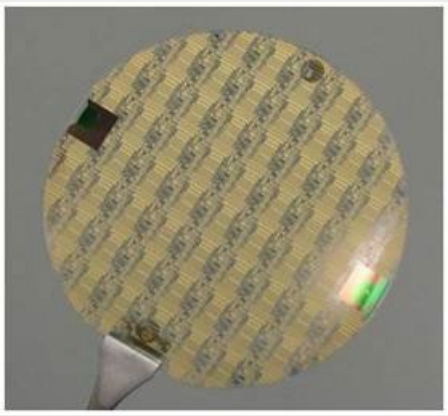
Foundry Process Data Sheet

United Monolithic Semiconductors

GH10-10



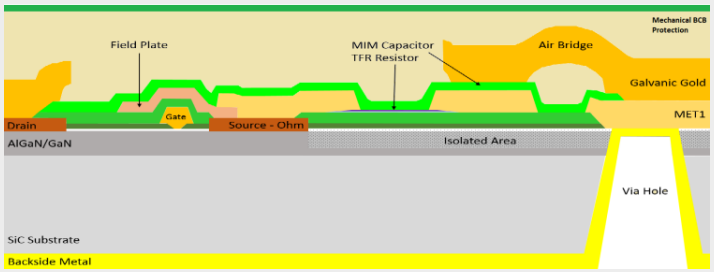
Description

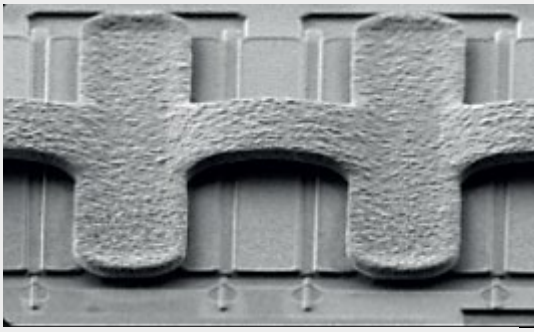
This 0.10µm HEMT process is optimized for high power applications up to 60GHz and more. The good HEMT noise performance allows also LNA design.

The process includes two metal interconnect layers, precision TaN resistors, high values TiWSi resistors, MIM capacitors with standard and high density, air-bridges and via-holes through the substrate.

Main Features

- 0.10µm GaN on SiC HEMT process
- Power density: 3W/mm
- TaN and TiWSi resistors
- M.I.M. capacitors & inductors
- Air bridges
- Via-holes
- Operation Vds= 15V
- Vbds > 60V
- Wafer thickness: 50µm
- Wafer diameter: 100mm





Design Kit Characteristics

- Available for ADS by Keysight and Microwave Office by Cadence
- Non-linear electro-thermal model for HPA design
- Noise model for LNA design
- Switch models
- Scalable models for passive and active devices.

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Electrical Characteristics

ELEMENT / Parameters	Min	Typ	Max	Units	Conditions
FET /					
Threshold voltage Vp	-3.2	-2.6	-2	V	Vds=7.0V Ids=Idss/100
Transconductance Gm	460	540	-	mS/mm	Vds=7.0V, Vgs=V_{GMMax}
Saturation current Idss	1450	1575	1700	mA/mm	Vds=7.0V, Vgs=3V
Coplanar FET (2x75µm) equivalent circuit					
Transconductance Gme	35	40	45	mS	Vds=7V, 200mA/mn
Input capacitance Cin	70	85	100	fF	Vds=7V, 200mA/mn
Feedback capacitance Cf	11	14	17	fF	Vds=7V, 200mA/mn
TaN RESISTOR /					
sheet resistance	26	30	34	Ω/square	
MIM CAPACITOR /					
Standard Density High Density	160 330	175 355	190 380	pF/mm2	
TiWSi RESISTOR /					
sheet resistance	800	1000	1200	Ω/square	

Ordering Information

Visit our Website for more info: http://www.ums-rf.com

Please contact our Sales at: marketing.sales@ums-rf.com & Tel: +33 1 69 86 32 00 / Fax: + 33 1 69 86 34 34

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