

## < C band internally matched power GaAs FET >

## **MGFC45V3436A**

3.4 - 3.6 GHz BAND / 32W

#### **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 - 3.6GHz

• High power gain

GLP=12.0dB (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**

• IG

#### RECOMMENDED BIAS CONDITIONS

• VDS=10V • ID=8A • RG=25ohm

#### Absolute maximum ratings (Ta=25°C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain breakdown voltage	-15	V
VGSO	Gate to source breakdown voltage	-15	V
ID	Drain current	25	Α
IGR	Reverse gate current	-80	mA
IGF	Forward gate current	168	mA
PT *1	Total power dissipation	150	W
Tch	Cannel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C
Tstg *1 · Tc=25	ı ı	-65 to +175	°C

# unit:mm **OUTLINE** 24 +/- 0.3 R1.2 17.4 +/- 0.2 (2)20.4 +/- 0.2 +/- 0.05 +/- 0.2 (1) gate (2) source(flange) (3)drain GF-38

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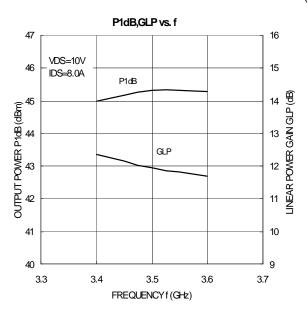
#### Electrical characteristics

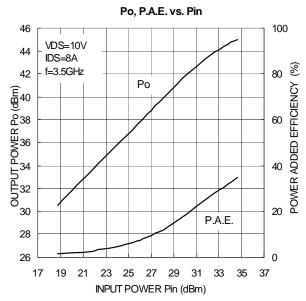
Symbol	Parameter	Test conditions	Limits		Unit	
			Min.	Тур.	Max.	
IDSS	Saturated drain current	VDS=3V,VGS=0V	-	24	-	Α
gm	Transconductance	VDS=3V,ID=8A	-	8	-	S
VGS(off)	Gate to source cut-off voltage	VDS=3V,ID=160mA	-2	-	-5	V
P1dB	Output power at 1dB gain compression	VDS=10V,ID(RF off)=8A	44	45	-	dBm
GLP	Linear Power Gain	f=3.4 - 3.6GHz	11	12	-	dB
ID	Drain current		-	8	-	Α
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	°C/W

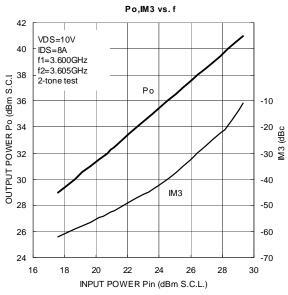
<sup>\*2 :</sup>item -51 ,2 tone test,Po=34.5dBm Single Carrier Level ,f=3.4,3.5,3.6GHz,delta f=10MHz

<sup>\*3:</sup> Channel-case

### MGFC45V3436A TYPICAL CHARACTERISTICS (Ta=25deg.C)







## **MGFC45V3436A S-parameters**( Ta=25deg.C , VDS=10(V),IDS=8.0(A) )

,	S Parameters(Typ.)							
(GHz)	S11		S21		S12		S22	
	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)
3.30	0.54	-95	3.01	104	0.03	43	0.60	13
3.35	0.51	-121	3.27	87	0.03	29	0.56	3
3.40	0.49	-146	3.45	73	0.04	13	0.50	-6
3.45	0.50	-171	3.58	59	0.04	-12	0.44	-17
3.50	0.51	165	3.71	42	0.05	-21	0.39	-29
3.55	0.53	144	3.80	27	0.06	-37	0.34	-42
3.60	0.55	125	3.82	14	0.06	-52	0.29	-56
3.65	0.56	110	3.81	-1	0.06	-69	0.24	-74
3.70	0.56	93	3.84	-15	0.07	-80	0.22	-94

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