MITSUBISHI ELECTRIC

< Ku band internally matched power GaN HEMT >

MGFK48G3745

13.75 – 14.5 GHz BAND / 70W

DESCRIPTION

The MGFK48G3745, GaN HEMT with an N-channel schottky gate, is designed for Ku-band applications.

FEATURES

- High voltage operation
  VDS=24V
- High output power
  Po=48.3dBm (TYP.) @Pin=42dBm
- High efficiency
  PAE=33% (TYP.) @Pin=42dBm
- Designed for use in Class AB linear amplifiers

APPLICATION

- Amplifier for Ku-band SATCOM

QUALITY

- General & Industrial

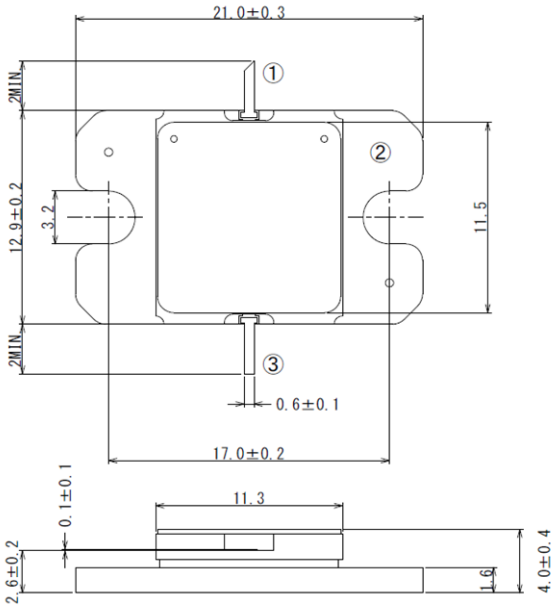
Packaging

- Individual case

RECOMMENDED BIAS CONDITIONS

- Vds=24V
- Ids=1.44A
- Rg=13.3Ω

OUTLINE DRAWING Unit : millimeters



GF-68

① GATE
② SOURCE (FLANGE)
③ DRAIN

Absolute maximum ratings (Ta=25°C)

Symbol	Parameter	Ratings	Unit
Vgso	Gate to Source Voltage at Operating	-10	V
Vds	Drain to source voltage	27	V
IGF	Forward gate current	100	mA
IGR	Reverse gate current	-24	mA
PT*1	Total power dissipation	225	W
Pin	Input power	≦44	dBm
Tch	Channel temperature	250	°C
Tstg	Storage temperature	-55 to +125	°C

*1:Tc=25°C

Recommended operating Condition

Symbol	Parameter	Limit	Unit
Tch	Channel temperature	≦175	℃
Vds	Drain to source voltage	≦24	V
IDQ	Drain Current without RF Drive	1.44	mA

Electrical characteristics (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
VGS(off)	Gate to source cut-off voltage	VDS=24V,ID=28.8Am	-1	-	-5	V
Pout *2	Output Power	VDS=24V,ID(RF off)=1.44A f=13.75 – 14.5GHz *2 : Pin=42dBm, *3 : Pin=27dBm *4 : Single Carrier Level, Po=42.3dBm under two-tone test	47.3	48.3	-	dBm
PAE *2	Power added efficiency		-	33	-	%
GLP *3	Linear power gain		9	10	-	dB
IM3 *4	3rd Order Intermodulation distortion		-25	-	-	dBc
Rth(ch-c) *5	Thermal resistance	ΔVf method	-	0.8	1.0	°C/W

*5 :Channel-case

Specifications are subject to change without notice.

ESD *6	Class 0	-199~

*6 :Based on EIAJ ED-4701 C-111A(C=100pF,R=1.5kΩ)

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MITSUBISHI ELECTRIC CORPORATION

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