

# MGFK44A4045

## 14.0-14.5GHz BAND 25W INTERNALLY MATCHED GaAs FET

### DESCRIPTION

The MGFK44A4045 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
- High output power  
P1dB = 44.0dBm(TYP.) @f=14.0-14.5GHz
- High linear power gain  
GLP = 6.0dB(TYP) @f=14.0-14.5GHz

### APPLICATION

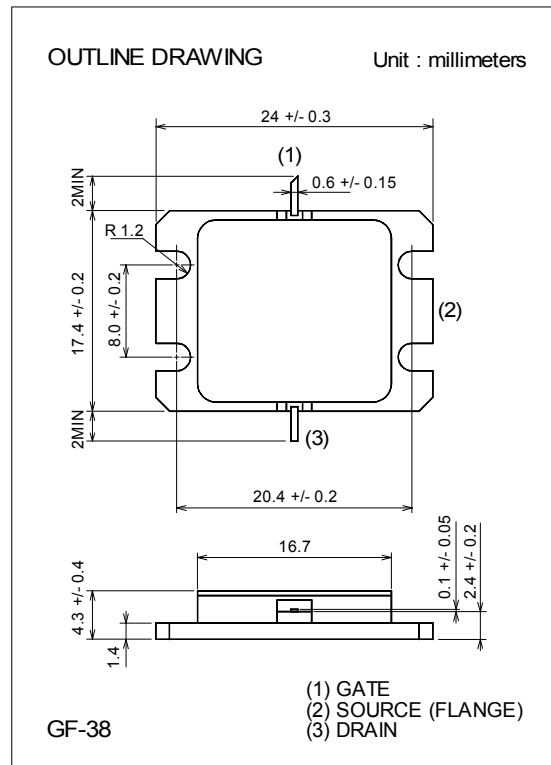
- For use in 14.0-14.5GHz band amplifiers

### QUALITY GRADE

- IG

### RECOMMENDED BIAS CONDITIONS

VDS = 10 (V)  
ID(Rfoff) = 6.0 (A)  
Rg=25 (ohm)



### ABSOLUTE MAXIMUM RATINGS

(Ta=25deg.C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain voltage	-15	V
VGSO	Gate to source voltage	-10	V
ID	Drain current	20	A
IGR	Reverse gate current	-72	mA
IGF	Forward gate current	144	mA
PT *1	Total power dissipation	100	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! >  
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### ELECTRICAL CHARACTERISTICS

(Ta=25deg.C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V, VG=0V	--	16.0	--	A
gm	Transconductance	VDS=0V, ID=6.0A	--	6	--	S
VGS(off)	Gate to source cut-off voltage	VDS=3V, ID=80mA	-1.0	-1.5	-4.0	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=6.0A, f=14.0 - 14.5GHz	43	44	--	dBm
GLP	Linear power gain		5.0	6.0	--	dB
P.A.E.	Power added efficiency		--	17	--	%
Rth (Ch-C)	Thermal resistance	Channel to Case	--	1.2	1.5	deg.C/W

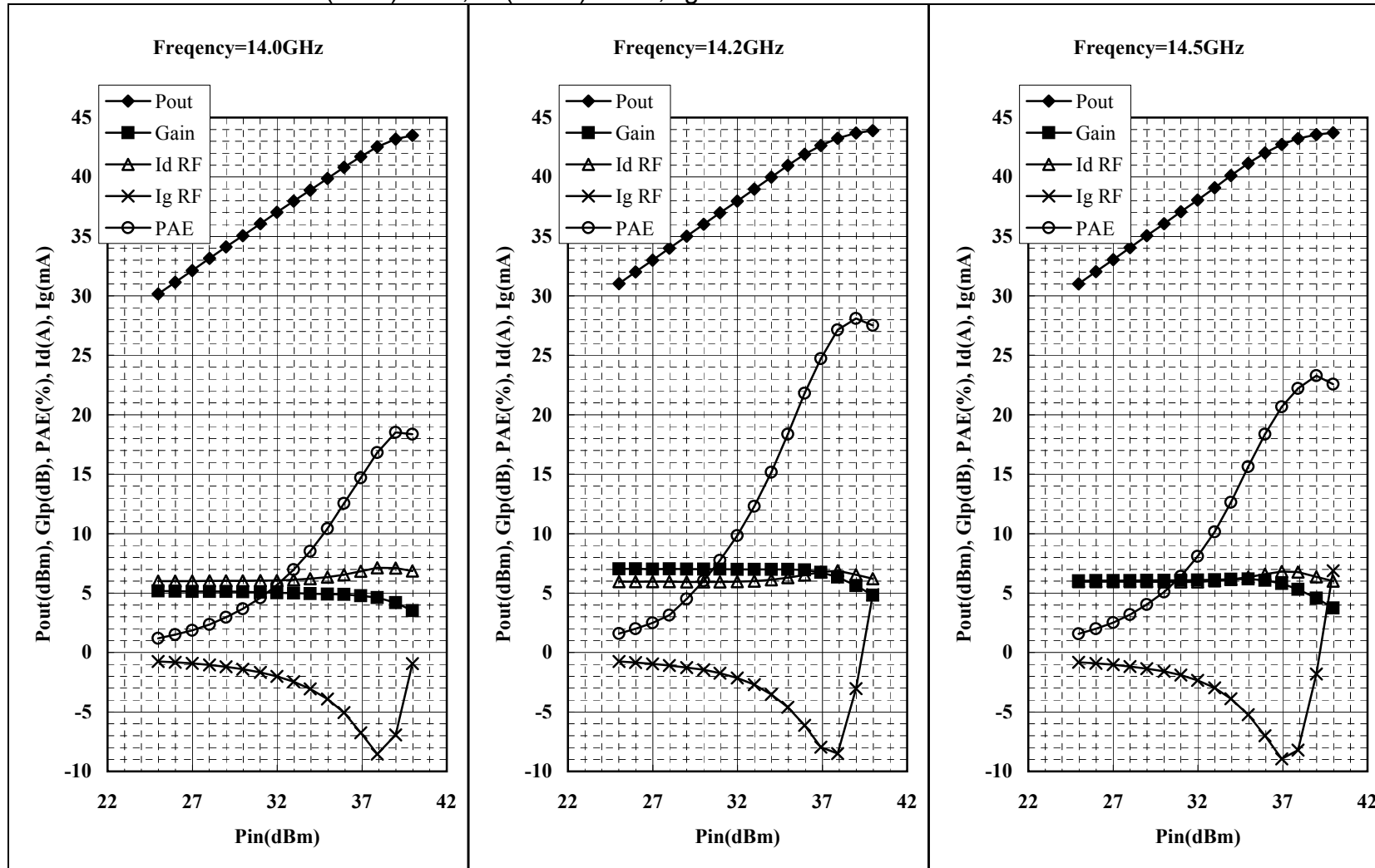


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# MGFK44A4045

OUTPUT POWER & POWER ADDED EFFICIENCY & GAIN vs. INPUT POWER  
 TEST CONDITIONS :  $V_{ds}(R_{off})=10V, I_{ds}(R_{off})=6.0A, R_g=25\Omega$



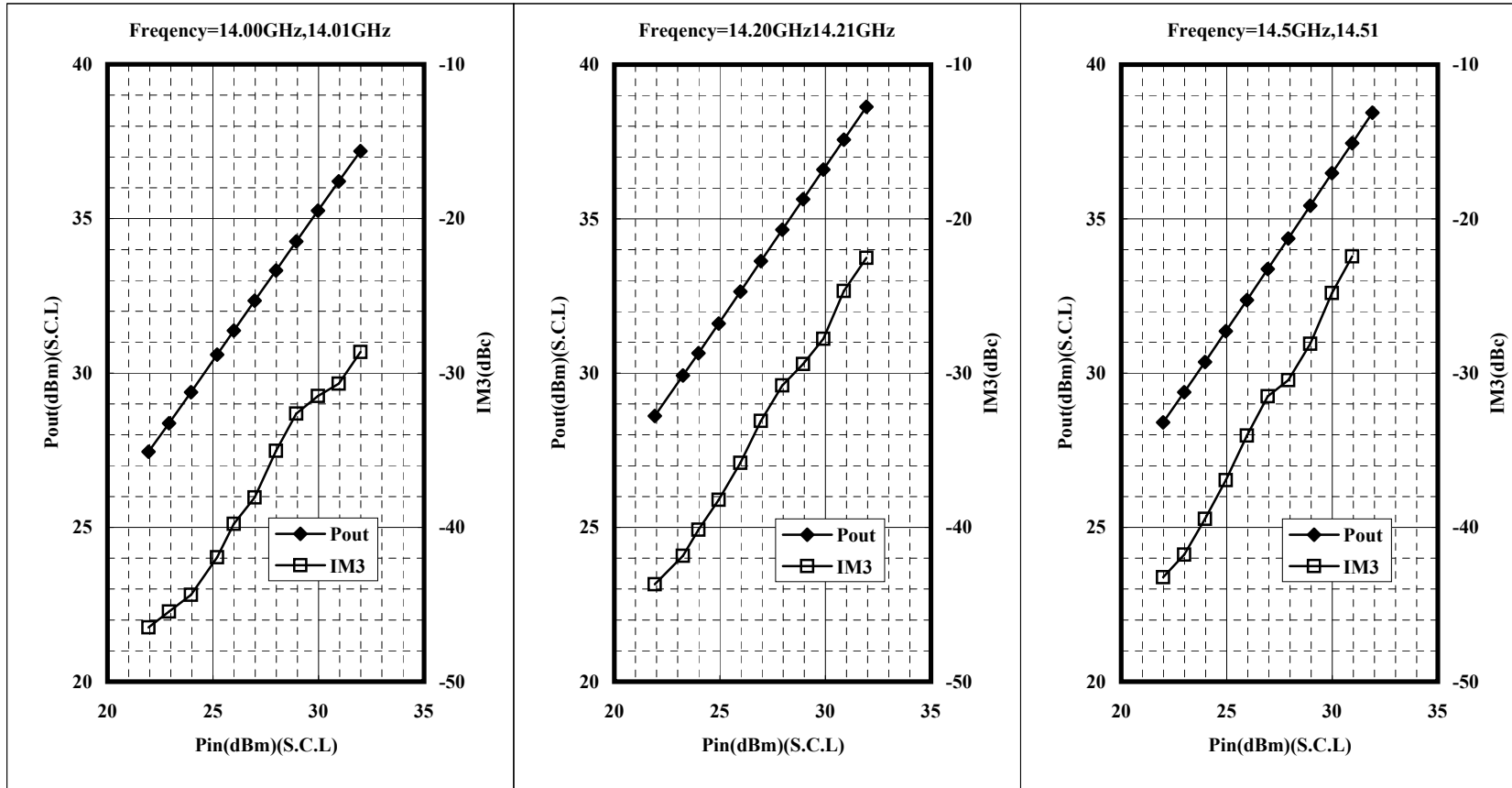
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# MGFK44A4045

## IM3 vs. OUTPUT POWER

TEST CONDITIONS  $V_{ds}(R_{off})=10V, I_{ds}(R_{off})=6.0A, R_g=25\Omega$   
2-tone test



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