

< Ku band internally matched power GaN HEMT >

MGFK49G3745

13.75 – 14.5 GHz BAND / 80W

DESCRIPTION

The MGFK49G3745, GaN HEMT with an N-channel schottky gate, is designed for Ku-band applications.

FEATURES

- High voltage operation
VDS=24V
- High output power
Po=49.0dBm(TYP.) @Pin=45dBm
- High efficiency
PAE=28%(TYP.) @Pin=45dBm
- Designed for use in Class AB linear amplifiers

APPLICATION

- Amplifier for Ku-band SATCOM

QUALITY

- General & Industrial

RECOMMENDED BIAS CONDITIONS

- Vds=24V • Ids=2.1A • Rg=10Ω

Absolute maximum ratings (Ta=25°C)

Symbol	Parameter	Ratings	Unit
VDS	Drain to Source Voltage at operating	30	V
VGS	Gate to source voltage	-10	V
PT*1	Total power dissipation	341.7	W
Tch	Channel temperature	230	°C
Tstg	Storage temperature	-65 to +175	°C

*1:Tc=25°C

Recommended operating Condition

Symbol	Parameter	Limit	Unit
Pin-ave	Average Input power	≤45	dBm
Tch	Channel temperature	≤175	°C
I _{GR}	Reverse gate current	-80	mA
I _{GF}	Forward gate current	160	mA

Electrical characteristics (Ta=25°C)

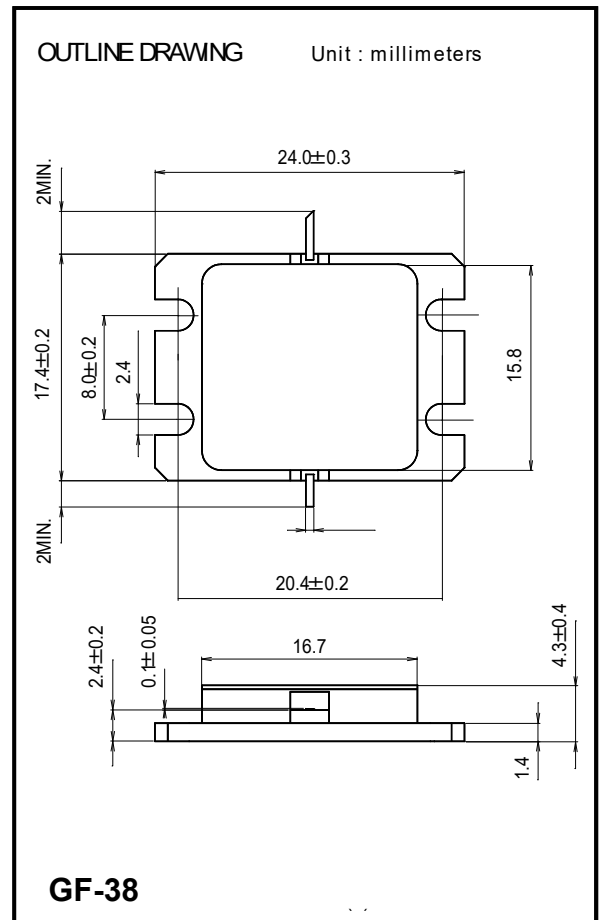
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
VGS(off)	Gate to source cut-off voltage	VDS=24V, ID=38.4mA	-1	-	-5	V
Pout *2	Output power	VDS=24V, ID(RF off)=2.1A	48	49	-	dBm
PAE	Power added efficiency	f=13.75 – 14.5GHz		28	-	%
GLP *3	Linear power gain	*2 : Pin=45dBm *3 : Pin=25dBm	6.5	7.5	-	dB
IM3*4	3 rd Order intermodulation distortion	*4 : Single Carrier Level Po=42dBm under two-tone test	-25	-	-	dBc
Rth(ch-c) *5	Thermal resistance	ΔVf method	-	0.4	0.6	°C/W

*5 :Channel-case

Specifications are subject to change without notice.

ESD *5	Class 0	-199~
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*5 :Based on EIAJ ED-4701 C-111A(C=100pF,R=1.5kΩ)



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