Submillimeter-wave ICs and modules

Extremely low noise at high bandwidth

We offer transmission and receiver circuits with low noise, high bandwidths and low power consumption. Our metamorphic InGaAs-based MMICs set new standards with a noise figure of only 6 dB at 340 GHz and operating frequencies of up to 670 GHz. The production of transmission amplifiers up to 200 GHz is based on high-performance GaN technology on silicon carbide substrates.

Features

- Power generation in the W-band with $P_{\text{sat}} > 1$ W
- Amplifiers at 180 GHz with $P_{\text{sat}} > 50$ mW
- Amplifier modules in the W-band with a noise figure of 2 dB
- Waveguide modules at 340 GHz with a noise figure of 7 dB or with an output power of > 10 dBm
- Single-chip transmission and receive channels up to 440 GHz with operating bandwidths > 50 GHz

Technology

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<tr>
<th>Technology</th>
<th>Gate Length</th>
<th>Features</th>
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<td>Metamorphic HEMT process</td>
<td>50 nm</td>
<td>InAlAs/InGaAs IC process on GaAs substrates with $f_{\text{max}} &gt; 500$ GHz</td>
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<tr>
<td>Metamorphic HEMT process</td>
<td>35 nm</td>
<td>InAlAs/InGaAs IC process on GaAs substrates with $f_{\text{max}} &gt; 1000$ GHz</td>
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<td>GaN25 HEMT</td>
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<td>AlGaN/GaN IC process on SiC substrates for the development of powerbars and MMICs in the frequency range of approx. 20 GHz</td>
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<td>GaN10 HEMT</td>
<td>100 nm</td>
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Contact

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