

## Take advantage of wideband, low noise Medium power UMS PH10 GaAs process

United Monolithic Semiconductors is opening a **shared foundry run on PH10 GaAs process**.  
The launch date for the Multi-Project Wafer is **June 23, 2023**

**PH10** PHEMT GaAs process is optimized for the production of low noise, wideband and medium power amplifier MMICs operating up to 110GHz.

Designers using **PH10** can design Low Noise, Variable Gain Amplifiers, Medium Power Amplifiers, mixers and multi-functions TX and RX MMICs for various applications including E-band Communication radios, Automotive radars, Imaging sensors, Optical fibre communication and Instrumentation.

**PH10** can combine power and low noise performance on a single chip for compact systems with an entry price of 2 100€/mm<sup>2</sup>.

### What are the main characteristics of PH10?

ELEMENT	PARAMETER	VALUE	CONDITIONS
FET	Idss (mA/mm)	280	Vds = 2.0V, Vgs = 0V
	Gm (mS/mm)	750	Vds = 2.0V, Vgs = 0V
	Vbds (V)	6	Ids = Idss / 100
	Vp(V)	-0.45	Vds = 2.0V, Ids = Idss / 100
	Ft (cut off freq.) (GHz)	130	
MIM Cap.	Density (pF/mm <sup>2</sup> )	330	@ 1 MHz
MIM Cap. - High Density	Density (pF/mm <sup>2</sup> )	625	@ 1 MHz
TaN Resistor	Sheet Resistance (Ω/□)	30	
TiWSi Resistor	Sheet Resistance (Ω/□)	1000	
GaAs Resistor	Sheet Resistance (Ω/□)	120	
Wafer thickness	μm	70	

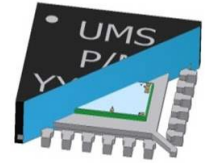
### Examples of microwave performance achieved by UMS catalogue MMICs designed on PH10 process:

Part Number	Freq (GHz)	Gain (dB)	Noise	P-1dB (dBm)	Case
<b>Low noise amplifier</b>					
CHA2080-98F	71-86	22	3.5	11	Die
CHA1008-99F	80-105	17	5	5	Die
<b>Mixer - RX</b>					
CHM1080-98F	71-85	-9		9	Die
CHR1080-98F	71-86	6	5	-	Die

Part Number	Freq (GHz)	Gain (dB)	Noise	P-1dB (dBm)	Case
<b>Medium power amplifier</b>					
CHA3080-98F	71-76	16	4.3	19	Die
CHA3090-98F	81-86	13	4.5	17	Die



By choosing standard MMIC dimensions which are compatible with QFN high volume packaging capability, your project is on track for future industrial success.



### How to participate to this shared foundry run?

So to start designing, please apply [on-line](#) for process Design Kit. Before the deadline, please send your layout to: [foundry@ums-rf.com](mailto:foundry@ums-rf.com)

<b>INFORMATION</b>	<b>Lowest cost guaranteed</b> Simply provide your layout <b>before June 23, 2023</b>				
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<b>DELIVERY</b>	20 chips				
<b>CONDITIONING</b>	Gel-Pak®				

<b>AVAILABLE DIE SIZE (mm)</b>	1	1.4	2.4	3.4	4
<b>MAX RATIO</b>	1:3				

Die size include 70µm dicing street - Launching date flexibility is +/- 2 weeks  
 Minimum order is 4mm<sup>2</sup> - Price is valid until June 23, 2023  
 Order to be placed before June 9, 2023  
 Important Notes:

- UMS may cancel the run in case of insufficient number of participants.
- For some countries a specific dedicated export license may be required before delive

	1	1.4	2.4	3.4	4
1	1	1.4	2.4		
1.4	1.4	2	3.4	4.8	5.6
2.4	2.4	3.4	5.8	8.2	9.6
3.4		4.8	8.2	11.6	13.6
4		5.6	9.6	13.6	16

PH10 Available die size (mm)

### How many dies will I receive and how much does it cost?

You will receive 20 dies of your circuit in Gel-Pak® box from a PH10 PCM good wafer. The price is based on your circuit dimensions on the mask tile multiplied by the mm<sup>2</sup> unit price. For example, if your circuit is 1.4 x 3.4 mm<sup>2</sup>, the price is 1.4 x 3.4 x 2 100€ = 9 996€.

### Which processes are regularly offered in shared foundry?

