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 information and communication era by providing GaN/GaAs products.

### GaAs HEMT SERIES FOR MICROWAVE-BAND LOW-NOISE AMPLIFIERS

*(Discrete)*

<table>
<thead>
<tr>
<th>General Use</th>
<th>2.4GHz</th>
<th>4GHz</th>
<th>12GHz</th>
<th>20GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise Figure NF [dB]</td>
<td>0.2</td>
<td>0.4</td>
<td>0.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Gain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Application
- General Use
- Satellite Broadcasting
- Communication Receiver

---

### InGaP HBT FOR SMALL SIGNAL AMPLIFIERS

*(Discrete)*

<table>
<thead>
<tr>
<th>General Use</th>
<th>18</th>
<th>14</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Power [dBm]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

### GaN HEMT SERIES FOR MICROWAVE-BAND HIGH POWER AMPLIFIERS

#### For Mobile Communication Base Transceiver Station

**3.5GHz Band**

<table>
<thead>
<tr>
<th>Multi-carrier communications</th>
<th>Single-carrier communications</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGFK50G3745A**</td>
<td>MGFK50G3745</td>
</tr>
<tr>
<td>MGFK48G2732A** / MGFK48G3745A</td>
<td>MGFK50G2732** / MGFK48G3745</td>
</tr>
<tr>
<td>MGFK45G3745A</td>
<td>MGFK45G3745</td>
</tr>
</tbody>
</table>

#### For Satellite Communication (Internally Matched)

**Ku Band (12.75-13.25GHz / 13.75-14.5GHz)**

- MGFS37G38L2

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### PACKAGE OUTLINE DRAWING

*(only Top View side)*

- **GD-30**
  - Unit: mm
  - Pin No.
    - 1: Gate
    - 2: Source (Flange)
    - 3: Drain

- **GF-67**
  - Pin No.
    - 1: RF in/Vg1
    - 2: N/C
    - 3: RF in/Vg2
    - 4: RF out/Vd1
    - 5: N/C
    - 6: RF out/Vd2

- **GF-65**
  - Pin No.
    - 1: VdB
    - 2: Vd1
    - 3: Vd2
    - 4: Vd3
    - 5: Pout
    - 6: VgB1
    - 7: Vl
    - 8: Pin
    - 9: Source

---

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.
### PRODUCT LIST

#### GaN HEMT SERIES
FOR MOBILE COMMUNICATION BASE TRANSCEIVER STATION

<table>
<thead>
<tr>
<th>Type Number</th>
<th>Noise Figure (dB)</th>
<th>Associated Gain (dB)</th>
<th>Frequency (GHz)</th>
<th>Drain-Source Voltage [V]</th>
<th>Drain Current [mA]</th>
<th>Package Outline</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGF4921AM*</td>
<td>0.35</td>
<td>0.55</td>
<td>11.5</td>
<td>13.0</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>MGF4934CM</td>
<td>0.50</td>
<td>0.75</td>
<td>11.5</td>
<td>13.0</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>MGF4935AM</td>
<td>0.45</td>
<td>0.65</td>
<td>11.0</td>
<td>12.0</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>MGF4937AM</td>
<td>0.35</td>
<td>0.50</td>
<td>11.5</td>
<td>13.0</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>MGF4938AM</td>
<td>0.32</td>
<td>0.47</td>
<td>11.0</td>
<td>12.5</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>MGF4965BM</td>
<td>0.95</td>
<td>1.25</td>
<td>9.5</td>
<td>11.5</td>
<td>20</td>
<td>2</td>
</tr>
</tbody>
</table>

Ta=25°C ■ AEC-Q101 qualified

#### InGaP HBT
FOR SMALL SIGNAL AMPLIFIERS (Discrete)

<table>
<thead>
<tr>
<th>Type Number</th>
<th>Output Power at 1dB Gain Compression (dBm)</th>
<th>Linear Power Gain (dB)</th>
<th>Frequency (GHz)</th>
<th>Drain-Source Voltage [V]</th>
<th>Drain Current [mA]</th>
<th>Package Outline</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGF3022AM*</td>
<td>14.0</td>
<td>16.5</td>
<td>18.0</td>
<td>2.4</td>
<td>3</td>
<td>33</td>
</tr>
</tbody>
</table>

Ta=25°C ■ AEC-Q101 qualified

#### GaN HEMT SERIES
FOR MOBILE COMMUNICATION BASE TRANSCEIVER STATION

<table>
<thead>
<tr>
<th>Type Number</th>
<th>Output Power (dBm)</th>
<th>Linear Power Gain (dB)</th>
<th>Power Added Efficiency [%]</th>
<th>Frequency (GHz)</th>
<th>Drain-Source Voltage [V]</th>
<th>Thermal Resistance (°C/W)</th>
<th>Package Outline</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGF537G38L2</td>
<td>37</td>
<td>20</td>
<td>67</td>
<td>3.4~3.8</td>
<td>50</td>
<td>–</td>
<td>13.5</td>
</tr>
</tbody>
</table>

Ta=25°C

#### GaN HEMT SERIES
FOR SATELLITE COMMUNICATION (Internally Matched)

**Multi-carrier communications Ku-band GaN-HEMTs**

<table>
<thead>
<tr>
<th>Type Number</th>
<th>Output Power (dBm)</th>
<th>Linear Power Gain (dB)</th>
<th>Power Added Efficiency [%]</th>
<th>Offset Frequency</th>
<th>Frequency (GHz)</th>
<th>Drain-Source Voltage [V]</th>
<th>Drain Current [mA]</th>
<th>Thermal Resistance (°C/W)</th>
<th>Package Outline</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGF4K8G2732A**</td>
<td>48.3</td>
<td>11</td>
<td>31</td>
<td>~400MHz</td>
<td>12.75~13.25</td>
<td>24</td>
<td>1.44</td>
<td>0.8</td>
<td>1</td>
</tr>
<tr>
<td>MGF5K0G3745A**</td>
<td>50</td>
<td>10</td>
<td>30</td>
<td>~200MHz</td>
<td>13.75~14.5</td>
<td>24</td>
<td>2.4</td>
<td>0.4</td>
<td>0.6</td>
</tr>
<tr>
<td>MGF4K5G3745A</td>
<td>48.3</td>
<td>11</td>
<td>31</td>
<td>~400MHz</td>
<td>13.75~14.5</td>
<td>24</td>
<td>1.44</td>
<td>0.8</td>
<td>1</td>
</tr>
<tr>
<td>MGF4K5G3745A*</td>
<td>45.3</td>
<td>9.5</td>
<td>30</td>
<td>~400MHz</td>
<td>13.75~14.5</td>
<td>24</td>
<td>0.72</td>
<td>1.6</td>
<td>2</td>
</tr>
</tbody>
</table>

**Single-carrier communications Ku-band GaN-HEMTs • MMIC**

<table>
<thead>
<tr>
<th>Type Number</th>
<th>Output Power (dBm)</th>
<th>Linear Power Gain (dB)</th>
<th>Power Added Efficiency [%]</th>
<th>Frequency (GHz)</th>
<th>Drain-Source Voltage [V]</th>
<th>Drain Current [mA]</th>
<th>Thermal Resistance (°C/W)</th>
<th>Package Outline</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGF4K8G2732**</td>
<td>48.3</td>
<td>12</td>
<td>33</td>
<td>~5MHz</td>
<td>12.75~13.25</td>
<td>24</td>
<td>1.44</td>
<td>0.8</td>
</tr>
<tr>
<td>MGF5K0G3745S</td>
<td>50</td>
<td>10</td>
<td>30</td>
<td>~5MHz</td>
<td>13.75~14.5</td>
<td>24</td>
<td>2.4</td>
<td>0.4</td>
</tr>
<tr>
<td>MGF4K8G3745S</td>
<td>48.3</td>
<td>12</td>
<td>33</td>
<td>~5MHz</td>
<td>13.75~14.5</td>
<td>24</td>
<td>1.44</td>
<td>0.8</td>
</tr>
<tr>
<td>MGF4K5G3745</td>
<td>45.3</td>
<td>9.5</td>
<td>31</td>
<td>~5MHz</td>
<td>13.75~14.5</td>
<td>24</td>
<td>0.72</td>
<td>1.6</td>
</tr>
<tr>
<td>MGF5G5H1503</td>
<td>43</td>
<td>24</td>
<td>20</td>
<td>~5MHz</td>
<td>13.75~14.5</td>
<td>24</td>
<td>2.7</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Ta=25°C ● New product   ●● Under development

#### TYPE NAME DEFINITION OF HIGH FREQUENCY DEVICES

**For Mobile Communication Base Transceiver Station**

MGF S 37 G 38 L 2
- Device Structure: S-HEMT
- Freq. Band: 37GHz
- Output Power in dBm: ex. 37dBm
- Device Structure: G-GaN HEMT
- Freq. Band: 38GHz
- Output Power in dBm: ex. 38dBm

**For Satellite Communication** (Internally Matched)

MGF K 50 G 3745
- Device Structure: K-Ku-band
- Freq. Band: 50GHz
- Output Power in dBm: ex. 50dBm
- Device Structure: G-GaN HEMT
- Freq. Band: 37GHz
- Output Power in GHz: ex. 37GHz

Ta=25°C

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**Notes:**
- New product
- Under development
- Ta=25°C
- AEC-Q101 qualified
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