

Take advantage of high power & frequencies With **PPH15X-20** pHEMT process at attractive price

UMS is opening a **PPH15X-20 GaAs process shared foundry run**.
The launch date for the Multi-Project Wafer is **October 27, 2023**.

With 800mW/mm power density, **PPH15X-20** high power pHEMT GaAs process allows designers to make High and Medium Power Amplifier MMICs up to 45GHz.

PPH15X-20 is successfully evaluated for Space use and referenced in the European Preferred Part List by the European Space Agency – see: <https://escies.org/eplmanufacturer/show?id=124%20>

You can combine in a single integrated amplifier a high output power with a wide frequency range or achieve above 50% power added efficiency on narrow frequency band at an entry price of 2 750€/mm².

What are the main characteristics of **PPH15X-20**?

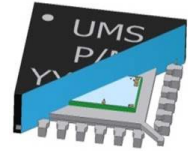
Element	Parameter	Typical value	Conditions
FET	Idss (mA/mm)	350	Vds = 2.0V, Vgs = 0V
	Gm (mS/mm)	440	Vds = 2.0V, Vgs = 0V
	Vbds (V)	14	Ids = Idss / 100
	Vp(V)	-0.95	Vds = 2.0V, Ids = Idss / 100
	Ft (cut off freq.) (GHz)	70	
MIM Cap.	Density (pF/mm ²)	260	@ 1 MHz
MIM Cap. - High Density	Density (pF/mm ²)	625	@ 1 MHz
TaN Resistor	Sheet Resistance (Ω/□)	30	
TiWSi Resistor	Sheet Resistance (Ω/□)	1000	
GaAs Resistor	Sheet Resistance (Ω/□)	100	
Wafer thickness	(μm)	70	

Examples of microwave performance achieved by UMS catalogue MMICs designed on **PPH15X-20** process:

Part Number	Freq (GHz)	Gain (dB)	Output Power (dBm/W)	Output IP3 (dBm)	Process
High power amplifier					
CHA6550-QXG	17-24	22	34 / 2.5	41	PPH15X_20
CHA6552-QXG	21-27.5	22	34 / 2.5	40	PPH15X_20
CHA6553-QXG	27.5-33.5	21	32.5/1.8	38	PPH15X_20
CHA6194-QXG	37-40	20	31/1.2	38	PPH15X_20



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

INFORMATION	Lowest cost guaranteed				
	Simply provide your layout before October 27, 2023				
DELIVERY	20 chips				
CONDITIONING	Gel-Pak®				
AVAILABLE DIE SIZE (mm)	1	1.4	2.4	3.4	4
MAX RATIO	1:3				
Die size include 70µm dicing street - Launching date flexibility is +/- 2 weeks					
Minimum order is 4mm² - Price is valid until October 27, 2023					
Order to be placed before October 13, 2023					
Important Notes:					
<ul style="list-style-type: none"> • UMS may cancel the run in case of insufficient number of participants. • For some countries a specific dedicated export license may be required before delivery. 					

	1,4	2	2,4	3,4	4	4,4
1,4	2	2,8	3,4	4,8	5,6	
2	2,8	4	4,8	6,8	8	8,8
2,4	3,4	4,8	5,8	8,2	9,6	10,6
3,4	4,8	6,8	8,2	11,6	13,6	15
4	5,6	8	9,6	13,6	16	17,6
4,4		8,8	10,6	15	17,6	19,4

PPH15X mask tile with 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 PPH15X-20 PCM good wafer. The price is based on your circuit dimensions on the mask tile multiplied by the mm² unit price. For example, if your circuit is 1.4 x 3.4 mm², the price is 1.4 x 3.4 x 2 750€ = 13 090€.

Which processes are regularly offered in shared foundry?

