

Accessible for universities, research institutes and companies
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mini@sic



Through the *mini@sic* program the EUROPRACTICE IC Service is offering special MPW prototyping conditions to stimulate Academia and publicly funded Research Institutes to prototype small ASIC designs for education or publicly funded research. Through Multi Project Wafer Services, the high cost of a prototype run (masks and wafers) is shared amongst several customers. However for student education or PhD research programs the minimum prototyping charges are still too high. By introducing the *mini@sic* concept on MPW runs EUROPRACTICE is offering considerably lower minimum prototyping charges for small ASIC designs. Academia and Research Institutes will have the possibility to prototype small designs at low prices on selected MPW runs.

ON Semiconductor (formerly AMIS)

	J	F	M	A	M	J	J	A	S	O	N	D
AMIS 0.7μ C07M-D 2M/1P & AMIS 0.7μ C07M-A 2M/1P/Pdiff/HR	30			2		11		27			5	
AMIS 0.5μ C05M-D 3M/1P & AMIS 0.5μ C05M-A 3M/2P/HR					21					1		
AMIS 0.35μ C035M-D 5M/1P & AMIS 0.35μ C035M-A 5M/2P/HR					21					1		
AMIS 0.35μ C035U 4M (3M & 5M optional) only thick top metal		13		10		18			17			3
AMIS 0.7μ C07M-I2T100 100 V - 2M & 3M options	30			2		11		27			5	
AMIS 0.7μ C07M-I2T30 & I2T30E 30 V - 2M	30			2		11		27			5	
AMIS 0.35μ C035 - I3T80U 80 V 4M - 3M optional (5M on special request)	9			2			2			8		
AMIS 0.35μ C035 - I3T50 50 V 4M - 3M optional (5M on special request)		20			14			13			19	
AMIS 0.35μ C035 - I3T25 3.3/25 V 4M (3M & 5M optional) only thick top metal		13		10		18			17			3

austriamicrosystems

	J	F	M	A	M	J	J	A	S	O	N	D
austriamicrosystems 0.35μ CMOS C35B3C3 3M/2P/HR/5V IO			21				16			29		
austriamicrosystems 0.35μ CMOS C35B4C3 4M/2P/HR/5V IO			21				16			29		
austriamicrosystems 0.35μ CMOS C35OPTO 4M/2P/5V IO			21							29		
austriamicrosystems 0.35μ HV CMOS H35 50V 3M & 4M				24							5	
austriamicrosystems 0.35μ SiGe-BiCMOS S35 4M/4P						4					19	
austriamicrosystems 0.18μ CMOS C18 6M or 4M/1P/MIM/1.8V/5V				10						1		
austriamicrosystems 0.18μ HV CMOS H18 6M or 4M/50V/20V/5V/1.8V/MIM				3						1		

LFoundry

	J	F	M	A	M	J	J	A	S	O	N	D
LFoundry LF150 0.15μ CMOS	No MPW runs scheduled as of publishing this price list, as LFoundry LF150 MPW run dates for 2012 not yet confirmed											

IHP

	J	F	M	A	M	J	J	A	S	O	N	D
IHP SGB25V 0.25μ SiGe:C Ft=75GHz@BVCEO 2.4V	2			23				27		29		
IHP SG25H1 0.25μ SiGe:C Ft/Fmax=190GHz/220GHz 5M/MIM	2			23				27		29		
IHP SG25H3 0.25μ SiGe:C Ft/Fmax= 110/180GHz 5M/MIM	2			23				27		29		
IHP SG13S SiGe:C Bipolar/Analog/CMOS Ft/Fmax= 250/300GHz 7M/MIM				10			23					3
IHP SG13C SiGe:C CMOS 7M/MIM				10			23					3
IHP SG13G2 SiGe:C Bipolar/Analog Ft/Fmax= 300/500GHz 5M/MIM							23					3
BEOL SG25 (M1 and Metal Layers Above)			5									
BEOL SG13 (M1 and Metal Layers Above)										5		

Bumping available for all IHP technologies with extra charge, limited to 200 bumps

TSMC	J	F	M	A	M	J	J	A	S	O	N	D
TSMC 0.18 CMOS General Logic or MS/RF (MIM: 2.0 fFum2 / UTM: 20kÅ)		22				20				24		
0.18 CMOS High Voltage Mixed-Signal (CV018LD 1.8/3.3/32V) – to be used in combination with imec SiGeMEMS				25						24		
TSMC 90nm CMOS Low Power MS/RF (12-inch)		29				27				31		
TSMC 65nm CMOS Low Power MS/RF (12-inch)			21							3		

Note : runs in red color are preliminary and can be updated during 2012

options TSMC mini@sic runs	IO	MIM	special remarks
TSMC 0.18μ CMOS general Logic or MS/RF	3.3 V	2 fF	6 metals with UTM (20kA) topmetal
TSMC 0.18 CMOS High Voltage Mixed-Signal (CV018LD 1.8/3.3/32V) – to be used in combination with imec SiGeMEMS	3.3V / 32V	1 fF	4 metals
TSMC 90nm CMOS LP MS RF	2.5V	2 fF	Core : 1.2 V, Metal scheme : 1P9M_6X1N1U
TSMC 65nm CMOS LP MS RF	2.5V	2 fF	Core : 1.2 V, Metal scheme : 1P9M_6X1Z1U_RDL

UMC	J	F	M	A	M	J	J	A	S	O	N	D
UMC L180 Mixed-Mode/RF - 1P6M - 1.8V/3.3V	16			16			23			15		
UMC L130 Mixed-Mode/RF - 1P8M2T - 1.2V/3.3V	16			23			23			22		
UMC L90N Mixed-Mode/RF - 1P9M2T1F - 1.0V/2.5V			12			25				29		
UMC L65N LOGIC/MIXED-MODE65N/RF - LL - 1P8M1T0F1U- 1.2V/2.5V	16				28					15		

Note : runs in red color are preliminary and can be updated during 2012

options UMC mini@sic runs	Core	IO	MIM	topmetal	special remarks
UMC L65N LOGIC/MIXED-MODE65N/RF - LL - 1P8M1T0F1U - 1.2V/2.5V	1.2	2.5V/2.5V_OD3.3V	2fF	32.5kA	Metal-stack "26"
UMC L90N Mixed-Mode/RF - 1P9M2T1F - 1.0V/2.5V	1.0V, 1.2V	2.5V/2.5V_OD3.3V	2fF	32.5kA	SP and LL devices can be used on the same design
UMC L130 Mixed-Mode/RF - 1P8M2T - 1.2V/3.3V	1.2V	3.3V	1fF	20kA	Possible combinations: HS, HS-LL (No SP possible)
UMC L180 Mixed-Mode/RF - 1P6M - 1.8V/3.3V	1.8V	3.3V	1fF	20kA	

2012 *mini@sic* Europractice MPW runs – Pricelist

Accessible for universities, research institutes and companies
 Prices and conditions may change at any time without prior notice

NON-EUROPEAN price applies to all non-European (not belonging to the countries of EUROPEAN price) universities and research institutes who submit designs for **educational or publicly funded research use only**

EUROPEAN price : only applies to EUROPRACTICE registered (who paid their annual full membership fee) Academic and Research Members from all 27 EU countries and Norway, Iceland, Liechtenstein, Israel, Croatia, Serbia, Macedonia, Albania, Montenegro, Bosnia&Herzegovina, Switzerland, Turkey who submit designs for **educational or publicly funded research use only**. They have special discounted prices thanks to special grant through the EU-Project EUROPRACTICE IC5 in the 7th Framework.

Prices are given for the delivery of unpackaged, untested prototypes. Encapsulation and testing will be charged separately.

Number of prototypes

OnSemi > 20 samples
 austriamicrosystems , IHP : 40 samples
 UMC : > 20 samples
 TSMC : 100 samples
 If you need more prototype samples, please ask for a quotation

Plots

You can order plots/PDF of your designs
 - first plot/PDF costs 50 euro
 - next plots cost 20 euro each

Packaging : see separate prices and available packages

ALL PRICES IN EURO

ON Semiconductor (formerly AMIS)

	NON-EUROPEAN Price/mm ²	EUROPEAN Price/mm ²
AMIS 0.7μ C07M-D 2M/1P	360 ²	320 ²
AMIS 0.7μ C07M-A 2M/1P/PdiffC/HR	400 ²	360 ²
AMIS 0.5μ C05M-D 3M/1P	420 ²	370 ²
AMIS 0.5μ C05M-A 3M/2P/HR	480 ²	430 ²
AMIS 0.35μ C035M-D 5M/1P	620 ²	570 ²
AMIS 0.35μ C035M-A 5M/2P/HR	680 ²	630 ²
AMIS 0.35μ C035U 4M (default) including analog options	720 ²	670 ²
AMIS 0.35μ C035U 3M (optional) including analog options	700 ²	650 ²
AMIS 0.35μ C035U 5M (optional) including analog options	800 ²	750 ²
AMIS 0.7μ C07M-I2T100 100 V - 2M	550 ²	500 ²
AMIS 0.7μ C07M-I2T100 100 V - 3M	600 ²	550 ²
AMIS 0.7μ C07M-I2T30 30 V - 2M	440 ²	390 ²
AMIS 0.7μ C07M-I2T30E 30 V - 2M	500 ²	450 ²
AMIS 0.35μ C035 - I3T80U 80 V 3M	850 ²	800 ²
AMIS 0.35μ C035 - I3T80U 80 V 4M	990 ²	940 ²
AMIS 0.35μ C035 - I3T80U 80 V 5M	1145 ²	1075 ²
AMIS 0.35μ C035 - I3T50 50 V 3M	850 ²	800 ²
AMIS 0.35μ C035 - I3T50 50 V 4M	990 ²	940 ²
AMIS 0.35μ C035 - I3T50 50 V 5M	1145 ²	1075 ²
AMIS 0.35μ C035 - I3T25 3.3/25 V 3M (optional)	750 ²	700 ²
AMIS 0.35μ C035 - I3T25 3.3/25 V 4M (default)	770 ²	720 ²
AMIS 0.35μ C035 - I3T25 3.3/25 V 5M (optional)	850 ²	800 ²

austriamicrosystems

	NON-EUROPEAN Price/mm ²	EUROPEAN Price/mm ²
austriamicrosystems 0.35μ CMOS C35B3C3 3M/2P/HR/5V IO	720 ³	580 ³
austriamicrosystems 0.35μ CMOS C35B4C3 4M/2P/HR/5V IO	720 ³	580 ³
austriamicrosystems 0.35μ CMOS C35OPTO 4M/2P/5V IO	850 ³	700 ³
austriamicrosystems 0.35μ HV CMOS H35 50V 3M & 4M	1000 ²	800 & 900 ⁹
austriamicrosystems 0.35μ SiGe-BiCMOS S35 4M/4P	1000 ²	800 & 900 ⁹
austriamicrosystems 0.18μ CMOS C18 6M or 4M/1P/MIM/1.8V/5V	1200 ¹	1100 ¹
austriamicrosystems 0.18μ HV CMOS H18 6M or 4M/50V/20V/5V/1.8V/MIM	1320 ¹	1200 ¹

IHP

	NON-EUROPEAN Price/mm ²	EUROPEAN Price/mm ²
IHP SGB25V 0.25μ SiGe:C Ft=30GHz@BVCEO>7V 5M	2500 ⁶	1875 ⁶
IHP SG25H1 0.25μ SiGe:C Ft/Fmax=190GHz/220GHz 5M/MIM	6800 ⁶	5100 ⁶
IHP SG25H3 0.25μ SiGe:C Ft/Fmax= 120/180GHz 5M/MIM	3800 ⁶	2850 ⁶
IHP SG13G2 SiGe:C Bipolar/Analog Fmax= 400GHz 5M/MIM	7500 ⁶	5625 ^{6,15}
IHP SG13G2 SiGe:C Bipolar/Analog Fmax= 400GHz 5M/MIM	7500 ⁶	4500 ^{6,12}
IHP SG13S SiGe:C Bipolar/Analog/CMOS Ft/Fmax= 250/300GHz 7M/MIM	7200 ⁶	5400 ^{6,15}
IHP SG13S SiGe:C Bipolar/Analog/CMOS Ft/Fmax= 250/300GHz 7M/MIM	7200 ⁶	4320 ^{6,12}
IHP SG13C SiGe:C CMOS 7M/MIM	4500 ⁶	3375 ⁶
BEOL SG25 (M1 and Metal Layers Above)	800	600
BEOL SG13 (M1 and Metal Layers Above)	1000	750
bumping for all IHP technologies	One-off fee of 3000 ¹⁰	One-off fee of 2000 ¹⁰
localized back side etching for all IHP technologies (per design)	One-off fee of 5000	One-off fee of 2500
RF-MEMS switch for SG25H1 and SG25H3 (per design)	One-off fee of 10000	One-off fee of 2500

LFoundry	NON-EUROPEAN Price/block	EUROPEAN Price/block
LFoundry LF150 0.15µ CMOS all technologies		

TSMC	NON-EUROPEAN Price/block	EUROPEAN Price/block
TSMC 0.18 CMOS General Logic or MS/RF	3330 ¹⁴	3050 ¹⁴
0.18 CMOS High Voltage Mixed-Signal (CV018LD 1.8/3.3/32V) – to be used in combination with imec SiGEMEMS	3830 ¹⁴	3530 ¹⁴
TSMC 90nm CMOS LP MS RF	16650 ¹³	15820 ¹³
TSMC 65nm CMOS LP MS RF	22640 ¹³	21510 ¹³

UMC	NON-EUROPEAN Price/block	EUROPEAN Price/block
UMC L180 Mixed-Mode/RF - 1P6M - 1.8V/3.3V	2670 ⁷	2460 ⁷
UMC L130 Mixed-Mode/RF - 1P8M2T - 1.2V/3.3V	5150 ⁷	4850 ⁷
UMC L90N Mixed-Mode/RF - 1P9M2T1F - 1.0V/2.5V	15740 ⁸	14800 ⁸
UMC L65N LOGIC/MIXED-MODE65N/RF - LL - 1P8M1T0F1U - 1.2V/2.5V	16040 ⁸	14920 ⁸

Notes

- 1) Price = area (mm²) * price/mm² with min. fabrication cost equivalent to 7 mm²
- 2) Price = area (mm²) * price/mm² with min. fabrication cost equivalent to 4 mm²
- 3) Price = area (mm²) * price/mm² with min. fabrication cost equivalent to 5 mm²
- 4) Price = area (mm²) * price/mm² with min. fabrication cost equivalent to 3 mm²
- 5) Price = area (mm²) * price/mm² with min. fabrication cost equivalent to 1 mm²
- 6) Price = area (mm²) * price/mm² with min. fabrication cost equivalent to 0.5 mm²
- 7) Price = per block of 1525x1525 microns needed to fit the design in
- 8) Price = per block of 1875x1875 microns needed to fit the design in
- 9) Minimum charged area = 4 mm².
For area ≤ 5 mm², Price = area (mm²) * 800
For area > 5 mm², Price = 4,000 + (area-5) * 900
- 10) Price = per submitted design to be bumped (no size limit, limited to 200 bumps)
- 11) Minimum charged area = 3 mm².
For area ≤ 5 mm², Price = area (mm²) * 595
For area > 5 mm², Price = 2,975 + (area-5) * 850
- 12) Only European universities with Axxxx membership number
- 13) Price = per block of 1920x1920 microns needed to fit the design in
- 14) Price = per block of 1570x1570 microns needed to fit the design in
- 15) Only European R&D institutes with Rxxxx membership number

General rules that apply to each MPW run supported by the *mini@sic* Program :

- Users must register their design for prototyping on one of the MPW runs under the *mini@sic* Program
- Registration can be done via the web pages www.europractice-ic.com under the *mini@sic* Program
- A priority list will be generated per MPW run according to user registration date and acceptance by EURO PRACTICE
- Users paying the normal fees (for normal MPW participation with normal minimum charges) have first priority, then *mini@sic* designs will be added from this priority list according to priority and availability of free space on the masks.
- EURO PRACTICE can not give any commitment for final acceptance for prototyping until tape-out of the MPW run

UMC 0.18 and 0.13µ *mini@sic* rules

In this case however the standard block of 5x5 mm is subdivided into 9 regular square sub-blocks. Users under the *mini@sic* program can submit single or multiple of sub-blocks depending on the size of their design.

- single sub-block : design may not be larger than 1525 x 1525 µm
- 2 sub-blocks : design may not be larger than 3240 x 1525 µm
- 3 sub-blocks : design may not be larger than 4960 x 1525 µm
- 4 sub-blocks : design may not be larger than 3240 x 3240 µm
- 6 sub-blocks : design may not be larger than 4960 x 3240 µm

The price for prototyping is the number of sub-blocks your design needs to fit in, multiplied with the sub-block price.

UMC 90nm & 65nm *mini@sic* rules

Users under the *mini@sic* program can submit single or multiple of sub-blocks depending on the size of their design.

- single sub-block : design may not be larger than 1875 x 1875 µm
- 2 sub-blocks : design may not be larger than 3950 x 1875 µm

TSMC 90nm & 65nm *mini@sic* rules

Users under the *mini@sic* program can submit single or multiple of sub-blocks depending on the size of their design.

- single sub-block : design may not be larger than 1920 x 1920 µm
- 2 sub-blocks : design may not be larger than 3960 x 1920 µm

TSMC 0.18µ *mini@sic* rules

In this case however the standard block of 5x5 mm is subdivided into 9 regular square sub-blocks. Users under the *mini@sic* program can submit single or multiple of sub-blocks depending on the size of their design.

- single sub-block : design may not be larger than 1570 x 1570 µm
- 2 sub-blocks : design may not be larger than 3260 x 1570 µm
- 3 sub-blocks : design may not be larger than 4960 x 1570 µm
- 4 sub-blocks : design may not be larger than 3260 x 3260 µm
- 6 sub-blocks : design may not be larger than 4960 x 3260 µm

The price for prototyping is the number of sub-blocks your design needs to fit in, multiplied with the sub-block price.

Contacts

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