MITSUBISHI ELECTRIC

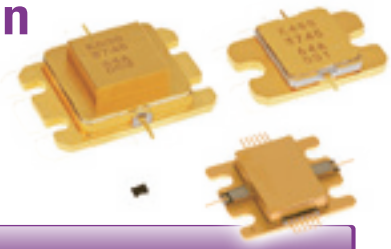
Changes for the Better

for a greener tomorrow eco Changes

HIGH FREQUENCY DEVICES

High Frequency Devices

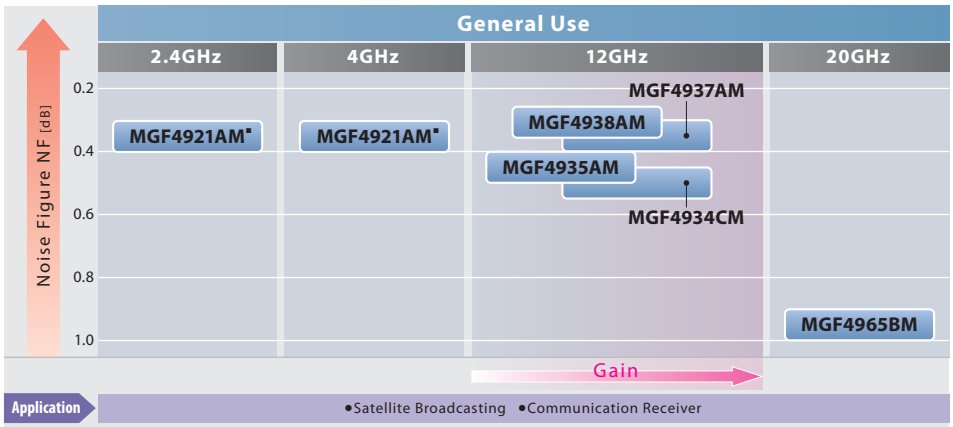
The Best Solution for Realizing the Information and Communication Era



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/GaAs products.

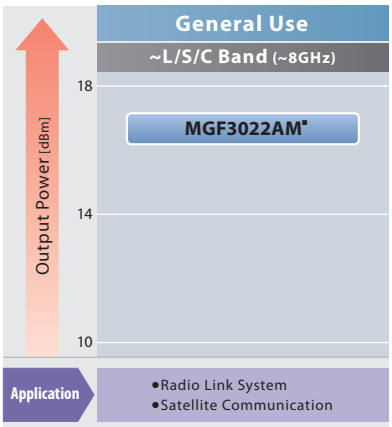
SELECTION MAP

GaAs HEMT SERIES FOR MICROWAVE-BAND LOW-NOISE AMPLIFIERS (Discrete)



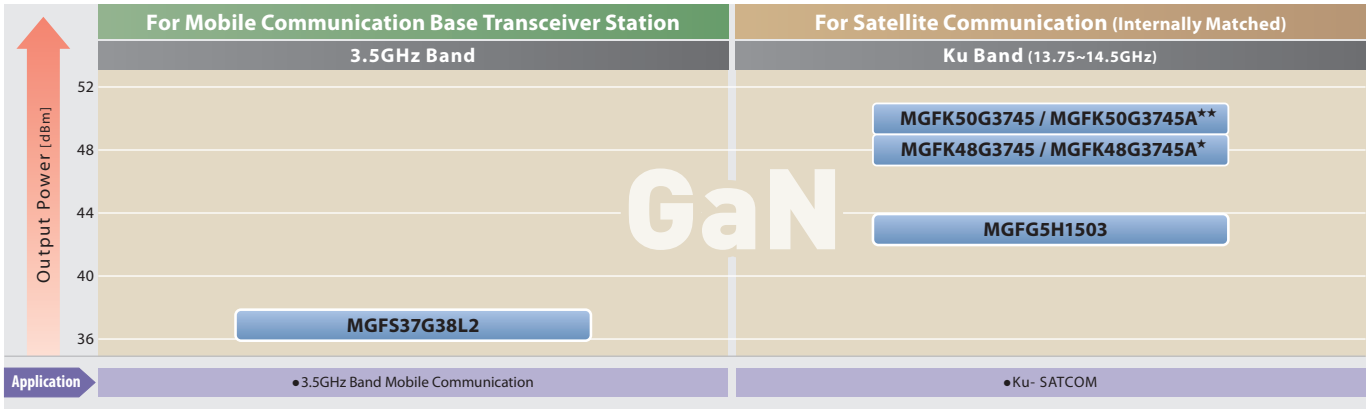
■: AEC-Q101 qualified HEMT: High Electron Mobility Transistor
: 4-pin Mold Package (GD-30)

InGaP HBT FOR SMALL SIGNAL AMPLIFIERS (Discrete)



■: AEC-Q101 qualified HBT: Heterojunction Bipolar Transistor
: 4-pin Mold Package (GD-30)

GaN HEMT SERIES FOR MICROWAVE-BAND HIGH POWER AMPLIFIERS



★: New product (Multi carrier operable) ★★: Under development (Multi carrier operable)

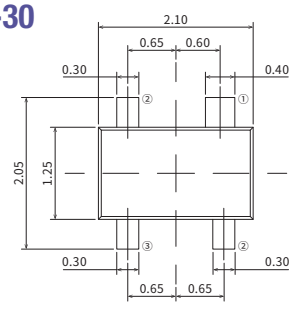
Partially supported by Japan's New Energy and Industrial Technology Development Organization(NEDO).

PACKAGE OUTLINE DRAWING

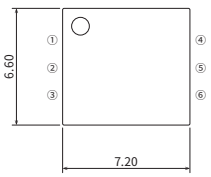
(only Top View side)

Unit: mm

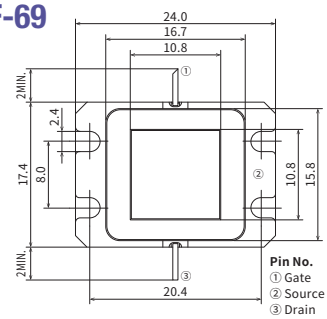
GD-30



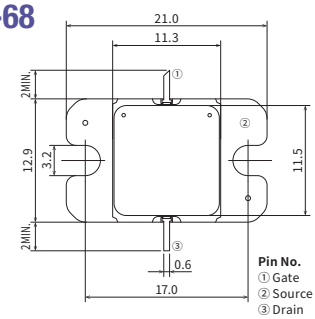
GF-67



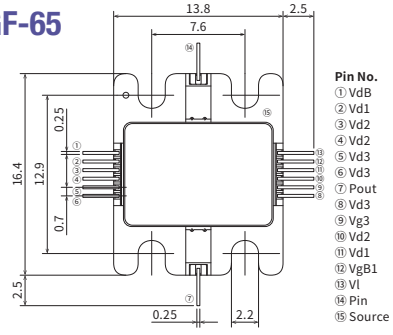
GF-69



GF-68



GF-65



PRODUCT LIST

GaAs HEMT SERIES FOR MICROWAVE-BAND LOW-NOISE AMPLIFIERS (Discrete)

Type Number	Noise Figure [dB]		Associated Gain [dB]		Frequency [GHz]	Drain-Source Voltage [V]	Drain Current [mA]	Package Outline
	Typ.	Max.	Min.	Typ.				
MGF4921AM■	0.35	0.55	11.5	13.0	4	2	15	GD-30
MGF4934CM	0.50	0.75	11.5	13.0	12	2	10	GD-30
MGF4935AM	0.45	0.65	11.0	12.0	12	2	10	GD-30
MGF4937AM	0.35	0.50	11.5	13.0	12	2	10	GD-30
MGF4938AM	0.32	0.47	11.0	12.5	12	2	10	GD-30
MGF4965BM	0.95	1.25	9.5	11.5	20	2	10	GD-30

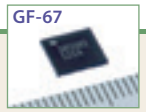
Ta=25°C ■: AEC-Q101 qualified

InGaP HBT FOR SMALL SIGNAL AMPLIFIERS (Discrete)

Type Number	Output Power at 1dB Gain Compression [dBm]		Linear Power Gain [dB]	Frequency [GHz]	Drain-Source Voltage [V]	Drain Current [mA]	Package Outline
	Min.	Typ.					
MGF3022AM■	14.0	16.5	18.0	2.4	3	33	GD-30

Ta=25°C ■: AEC-Q101 qualified

GaN HEMT SERIES FOR MOBILE COMMUNICATION BASE TRANSCEIVER STATION



Type Number	Output Power [dBm]	Linear Power Gain [dB]	Power Added Efficiency [%]	Frequency [GHz]	Drain-Source Voltage [V]	Thermal Resistance [°C/W]		Package Outline
						Typ.	Max.	
MGFS37G38L2	37	20	67	3.4~3.8	50	–	13.5	GF-67

Ta=25°C

GaN HEMT SERIES FOR SATELLITE COMMUNICATION (Internally Matched)

Type Number	Output Power [dBm]	Linear Power Gain [dB]	3rd Order IM Distortion [dBc]		Power Added Efficiency [%]	Frequency [GHz]	Drain-Source Voltage [V]	Drain Current [A]	Thermal Resistance [°C/W]		Package Outline
			Min.	Typ.					Typ.	Max.	
MGFK50G3745	50	10	-25	–	30	13.75~14.5	24	2.4	0.4	0.6	GF-69
MGFK50G3745A**	50	10	-25	–	30	13.75~14.5	24	2.4	0.4	0.6	GF-69
MGFK48G3745	48.3	12	-25	–	33	13.75~14.5	24	1.44	0.8	1	GF-68
MGFK48G3745A*	48.3	11	-25	–	31	13.75~14.5	24	1.44	0.8	1	GF-68
MGFG5H1503	43	24	-25	–	20	13.75~14.5	24	2.7	1.2	1.5	GF-65

Ta=25°C ★: New product (Multi carrier operable) ★★: Under development (Multi carrier operable)

TYPE NAME DEFINITION OF HIGH FREQUENCY DEVICES

Discrete

MGF 49 21 A M
A B C D

- A Device Structure — 3x:HBT, 4x:HEMT
- B Chip Type
- C Series Number
- D Auxiliary Symbol

For Mobile Communication Base Transceiver Station

MGF S 37 G 38 L 2
A B C D E F

- A Freq. Band — S:S-band
- B Output Power in dBm — ex.37=37dBm
- C Device Structure — G:GaN HEMT
- D Freq. Band in GHz — ex.38=~3.8GHz
- E Package — L:QFN
- F Input / Output Pair — ex.2=Input / Output 2 Pairs

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=50dBm=100W(typ.)
- C Device Structure — G:GaN HEMT
- D Freq. Band in GHz — ex.3745=13.75~14.5GHz

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 Semiconductors & Devices Website

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eco Changes **for a greener tomorrow**

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

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