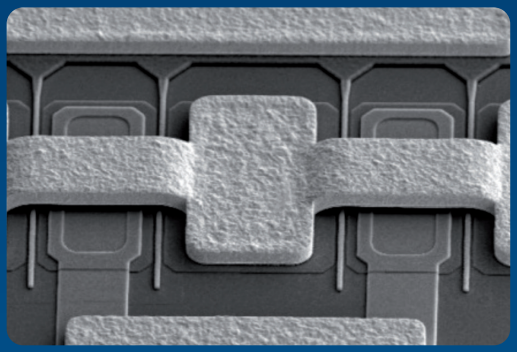
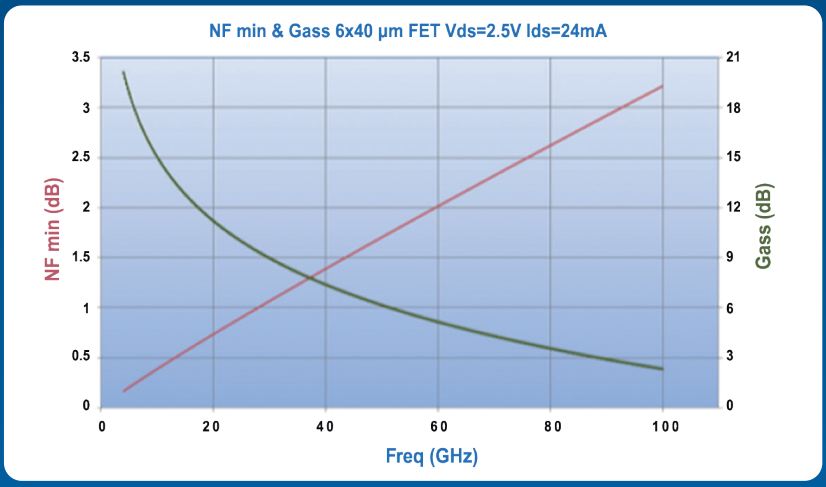
United Monolithic Semiconductors

PH10 TECHNOLOGY

The UMS 0.1µm GaAs Very High Frequency pHEMT Process

PH10 process is optimised for low noise amplification up to 110GHz with a typical Ft of 130GHz, a power density above 300mW/mm at 3V and a typical noise figure of 2.3dB @ 70GHz. It includes two metal interconnect layers, precision TaN resistors, high values TiWSi resistors, MIM capacitors, air-bridges, via-holes and gold plated back side. PH10 is available with BCB encapsulation.





PH10 offers a very wide range of applications among them:

- E-Band point-to-point communication
- W-Band radar
- Fiber Optics
- Security sensors
- Space instrumentation
- …

Process main characteristics

Element	Parameter	Typical Value	Condition
FET	Idss (mA/mm)	280	Vds=2.0V, Gm_max
	Gm_max (mS/mm)	725	Vds=2.0V, Gm_max
	Vbds (V)	6	Ids= Idss/100
	Noise Figure (dB)	2.3	@ 70GHz
MIM Capacitor	Density (pF/mm2)	330	@ 1MHz
Resistor	TaN	30	Ohms/sq
	TiWSI	1000	Ohms/sq
	GaAs	120	Ohms/sq
Substrate	Thickness	70	µm

Typical UMS product references are:

- LNA 71-86GHz: CHA2080-98F
- MPA 71-76GHz: CHA3080-98F
- MPA 81-86GHz: CHA3090-98F
- Down-converter CHR1080a98F

Build your own solution with UMS

www.ums-rf.com

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