

**< Ku band internally matched power GaN HEMT >**

# MGFK50G3745

**13.75 – 14.5 GHz BAND / 100W**
**DESCRIPTION**

The MGFK50G3745, GaN HEMT with an N-channel schottky gate, is designed for Ku-band applications.

**FEATURES**

- High voltage operation  
VDS=24V
- High output power  
Po=50.2dBm(TYP.) @Pin=45dBm
- High efficiency  
PAE=30%(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=2.4A • Rg=10Ω

**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	160	mA
IGR	Reverse gate current	-48	mA
PT*1	Total power dissipation	375	W
Pin	Input power	47	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	°C
Vds	Drain to source voltage	24.0	V
IDQ	Drain Current without RF Drive	2.4	A

**Electrical characteristics (Ta=25°C)**

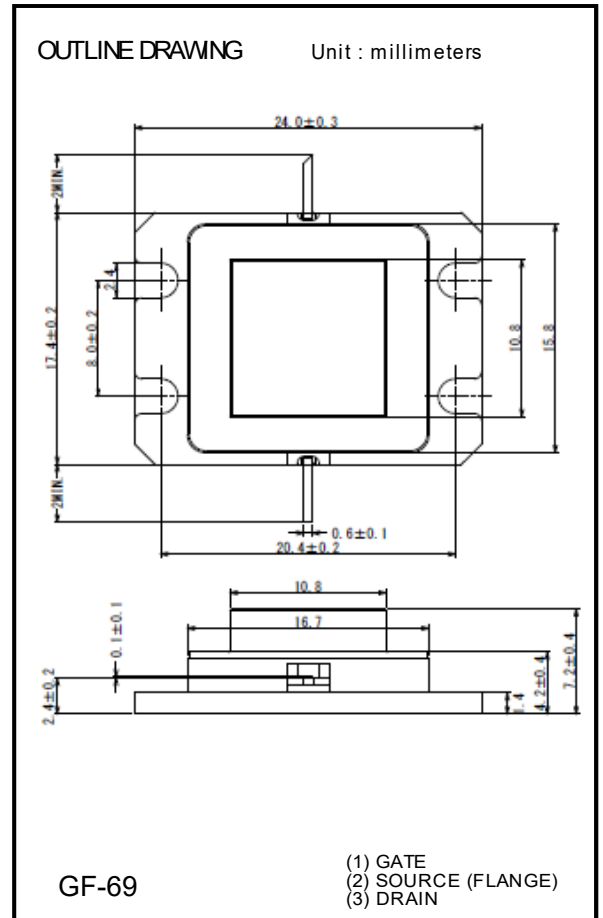
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
VGS(off)	Gate to source cut-off voltage	VDS=24V, ID=48mA	-1	-	-5	V
Pout *2	Output power	VDS=24V, ID(RF off)=2.4A	49.0	50.2	-	dBm
PAE	Power added efficiency	f=13.75 – 14.5GHz		30	-	%
GLP *3	Linear power gain	*2 : Pin=45dBm, *3 : Pin=25dBm	8.0	9.2	-	dB
IM3 *4	3 <sup>rd</sup> Order intermodulation distortion	*4 : Single Carrier Level Po=43dBm 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 *6	Class 0	-199~
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\*6 :Based on EIAJ ED-4701 C-111A(C=100pF,R=1.5kΩ)



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