MGFK25V4045

14.0-14.5GHz BAND 0.3W INTERNALLY MATCHED GaAs FET

DESCRIPTION

The MGFK25V4045 is an internally impedance matched GaAs power FET especially designed for use in 14.0-14.5 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

FEATURES

- Internally impedance matched
- Flip-chip mounted
- High output power
  P1dB = 0.3W(TYP.) @f=14.0-14.5GHz
- High linear power gain
  GLP = 9.0dB(TYP.) @f=14.0-14.5GHz
- High power added efficiency
  P.A.E.=25%(TYP.) @f=14.0-14.5GHz

APPLICATION

- For use in 14.0-14.5GHz band amplifiers

QUALITY GRADE

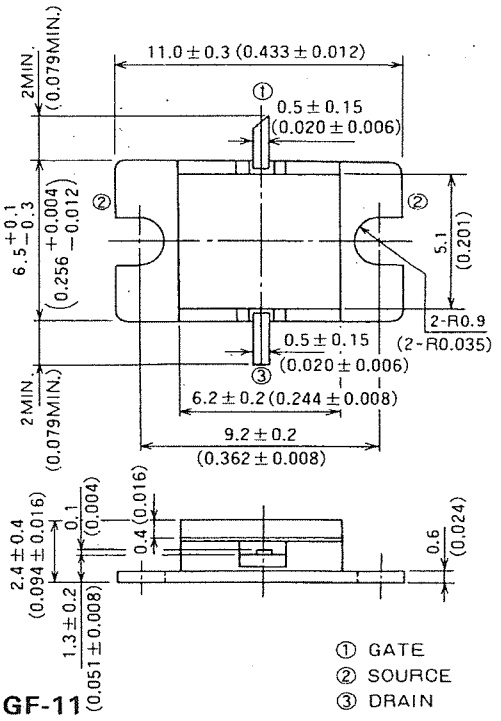
- IG

RECOMMENDED BIAS CONDITIONS

VDS =8 (V)
ID =80 (mA)
Refer to Bias Procedure

OUTLINE DRAWING

Unit: millimeters (inches)



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ABSOLUTE MAXIMUM RATINGS (Ta=25deg.C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain voltage	-15	V
VGSO	Gate to source voltage	-15	V
ID	Drain current	500	mA
IGR	Reverse gate current	-1	mA
IGF	Forward gate current	1	mA
PT *1	Total power dissipation	2.7	W
Tch	Channel temperature	175	deg.C
Tstg	Storage temperature	-65 / +175	deg.C

*1 : Tc=25deg.C

< Keep safety first in your circuit designs! >

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=25deg.C)

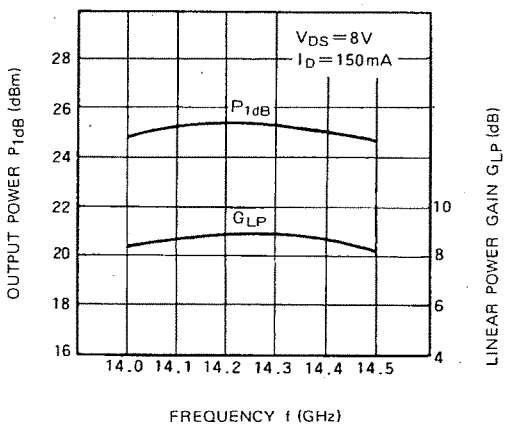
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V,VGS=0V	-	200	500	mA
VGS(off)	Gate to source cut-off voltage	VDS=3V,ID=1mA	-2	-	-5	V
gm	Transconductance	VDS=3V,ID=150mA	-	100	-	mS
P1dB	Output power at 1dB gain compression	VDS=8V, ID(RF off)=150mA, f=14.0 - 14.5GHz	23	26	-	dBm
GLP	Linear power gain		7.0	9.0	-	dB
P.A.E.	Power added efficiency		-	25	-	%
Rth (Ch-C)	Thermal resistance *1	Delta Vf method	-	-	40	deg.C/W

*1 : Channel to case

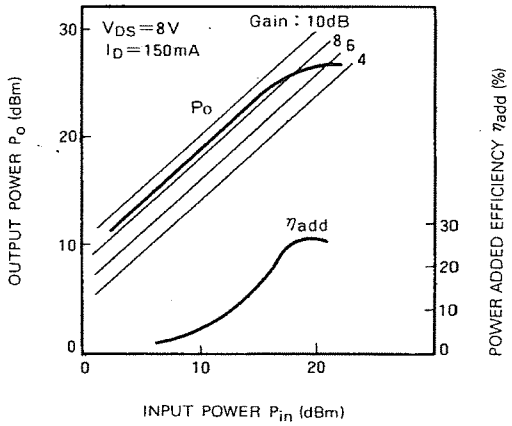
14.0~14.5GHz BAND 0.3W INTERNALLY MATCHED GaAs FET

TYPICAL CHARACTERISTICS (Ta=25°C)

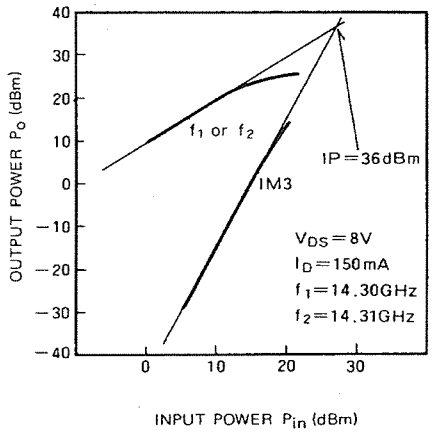
P_{1dB}, G_{LP} vs. f



P_o, η_{add} vs. P_{in} (f = 14.3 GHz)



IM_3 vs. P_{in}



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