MITSUBISHI ELECTRIC

< GaN HEMT for satellite communication (SATCOM) earth station>

MGFK48G2732

Ku band internally matched power GaN HEMT
12.75 − 13.25 GHz BAND / 70W Single-carrier operable

DESCRIPTION

The MGFK48G2732, GaN HEMT with an N-channel schottky gate, is designed for Ku-band applications with single-carrier operation.

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

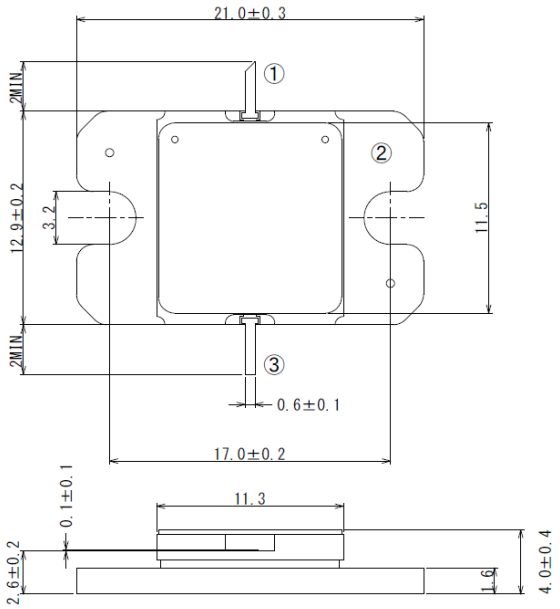
Packaging

- 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
τ	Screw torque	49	N・cm
PT*1	Total power dissipation	225	W
Pin	Input power	≦44	dBm
Tch	Channel temperature	250	°C
Tstg	Storage temperature	-55 to +125	°C
Tc	Maximum case operating temperature	-10	°C

*1:Tc=25°C

Recommended operating Condition

Symbol	Parameter	Limit	Unit
Tc	Case Operating Temperature	85	℃
Vds	Drain - Source Voltage	24	V
IDQ	Drain Quiescent Current	1.44	A
Rg	Gate Resistance	13.3	Ω

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Electrical characteristics (Ta=25°C)

Parameter	Symbol	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
Pinch-off Voltage	VGS(off)	Vds=24V,ID=28.8mA	-1	-	-5	V
Output Power	Pout *2	Vds=24V,IDQ=1.44A f=12.75 ,13.00, 13.25GHz *2 : Pin=42dBm *3 : Pin=27dBm *4 : Two-tone, Po=39.3dBm (Single Carrier Level) Δ f=5MHz(IM3)	47.3	48.3	-	dBm
Power Added Efficiency	PAE *2		-	33	-	%
Linear Power Gain	GLP *3		9	12	-	dB
3rd Order Intermodulation distortion	IM3 *4		-	-25	-	dBc
Thermal Resistance	Rth(ch-c) *5	Δ Vf 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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