

# MGFC45V3436A

## 3.4 - 3.6GHz BAND 32W INTERNALLY MATCHED GaAs FET

### DESCRIPTION

The MGFC45V3436A is an internally impedance-matched GaAs power FET especially designed for use in 3.4 - 3.6 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  
P1dB = 32W (TYP.) @ f=3.4 - 3.6 GHz
- High power gain  
GLP = 12 dB (TYP.) @ f=3.4 - 3.6GHz
- High power added efficiency  
P.A.E. = 36 % (TYP.) @ f=3.4 - 3.6GHz
- Low distortion [item -51]  
IM3=-45dBc(TYP.) @ Po=34.5dBm S.C.L.

### APPLICATION

- item 01 : 3.4 - 3.6 GHz band power amplifier
- item 51 : 3.4 - 3.6 GHz band digital radio communication

### QUALITY GRADE

IG

### RECOMMENDED BIAS CONDITIONS

- VDS = 10 (V)
- ID = 8 (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	-15	V
ID	Drain current	25	A
IGR	Reverse gate current	-80	mA
IGF	Forward gate current	168	mA
PT *1	Total power dissipation	150	W
Tch	Channel temperature	175	deg.C
Tstg	Storage temperature	-65 / +175	deg.C

\*1 : Tc=25deg.C

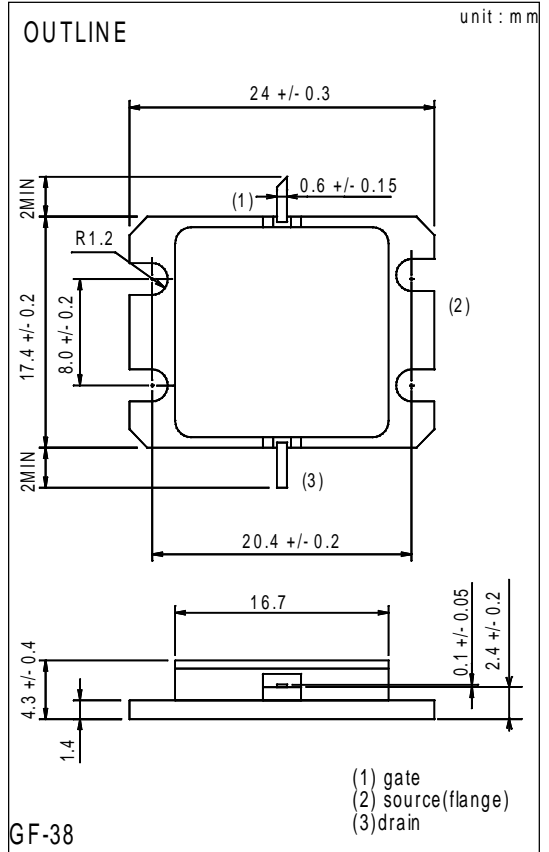
### ELECTRICAL CHARACTERISTICS

(Ta=25deg.C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS = 3V , VGS = 0V	-	24	-	A
gm	Transconductance	VDS = 3V , ID = 8A	-	8	-	S
VGS(off)	Gate to source cut-off voltage	VDS = 3V , ID = 160mA	-2	-	-5	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=8A, f=3.4 - 3.6GHz	44	45	-	dBm
GLP	Linear power gain		11	12	-	dB
ID	Drain current		-	8	-	A
P.A.E.	Power added efficiency		-	36	-	%
IM3 *2	3rd order IM distortion		-42	-45	-	dBc
Rth(ch-c) *3	Thermal resistance		delta Vf method	-	0.8	1

\*2 : item -51,2 tone test,Po=34.5dBm Single Carrier Level,f=3.4,3.5,3.6GHz,delta f=10MHz

\*3 : Channel-case



< Keep safety first in your circuit designs! >

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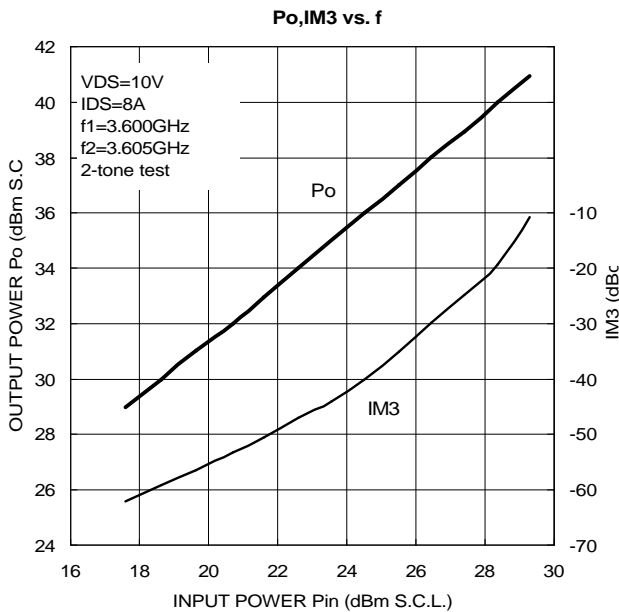
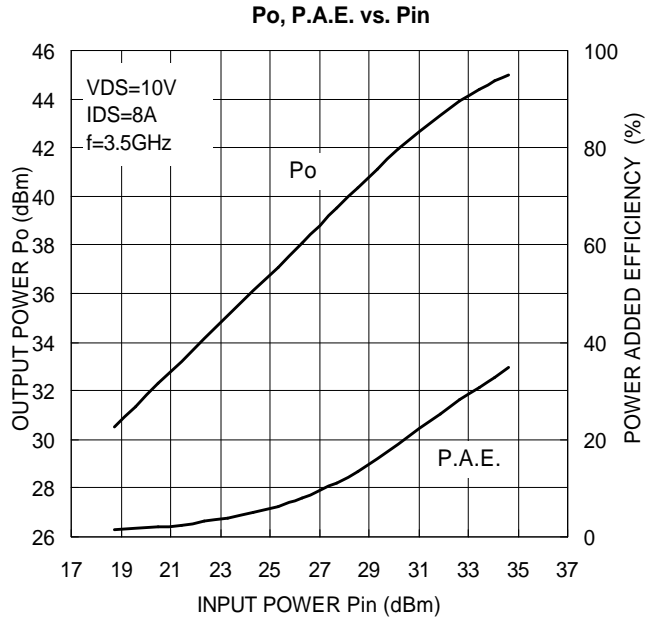
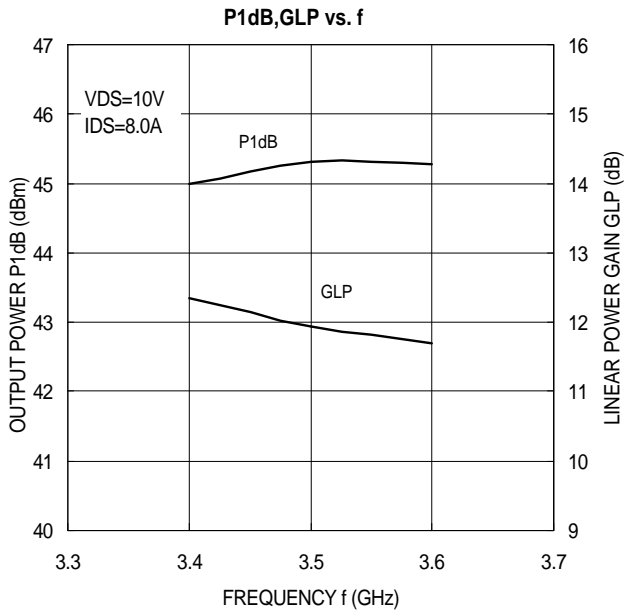


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ELECTRIC

# MGFC45V3436A

## 3.4 - 3.6GHz BAND 32W INTERNALLY MATCHED GaAs FET

### TYPICAL CHARACTERISTICS



**S parameters** (Ta=25deg.C, VDS=10(V), IDS=8(A))

f (GHz)	S-Parameter (TYP.)							
	S11		S21		S12		S22	
	Magn.	Angle(deg)	Magn.	Angle(deg)	Magn.	Angle(deg)	Magn.	Angle(deg)
3.30	0.45	137	3.81	49	0.05	-14	0.44	-29
3.35	0.51	119	3.77	36	0.05	-29	0.41	-41
3.40	0.56	104	3.70	20	0.05	-45	0.38	-52
3.45	0.59	91	3.62	7	0.05	-60	0.34	-64
3.50	0.61	81	3.57	-3	0.05	-71	0.33	-78
3.55	0.62	70	3.55	-18	0.05	-82	0.33	-93
3.60	0.62	59	3.53	-29	0.06	-99	0.32	-106
3.65	0.61	51	3.50	-40	0.06	-109	0.32	-122
3.70	0.58	38	3.56	-55	0.06	-124	0.32	-133



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