MITSUBISHI ELECTRIC

Changes for the Better

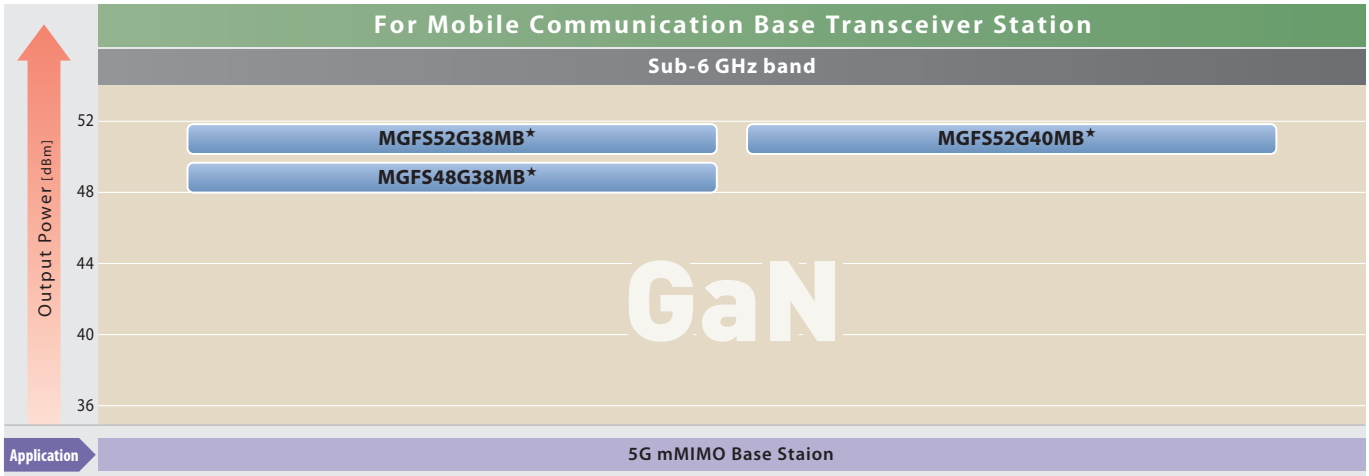
HIGH FREQUENCY DEVICES

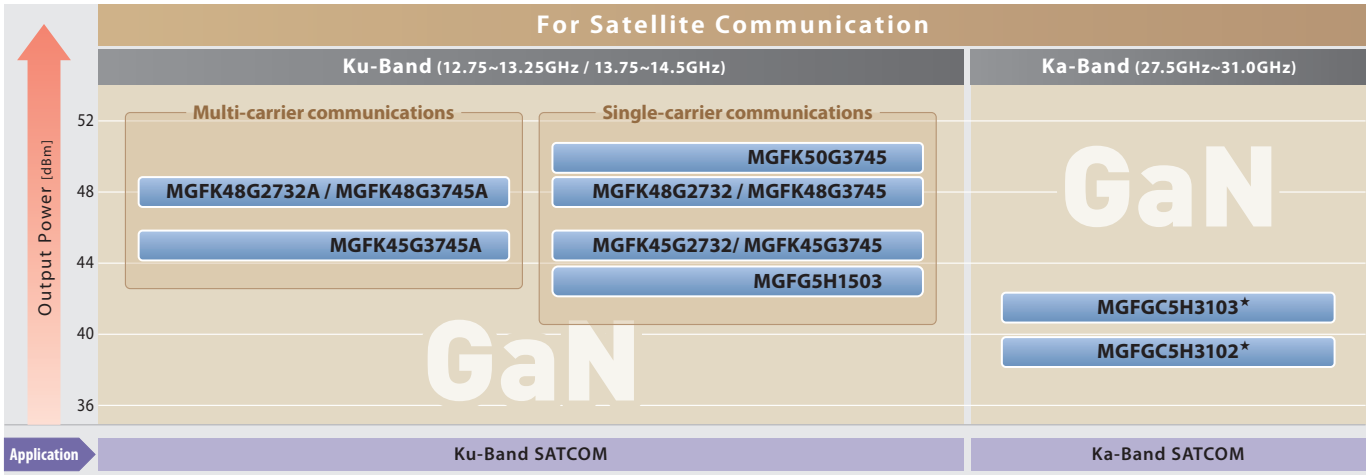
HIGH FREQUENCY DEVICES

The Best Solution for Realizing the Information and Communication Era

SELECTION MAP

GaN HEMT SERIES FOR MICROWAVE-BAND HIGH POWER AMPLIFIERS





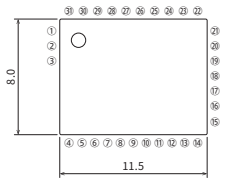
★: Under development HEMT: High Electron Mobility Transistor

Partially supported by Japan's New Energy and Industrial Technology Development Organization(NEDO).

PACKAGE OUTLINE DRAWING (only Top View side)

Unit: mm

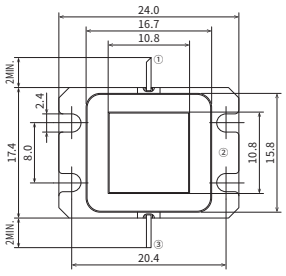
GH-85



Pin No.

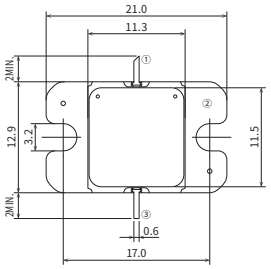
① GND	⑫ GND	㉓ GND
② Txin	⑬ GND	㉔ GND
③ GND	⑭ GND	㉕ GND
④ VG_PA	⑮ VDD_PA	㉖ GND
⑤ NC	⑯ GND	㉗ VDD_PA
⑥ VG_PA	⑰ GND	㉘ NC
⑦ NC	⑱ Txout	㉙ NC
⑧ VG_PA	⑲ GND	㉚ NC
⑨ NC	⑳ GND	㉛ NC
⑩ VG_PA	㉑ VDD_PA	
⑪ GND	㉒ GND	

GF-69



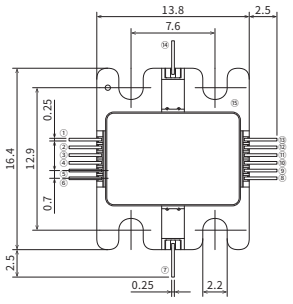
Pin No.
① Gate
② Source (Flange)
③ Drain

GF-68



Pin No.
① Gate
② Source (Flange)
③ Drain

GF-65



Pin No.

① VdB	⑨ Vg3
② Vd1	⑩ Vd2
③ Vd2	⑪ Vd1
④ Vd2	⑫ VgB1
⑤ Vd3	⑬ Vl
⑥ Vd3	⑭ Pin
⑦ Pout	⑮ Source
⑧ Vd3	

Communication networks, such as high speed Internet, and high-speed data communication, are developing rapidly. We are ready to offer the best solution to the systems for realizing the infomation and communication era by providing of the GaN products.

PRODUCT LIST

GaN HEMT SERIES FOR MOBILE COMMUNICATION BASE TRANSCEIVER STATION

Type Number	Peak Output Power [dBm]	Average Output Power [dBm]	Power Gain [dB]	Power Added Efficiency [%]	Frequency [GHz]	Drain-Source Voltage [V]	Package Outline
MGFS48G38MB★	49	39	28.5	43	3.3~3.8	42	GH-85
MGFS52G38MB★	51.5	42	29	40	3.3~3.8	46	GH-85
MGFS52G40MB★	51.5	42	30	41	3.6~4.0	46	GH-85

Ta=25°C ★: Under development

GaN HEMT SERIES FOR SATELLITE COMMUNICATION

Type Number	Output Power [dBm]	Linear Power Gain [dB]	Power Added Efficiency [%]	Offset Frequency	Frequency [GHz]	Drain-Source Voltage [V]	Drain Current [A]	Thermal Resistance [°C/W] Typ.	Thermal Resistance [°C/W] Max.	Package Outline
Multi-carrier communications Ku-band GaN HEMT										
MGFK48G2732A	48.3	11	31	~400MHz	12.75~13.25	24	1.44	0.8	1	GF-68
MGFK48G3745A	48.3	11	31	~400MHz	13.75~14.5	24	1.44	0.8	1	GF-68
MGFK45G3745A	45.3	9.5	30	~400MHz	13.75~14.5	24	0.72	1.6	2	GF-68
Single-carrier communications Ku-band GaN HEMT・MMIC										
MGFK45G2732	45.3	9.5	31	~5MHz	12.75~13.25	24	0.72	1.6	2	GF-68
MGFK48G2732	48.3	12	33	~5MHz	12.75~13.25	24	1.44	0.8	1	GF-68
MGFK50G3745	50	10	30	~5MHz	13.75~14.5	24	2.4	0.4	0.6	GF-69
MGFK48G3745	48.3	12	33	~5MHz	13.75~14.5	24	1.44	0.8	1	GF-68
MGFK45G3745	45.3	9.5	31	~5MHz	13.75~14.5	24	0.72	1.6	2	GF-68
MGFG5H1503	43	24	20	~5MHz	13.75~14.5	24	2.7	1.2	1.5	GF-65
Ka-band GaN MMIC										
MGFGC5H3103★	41.5	24	32	–	27.5~31.0	22	0.27	2.6	–	Bare chip
MGFGC5H3102★	39	24	34	–	27.5~31.0	22	0.14	5.2	–	Bare chip

Ta=25°C ★: Under development

TYPE NAME DEFINITION OF HIGH FREQUENCY DEVICES

For Mobile Communication Base Transceiver Station

MGF S 48 G 38 M B
A B C D E F

- A Freq. Band — **S**: S-band
- B Output Power in dBm — ex. **48** = 48 dBm
- C Device Structure — **G**: GaN HEMT
- D Freq. Band in GHz — ex. **38** = to 3.8 GHz
- E Package — ex. **M**: Module
- F Series Number

For Satellite Communication (Internally Matched)

MGF K 50 G 3745
A B C D

- A Freq. Band — **K**: Ku-band
- B Output Power in dBm — ex. **50** = 50 dBm = 100W (typ.)
- C Device Structure — **G**: GaN HEMT
- D Freq. Band in GHz — ex. **3745** = 13.75 ~ 14.5 GHz

For Satellite Communication (MMIC)

MGF G C 5H 31 03
A B C D E

- A Device Structure — **G**: GaN HEMT
- B Product Type — **C**: Bare Chip
- C Function — **5H**: High Power MMIC (>27dBm)
- D max Frequency — ex. **31** = 31 GHz
- E Product Number

High Frequency devices are compliant with the **RoHS** (2011/65/EU, (EU)2015/863).

RoHS: Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment.

Mitsubishi Electric High Frequency Devices Website

www.MitsubishiElectric.com/semiconductors/hf/

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New publication effective Jun., 2025.
Specifications subject to change without notice.

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H-CX587-F KI-2506