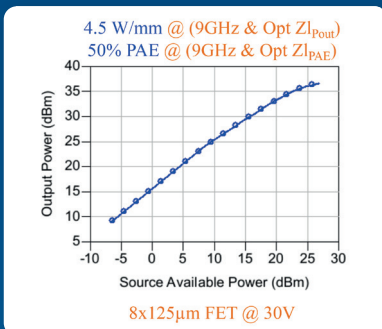
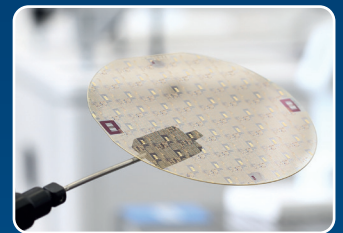


## 0.25µm GaN HEMT MMIC process



**GH25-10 Gallium Nitride process can now be used up to 37V! GH25 is optimized for high power amplification up to 20GHz.**

Supported by a thermally dissipative SiC substrate, the GH25 power density reaches **5 W/mm** at 37V. This MMIC process includes MIM capacitors, inductors, air bridges, metallic resistors, via through the substrate and two metal layers for interconnections. The good HEMT noise performance also allows the design of LNAs up to 20GHz. The BCB option is also available as mechanical protection for plastic molded packaging



### GH25 is the ideal process to design

- High power amplifiers
- Robust LNA
- High Power switches

### Applications targeted with GH25:

- Telecommunication
- Satcom
- Electronic Warfare
- Radar

Process Design Kits (PDK) include non-linear electro-thermal models, noise model, diodes & switches models, passive models, all with associated library elements.

### Process main features

Element	Typical Value
V <sub>t</sub>	-3,5V
I <sub>dss</sub>	880mA/mm
I <sub>ds+</sub>	1A/mm
G <sub>m</sub>	290mS/mm
V <sub>bds</sub>	>100 Volts
V <sub>dsDC</sub>	37V max all conditions
Nf / G <sub>ass</sub>	1.8dB / 11dB @ 15GHz
F <sub>max</sub>	above 50GHz
MIM density	255pF/mm <sup>2</sup>
Metallic resistors	30 and 1000 Ohms/sq
Via-holes	available on 100µm substrate thickness



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# Who better than our customers can speak about GH25 ?

““ Reliable models. We were pleased to find an excellent agreement between simulations and measurement results.  
Professional Test Jig design and qualification test services. Very pleased by the quality of service.””

*Maurizio Cirillo, Head of RF & Microwave Hardware Development - Rheinmetall Italia S.p.A*

““ The UMS PDK for GH25 facilitated a first pass success of a 10W K-band HPA. Correlations between measured and simulated results were excellent for both small and large signal conditions.””

*Thomas Young,  
Senior MMIC Designer – Arralis*

““ Thanks to the high-performance GH25 process and its very accurate and complete in-house models with a user-friendly interface, all the targeted performances of our X and wideband band HPAs have been achieved with only one run.””

*Components Team  
THALES DMS*

““ We experienced several designs based on GH25 GaN process with nice measured results. Good 'simulation / measurement' agreements are obtained thanks to the electrical modeling accuracy and the useful help and guidelines given by UMS.””

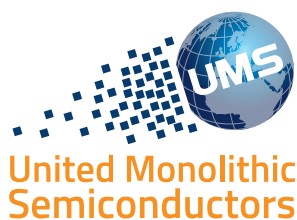
*D. Langrez, Head of MMIC Design Team,  
Thales Alenia Space - France*

““ GH25 PDK comes with a comprehensive set of reliable actives and passives models for the design of state-of-the-art broadband PAs. UMS foundry service supports the designer throughout post-layouting phase, from DRC analysis to process yield optimization.””

*Diego Palombini, PhD,  
Microwave Engineer  
Elettronica S.p.A.*

““ We used the UMS GH25 technology to deliver a 40W transmit/receive MMIC for a European space project. We observed good agreement between measured results and the foundry models.””

*Senior Engineer  
VIPER RF*



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