MGFK30V4045

14.0-14.5GHz BAND 1W INTERNALLY MATCHED GaAs FET

DESCRIPTION

The MGFK30V4045 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 = 1.1W(TYP.) @f=14.0-14.5GHz
- High linear power gain
  GLP = 8.0dB(TYP.) @f=14.0-14.5GHz
- High power added efficiency
  P.A.E.=24%(TYP.) @f=14.0-14.5GHz

APPLICATION

- For use in 14.0-14.5GHz band amplifiers

QUALITY GRADE

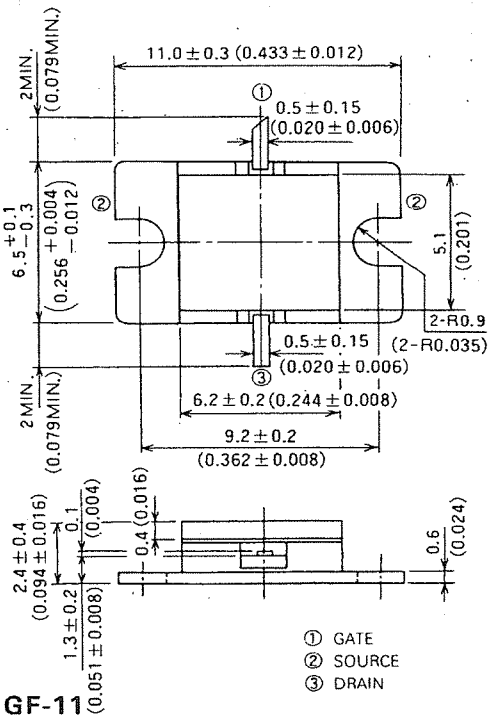
- IG

RECOMMENDED BIAS CONDITIONS

VDS =8 (V)
ID =350 (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	1000	mA
IGR	Reverse gate current	-3	mA
IGF	Forward gate current	5	mA
PT *1	Total power dissipation	11	W
Tch	Channel temperature	175	deg.C
Tstg	Storage temperature	-65 / +175	deg.C

*1 : Tc=25deg.C

ELECTRICAL CHARACTERISTICS (Ta=25deg.C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V,VGS=0V	-	800	1000	mA
VGS(off)	Gate to source cut-off voltage	VDS=3V,ID=2mA	-2	-	-5	V
gm	Transconductance	VDS=3V,ID=350mA	-	300	-	mS
P1dB	Output power at 1dB gain compression	VDS=8V, ID(RF off)=350mA, f=14.0 - 14.5GHz	29.5	31	-	dBm
GLP	Linear power gain		7.0	8.0	-	dB
P.A.E.	Power added efficiency		-	24	-	%
Rth (Ch-C)	Thermal resistance *1	Delta Vf method	-	-	20	deg.C/W

*1 : Channel to case

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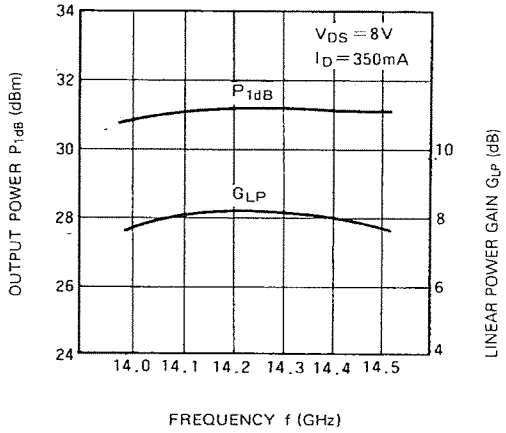
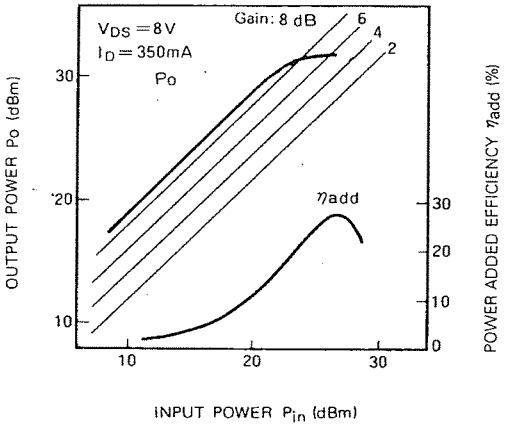
TYPICAL CHARACTERISTICS (T_a=25°C)

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



P_o, η_{add} vs. P_{in} (f = 14, 3GHz)



IM_3 vs. P_{in}