United Monolithic Semiconductors

# Produits et Technologies GaN à UMS

# OUTLINE

- UMS is addressing GaN Markets with
- Two proprietary GaN Technologies: GH50 and GH25, and offers three Product line solutions:
  - The General Purpose transistors
  - The Quasi -MMICs ±Internally -Matched
  - The MMICs
- And its GaN Foundry services
- Conclusion: UMS GaN Flexible Offer



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# UMS addressed Markets using GaN

## Defence & Security

- Phased Array Radar
- Electronic Warfare
- Communications

## Space

- Communications
- Earth Observation
- Scientific Missions

## Telecom

- Point to Point
- VSAT Terminal
- Base Stations



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# GaN technologies in UMS ±GH50

## GH50 : High Power Technology from VHF to C band

- Main Features
  - 3-inch / 100µm SiC / Via holes
  - 0.5µm gate length
  - Very High breakdown voltage: $V_{bds}$ > 200V
  - Operating Voltage up to 50V
  - Power density > 5W/mm
  - Discrete transistors & power bars
- Status
  - On-going production (> several hundred wafers)
  - Space Evaluated, in EPPL list (FMs in development)
  - Design kit for products (unit power cell & packaged devices)
- Products
  - General Purpose Unmatched Transistors
  - Internally Pre-matched & Matched Transistors: hybrid & Quasi-MMIC



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# GaN technologies in UMS ±GH25

## GH25 : High Power Technology up to Ku band

- Main Features
  - 4-inch / 100µm SiC / Via holes
  - 0.25µm gate length
  - High breakdown voltage: $V_{bds}$ > 120V
  - Operating Voltage up to 30V
  - Power density > 4W/mm
  - MMICs, discrete transistors & power bars
- Status
  - Qualified
  - Design kit available
- Products
  - MMICs
  - Internally Pre-matched & Matched Transistors: hybrid & Quasi-MMIC



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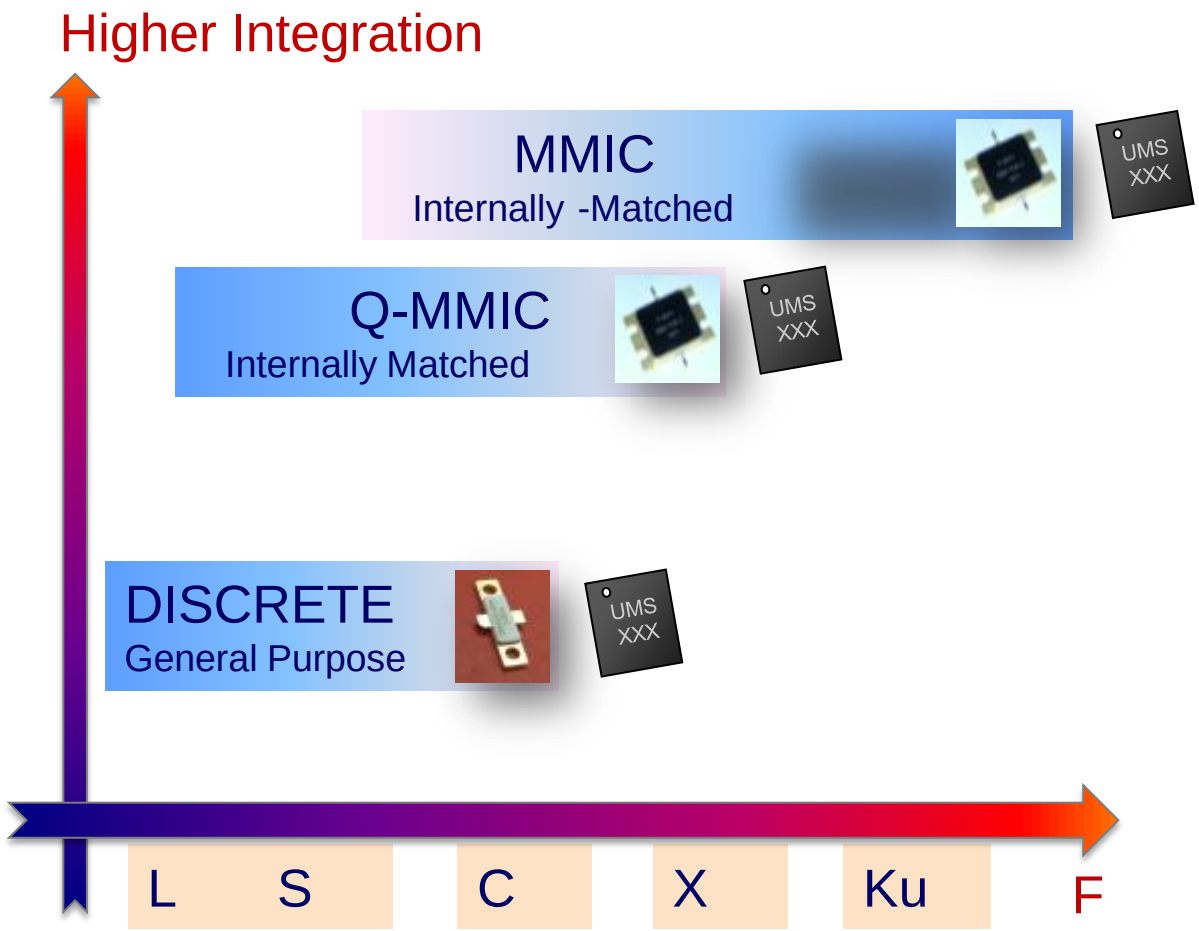
# Product Solutions

## Product solutions for RF Power Applications



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# General Purpose Transistors

Date / Ref doc

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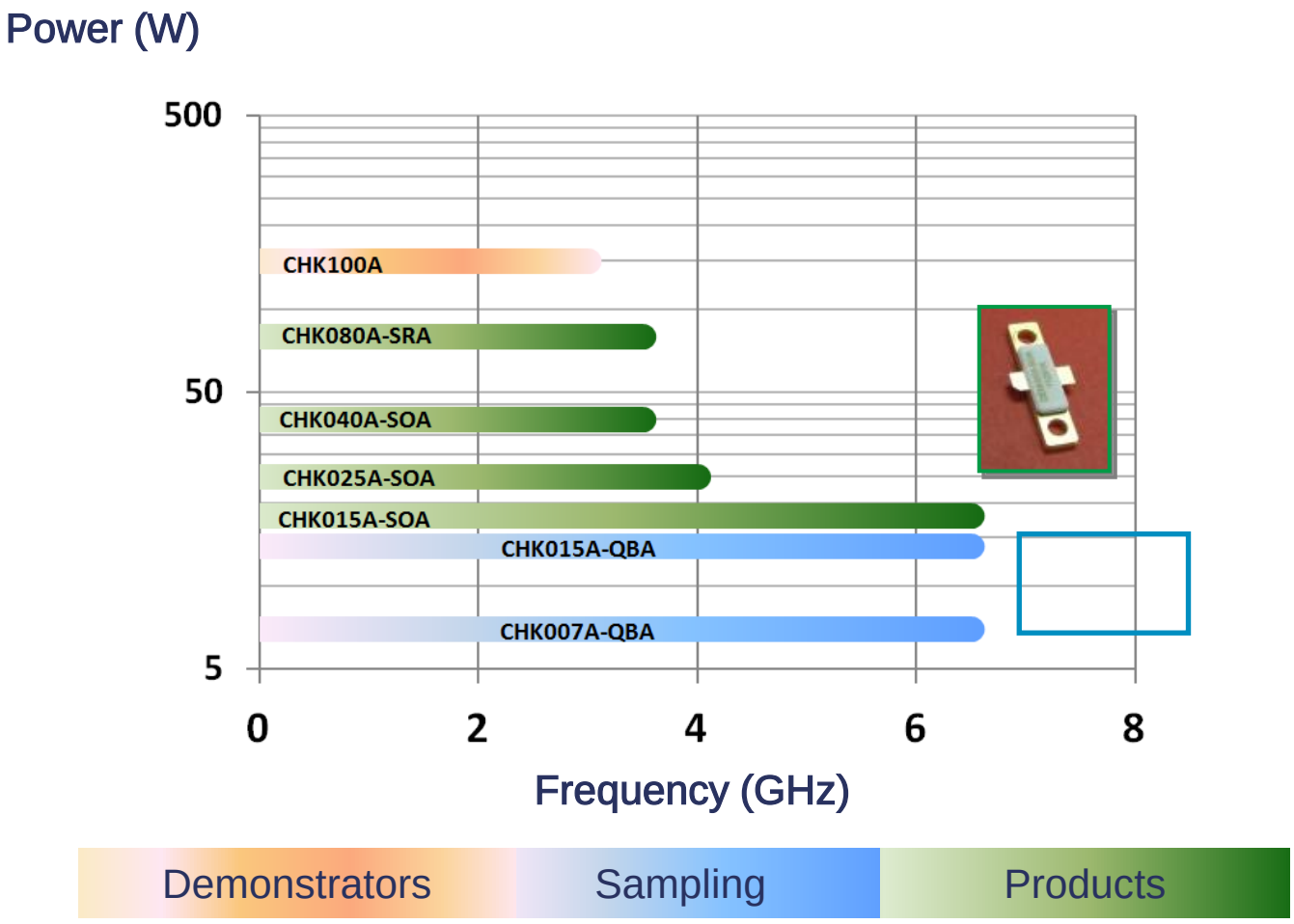
# General Purpose Transistors

## Develop ment Status



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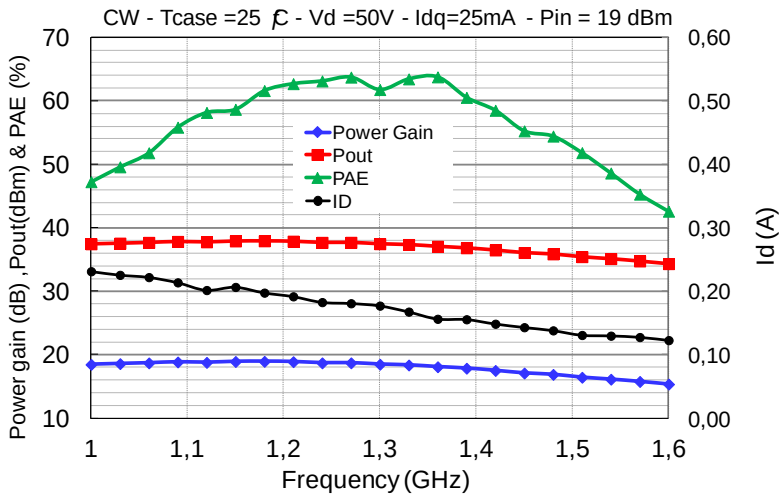
# 7W & 15W L to C-band / CHK007 / CHK015

## New Product / L & C - band Characterizations

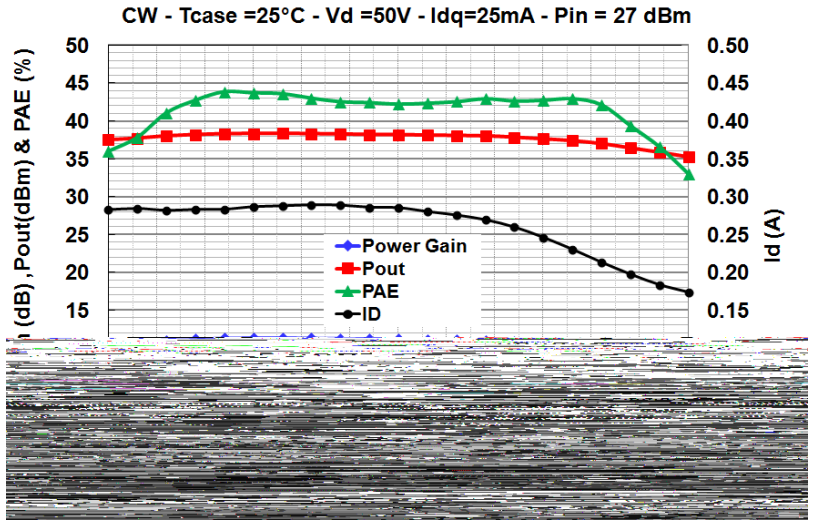
- Frequency band : up to 6 GHz optimized for pulsed operation
- Operating Voltage : 50V / Idq = 0.05A / 0.1A
- GH50 / Unmatched
- DFN 3x4 package

**Sampling Q2 2015**

### Typical board measurement in L Band




### Typical board measurement in C Band



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