

# MGFC41V3642

## 3.6 - 4.2GHz BAND 12W INTERNALLY MATCHED GaAs FET

### DESCRIPTION

The MGFC41V3642 is an internally impedance matched GaAs power FET especially designed for use in 3.6 - 4.2 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

### FEATURES

- Internally matched to 50ohm system
- High output power  
P1dB = 14W (TIP.) @ f=3.6 - 4.2 Hz
- High power gain  
GLP = 12.5 dB (TYP.) @ f=3.6 - 4.2 GHz
- High power added efficiency  
Eadd = 40 % (TYP.) @ f=3.6 - 4.2 GHz
- Low Distortion[Item-51]  
IM3=-45 dBc(TYP.)@Po=30dBm S.C.L.

### APPLICATION

- item 01 : 3.6 - 4.2 GHz band power amplifier
- item 51 : 3.6 - 4.2 GHz band digital radio communication

### QUALITY GRADE

IG

### RECOMMENDED BIAS CONDITIONS

- VDS = 10(V)
- ID = 3.4 (A)
- Rg = 50(ohm) Refer to Bias Procedure

### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Ratings	Unit
V <sub>GDO</sub>	Gate to drain voltage	-15	V
V <sub>GSO</sub>	Gate to source voltage	-15	V
I <sub>D</sub>	Drain current	12	A
I <sub>GR</sub>	Reverse gate current	-30	mA
I <sub>GF</sub>	Forward gate current	63	mA
P <sub>T</sub>	Total power dissipation *1	53.6	W
T <sub>ch</sub>	Channel temperature	175	DegreesC
T <sub>stg</sub>	Storage temperature	-65 / +175	DegreesC

\*1 : Tc=25 DegreesC

### ABSOLUTE MAXIMUM RATINGS

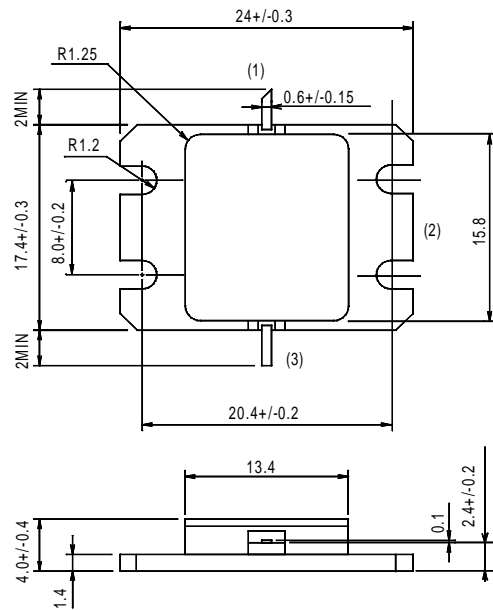
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
IDSS	Saturated drain current	VDS = 3V , VGS = 0V	-	-	12	A
gm	Transconductance	VDS = 3V , ID = 3.0A	-	3	-	S
VGS(off)	Gate to source cut-off voltage	VDS = 3V , ID = 30mA	-	-	-5	V
P1dB	Output power at 1dB gain compression	VDS = 10V , ID = 3.4A , f = 3.6 - 4.2 GHz	40	41.5	-	dBm
GLP	Linear power gain		11	12.5	-	dB
ID	Drain current		-	3.3	-	A
Eadd	Power added efficiency		-	40	-	%
IM3 *2	3rd order IM distortion		-42	-45	-	dBc
Rth(ch-c)	Thermal resistance *1		Delta Vf method	-	-	2.8

\*1 : Channel to case

\*2 : Item-51,2tone test,Po=30dBm Single Carrier Level,f=4.2GHz,Delta f=10MHz

### OUTLINE DRAWING

Unit: millimeters (inches)



GF-18

- (1): GATE
- (2): SOURCE (FLANGE)
- (3): DRAIN

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