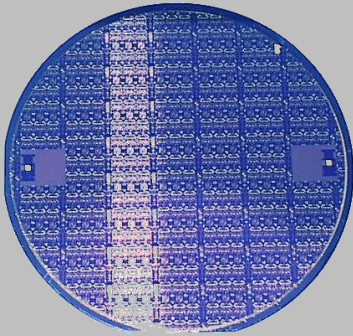


PPH25

0.25 μ m power pHEMT



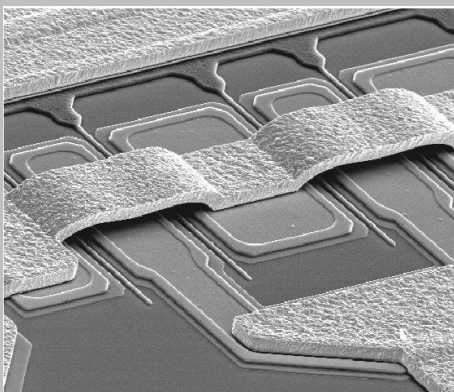
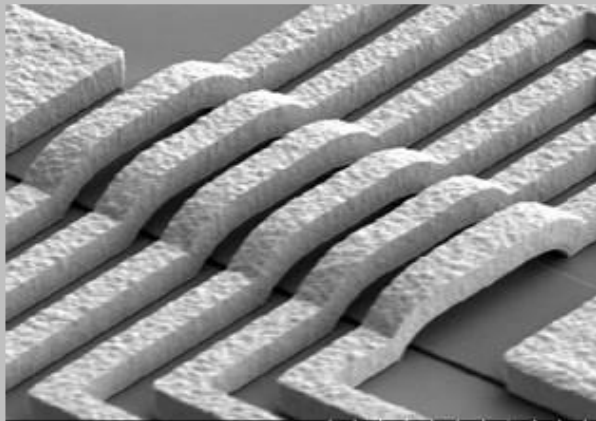
Description

The 0.25 μ m pHEMT process is optimized for power and multipurpose up to 40GHz. The process includes two metal interconnect layers, precision TaN resistors, high values TiWSi resistors, MIM capacitors, air-bridges and via-holes through the substrate.

Overcoating layer is available as an option.

Main Features

- 0.25 μ m pHEMT process
- Typical Ft: 50GHz
- TaN and TiWSi resistors
- GaAs resistors
- M.I.M. capacitors
- Air bridges
- Via-holes
- Operation Vds= 6V
- Wafer thickness: 100 μ m
- Wafer diameter: 100mm



Design Kit Characteristics

- Available for ADS from Keysight and MWO from AWR
- DRC on line with ADS DK
- Schematic entry with autolayout generation
- Scalable models for passive devices
- Scalable non-linear models for FET
- Scalable models for series and parallel switch configuration
- Data for spread analysis

Electrical Characteristics

ELEMENT / Parameters	Min	Typ	Max	Units	Conditions
FET /					
Threshold voltage V_p	-1.2	-0.9	-0.7	V	$V_{ds}=2.5V, I_{ds}=I_{dss}/100$
Transconductance G_m	370	430	-	mS/mm	$V_{ds}=2.5V, V_{gs}=0V$
Saturation current I_{dss}	250	325	400	mA/mm	$V_{ds}=2.5V, V_{gs}=0V$
Breakdown voltage V_{bds}	12	13	-	V	$I_{ds}= I_{dss}/100$

Coplanar FET (2x75µm) equivalent circuit

Transconductance G_{me}	50	60	75	mS	$V_{ds}=3.0V, V_{gs}=0V$
Input capacitance C_{in}	140	170	200	fF	$V_{ds}=3.0V, V_{gs}=0V$
Feedback capacitance C_f	9	12	15	fF	$V_{ds}=3.0V, V_{gs}=0V$
Output resistance R_{out}	550	750	950	Ω	$V_{ds}=3.0V, V_{gs}=0V$

TaN RESISTOR /

sheet resistance	26	30	34	Ω/square	
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MIM CAPACITOR /

density	220	250	280	pF/mm ²	@1MHz
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TiWSi RESISTOR /

sheet resistance	800	1000	1200	Ω/square	
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GaAs RESISTOR

Ohmic contact resistance	-	0.15	0.3	Ω.mm	
GaAs sheet resistance	85	95	105	Ω/square	

Ordering Information

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

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