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No. 3567

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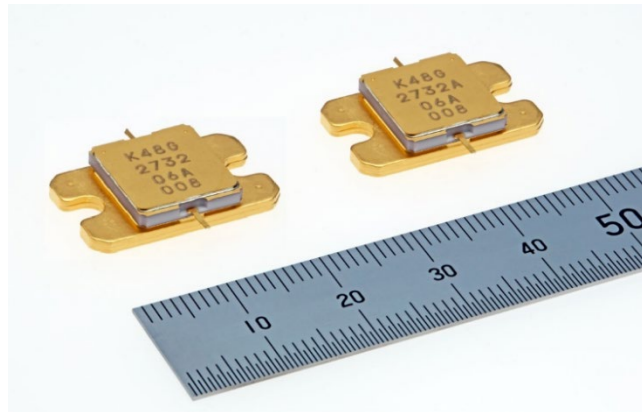
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Mitsubishi Electric to Expand Range of Ku-band GaN-HEMT Lineup

Accommodates Low-Ku band, extra-large data capacity and small SATCOM earth stations



GaN HEMTs for Low-Ku band SATCOM earth stations
Single-carrier 70W MGFK48G2732 (left) and multi-carrier 70W MGFK48G2732A (right)

TOKYO, December 22, 2022 – [Mitsubishi Electric Corporation](https://www.mitsubishielectric.com) (TOKYO: 6503) announced today that two new 12.75-13.25 GHz (Low-Ku band) 70W (48.3dBm) gallium-nitride high-electron-mobility transistors (GaN HEMTs) will be added to the company's GaN HEMT lineup for satellite-communication (SATCOM) earth stations. The two GaN HEMT products, one for multi-carrier¹ communications and the other for single-carrier² communications, support increased data-transmission capacity and smaller earth stations even in the Low-Ku band. The two products will be launched on January 15, 2023.

Ku-band satellite communication systems are increasingly being deployed for emergency communications during natural disasters as well as for satellite news gathering (SNG) by TV broadcasters in rural areas where fiber and/or cable networks are not available. For SATCOM earth stations, current mainstream systems use a 14 GHz band, but in the near future they are expected to use the Low-Ku (13 GHz) band as well as the Ka (28 GHz) band to address needs for increased data-transmission capacity. Until now, Mitsubishi Electric has offered a lineup of seven GaN HEMTs for multi-carrier and single-carrier SATCOM earth stations. The two new 70W GaN HEMTs now being introduced will also support emergency communications and SNG in the Low-Ku band.

¹ Voice, video and data communication method that uses carrier signals of various frequencies

² Communication method that uses a single-frequency carrier signal

Product Features

- 1) **Expanded GaN HEMT lineup will support spread of SATCOM-based emergency systems and SNGs**
 - The additional two 70W GaN HEMTs will facilitate various kinds of satellite communications in the Low-Ku band envisioned in the near future.
- 2) **Adopt same small package used for 14 GHz band**
 - Both two products deliver output power as high as 70W, which will help to downsize earth stations.
- 3) **Maintain low IMD3 even at wide offset frequencies of up to 400MHz**
 - The MGFK48G2732A for multi-carrier communications delivers IMD3³ of less than -25dBc at wide offset frequencies⁴ of up to 400MHz, thereby addressing multi-carrier communication requirements.

Main Specifications

Model	MGFK48G2732A	MGFK48G2732
Frequency	12.75–13.25GHz	
Saturated output power	48.3dBm (70W)	
Offset frequency @IMD3 = -25dBc	Up to 400MHz	Up to 5MHz
Application	Multi-carrier	Single-carrier
Release	Jan. 15, 2023	

Product Lineup

Multi-carrier communication (new model in bold)

Model	MGFK48G2732A	MGFK45G3745A	MGFK48G3745A	MGFK50G3745A
Frequency	12.75–13.25GHz	13.75GHz–14.5GHz		
Saturated output power	48.3dBm (70W)	45.3dBm (30W)	48.3dBm (70W)	50.0dBm (100W)
Linear gain	11dB	9.5dB	11dB	10dB
Offset frequency	Up to 400MHz	Up to 400MHz	Up to 400MHz	Up to 200MHz

Single-carrier communication (new model in bold)

Model	MGFK48G2732	MGFK45G3745	MGFK48G3745	MGFK50G3745	MGFG5H1503
Frequency	12.75–13.25GHz	13.75GHz–14.5GHz			
Saturated output power	48.3dBm (70W)	45.3dBm (30W)	48.3dBm (70W)	50.0dBm (100W)	43dBm (20W)
Linear gain	12dB	9.5dB	12dB	10dB	24dB
Offset frequency	Up to 5MHz	Up to 5MHz	Up to 5MHz	Up to 5MHz	Up to 5MHz

Note: These products are based on results obtained from a project subsidized by the New Energy and Industrial Technology Development Organization (NEDO)

Future Developments

In addition to the 14GHz band, Mitsubishi Electric will expand its low-Ku band product lineup to contribute to the further downsizing of satellite-communication earth stations.

³ Frequency difference between two-tone signals, used in IMD3 measurements

⁴ Third-order intermodulation distortion, a measure of amplifier distortion in the case of two-tone signals

Environmental Awareness

These products are compliant with the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) directive 2011/65/EU and (EU) 2015/863.

Reference Websites

Semiconductors & Devices:

<https://www.MitsubishiElectric.com/semiconductors/>

Product information:

<https://www.MitsubishiElectric.com/semiconductors/products/hf/gantransistor/index.html#satellite>

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About Mitsubishi Electric Corporation

With more than 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Mitsubishi Electric enriches society with technology in the spirit of its “Changes for the Better.” The company recorded a revenue of 4,476.7 billion yen (U.S.\$ 36.7 billion*) in the fiscal year ended March 31, 2022. For more information, please visit www.MitsubishiElectric.com

*U.S. dollar amounts are translated from yen at the rate of ¥122=U.S.\$1, the approximate rate on the Tokyo Foreign Exchange Market on March 31, 2022