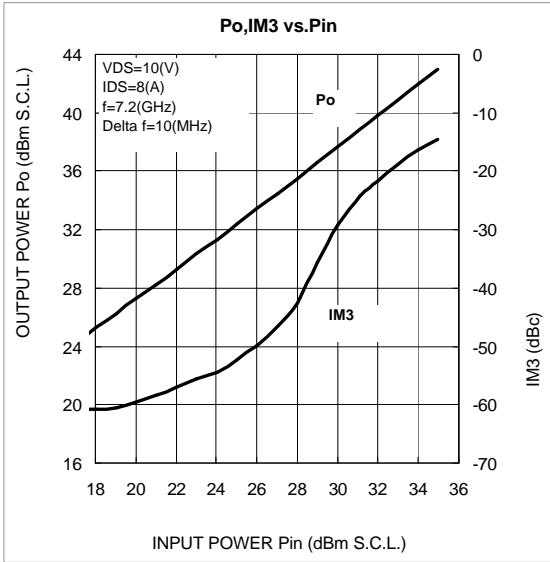
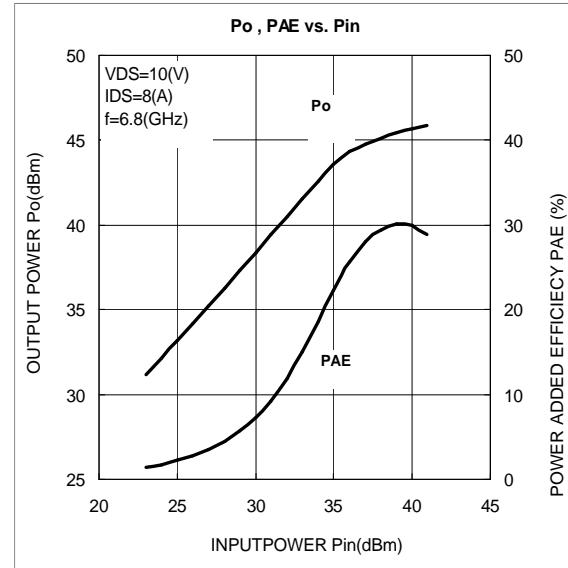
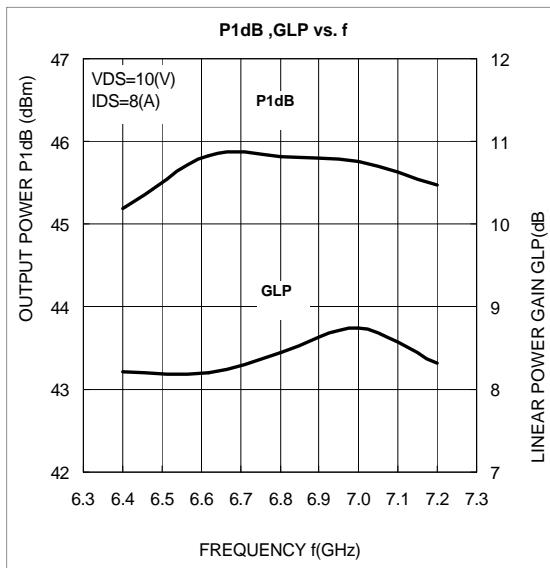
ELECTRICAL CHARACTERISTICS

(Ta=25 deg.C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	$VDS=3V$, $VGS=0V$	-	24	-	A
Gm	Transconductance	$VDS=3V$, $ID=6.4A$	-	8	-	V
VGS(off)	Gate to source cut-off voltage	$VDS = 3V$, $ID = 120mA$	-	-	-5	V
P1dB	Output power at 1dB gain compression	$VDS=10V$, $ID(RF off)=8.0A$, $f=6.4-7.2GHz$	44.5	45	-	dBm
GLP	Linear power gain		7	8	-	dB
PAE	Power added efficiency		-	35	-	%
IM3	3rd order IM distortion *1		-42	-45	-	dBc
Rth(ch-c)	Thermal resistance *2	Delta Vf method	-	-	1.0	deg.C/W

*1 : item -51,2 tone test, $Po=34.5dBm$ Single Carrier Level, $f=7.2GHz$, $\Delta f=10MHz$ *2 : Channel-case

TYPICAL CHARACTERISTICS (Ta=25deg.C)



S PARAMETERS (Ta=25deg.C, VDS=10V, ID=8.0A)

f (GHz)	S Parameters (TYP.)							
	S11		S21		S12		S22	
Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)	
6.4	0.66	100	2.39	-106	0.057	-171	0.32	74
6.5	0.61	84	2.43	-122	0.065	174	0.34	64
6.6	0.56	70	2.47	-138	0.071	160	0.35	52
6.7	0.50	57	2.54	-154	0.079	145	0.35	40
6.8	0.43	42	2.59	-170	0.088	131	0.34	27
6.9	0.35	27	2.66	173	0.095	116	0.31	12
7.0	0.24	12	2.73	155	0.101	100	0.27	-8
7.1	0.15	1	2.75	143	0.105	88	0.24	-27
7.2	0.01	-10	2.72	123	0.109	70	0.20	-61

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