

Dear customer,

Please note that indicated dates are **gds-in deadlines for TSMC, UMC, X-Fab, ON Semiconductor, ams technologies, STMicroelectronics**. If you want to participate onto one of below listed MPW runs, please make sure to do your design registration in time to ensure a seat is reserved for you. How many weeks in advance is mentioned in the notes per foundry. For questions, you can send a mail to:

For TSMC technologies : [epsmc@imec.be](mailto:epsmc@imec.be)

For UMC technologies : [epumc@imec.be](mailto:epumc@imec.be)

For X-fab technologies : [epxfab@imec.be](mailto:epxfab@imec.be)

For ON Semiconductor technologies : [greta.milczanowska@imec.be](mailto:greta.milczanowska@imec.be)

For ams technologies :

If your service center is fraunhofer : [virtual-asic@iis.fraunhofer.de](mailto:virtual-asic@iis.fraunhofer.de)

If your service center is CMP : [cmp@mycmp.fr](mailto:cmp@mycmp.fr)

For IHP technologies : [virtual-asic@iis.fraunhofer.de](mailto:virtual-asic@iis.fraunhofer.de)

For GLOBALFOUNDRIES technologies : [virtual-asic@iis.fraunhofer.de](mailto:virtual-asic@iis.fraunhofer.de)

For STMicroelectronics : [cmp@mycmp.fr](mailto:cmp@mycmp.fr)

## ON Semiconductor

|   | J  | F | M  | A  | M  | J  | J | A  | S  | O  | N | D |
|---|----|---|----|----|----|----|---|----|----|----|---|---|
| ON Semi 0.7µ C07M-D 2M/1P & ON Semi 0.7µ C07M-A 2M/1P/PdiffC/HR                 | 14 |   | 25 |    |    | 3  |   | 12 |    | 28 |   |   |
| ON Semi 0.7µ C07M-I2T100 100 V - 2M & 3M options                                | 14 |   | 25 |    |    | 3  |   | 12 |    | 28 |   |   |
| ON Semi 0.5µ CMOS EEPROM C5F & C5N - 200 mm                                     |    |   | 4* |    |    |    |   |    |    |    |   |   |
| ON Semi 0.35µ C035U - 4M (3M & 5M optional) only thick top metal                | 28 |   |    | 15 |    |    | 1 |    | 16 |    |   | 2 |
| ON Semi 0.35µ C035 - I3T25U 3.3/25 V 4M (3M & 5M optional) only thick top metal | 28 |   |    | 15 |    |    | 1 |    | 16 |    |   | 2 |
| ON Semi 0.35µ C035 - I3T80U 80 V 4M - 3M optional (5M on special request)       | 2  |   |    | 1  |    |    | 8 |    |    | 7  |   |   |
| ON Semi 0.35µ C035 - I3T50U (E) 50 V 4M - 3M optional (5M on special request)   |    |   | 4  |    | 27 |    |   |    | 2  |    |   | 2 |
| ONC18MS (0.18 µm - 1.8/3.3 V - 15V DMOS - 5LM - MiMC - ESD - HiR - EPI)         |    | 4 |    | 8  |    | 10 |   | 12 |    | 7  |   | 9 |
| ONC18MS-LL (=ONC18MS + High Vt)   |    | 4 |    | 8  |    | 10 |   | 12 |    | 7  |   | 9 |
| ONC18HPA (= ONC18MS + DNW + Zener + Stacked MiMC + Native Dev + Schottky)       |    | 4 |    | 8  |    | 10 |   | 12 |    | 7  |   | 9 |
| ONC18-I4T 45/70V HV CMOS (=ONC18MS + 30V + 45V + 70V DMOS)                      |    | 4 |    | 8  |    | 10 |   | 12 |    | 7  |   | 9 |

**Important note:** Dates are GDS submission deadlines. The design registration has to be done at least 3 weeks in advance.

\* ON Semi is experiencing a line load issue for the foreseeable future that pushes out delivery up to 26 weeks

| ams   | J | F  | M  | A | M | J  | J | A | S  | O  | N  | D |
|---|---|----|----|---|---|----|---|---|----|----|----|---|
| ams 0.35µ CMOS C35B4C3 4M/2P/HR/5V IO                     |   | 18 |    |   |   | 13 |   | 5 |    |    | 18 |   |
| ams 0.35µ CMOS C35OPTO 4M/2P/5V IO                        |   |    |    |   |   | 13 |   |   |    |    | 18 |   |
| ams 0.35µ HV CMOS H35B4D3 120V 4M                         |   |    | 5  |   |   |    |   |   | 30 |    |    |   |
| ams 0.35µ SiGe-BiCMOS S35D4M5/CMOS-RF C35B4M3 4M/4P - MIM |   |    | 18 |   |   |    |   |   |    | 14 |    |   |

### Important notes:

- Dates are GDS submission deadlines. The design registration has to be done at least 2 weeks in advance.

Be aware that ams technology will be available only for the coming years. For ongoing projects, Fraunhofer and cmp will provide full support and access for shared engineering run and production. Before starting a new project with ams technologies contact the support team at [virtual-asic@iis.fraunhofer.de](mailto:virtual-asic@iis.fraunhofer.de) or [cmp@mycmp.fr](mailto:cmp@mycmp.fr).

| <b>IHP</b>   | J  | F  | M | A  | M  | J  | J  | A  | S | O  | N | D |
|--|----|----|---|----|----|----|----|----|---|----|---|---|
| IHP SGB25V 0.25µ SiGe:C Bipolar/Analog, Ft/Fmax= 95/75GHz, 5M/MIM, breakdown voltages up to 7V   | 18 |    |   |    |    |    | 26 |    |   |    |   |   |
| IHP SG25H3 0.25µ SiGe:C Bipolar/Analog, Ft/Fmax= 110/180GHz, 5M/MIM, breakdown voltages up to 7V | 18 |    |   |    |    |    | 26 |    |   |    |   |   |
| SG25H5_EPIC Bipolar/Analog, Ft/Fmax= 240/300GHz, 5M/MIM + Photonics                              |    |    |   | 12 |    |    |    |    |   | 18 |   |   |
| IHP SG25 PIC (Photonics, Ge Photo-diode, BEOL)   |    |    |   |    | 24 |    |    |    |   |    |   |   |
| IHP SG13S SiGe:C Bipolar/Analog, Ft/Fmax= 250/300GHz, 7M/MIM + optional TSV                      |    | 22 |   |    |    | 14 |    | 30 |   |    |   |   |
| IHP SG13C SiGe:C CMOS 7M/MIM   |    | 22 |   |    |    | 14 |    | 30 |   |    |   |   |
| IHP SG13G2 SiGe:C Bipolar/Analog, Ft/Fmax= 300/500GHz, 7M/MIM + optional TSV                     |    | 22 |   |    |    | 14 |    | 30 |   |    |   |   |
| IHP BEOL SG13 (M1 and Metal Layers Above) + optional LBE   |    |    | 8 |    |    |    |    |    |   |    |   |   |

**Important notes:**

- Dates are registration deadlines. Final GDSII file must be submitted within 10 days after this date.
- Bumping available for all IHP technologies with extra charge, limited to 200 bumps.
- IHP SG25H4 MPW runs available on request for existing projects only. (Contact: [virtual-asic@iis.fraunhofer.de](mailto:virtual-asic@iis.fraunhofer.de) for additional information)

| <b>X-FAB</b>                    | J  | F  | M  | A  | M  | J  | J  | A  | S  | O  | N  | D |
|---------------------------------|----|----|----|----|----|----|----|----|----|----|----|---|
| XH018 0.18µ HV NVM CMOS E-FLASH | 18 |    |    | 23 |    |    | 29 |    |    | 24 |    |   |
| XT018 0.18µ HV SOI CMOS         | 4  |    | 15 |    |    | 7  |    | 23 |    |    | 1  |   |
| XS018 0.18µ OPTO                |    | 27 |    |    |    |    |    |    | 11 |    |    |   |
| XP018 0.18µ NVM CMOS            |    | 7  |    |    |    | 20 |    |    |    | 10 |    |   |
| XH035 0.35µ HV CMOS             | 11 |    |    |    |    | 3  |    | 9  |    |    | 8  |   |
| XR013 0.13µ RF SOI CMOS         |    |    |    |    | 20 |    |    |    |    |    | 18 |   |

| options regular runs            | Process modules included for 4 metal option   | Process modules included for 6 metal option (5M: XR013)   |
|---------------------------------|---|---|
| XH018 0.18µ HV NVM CMOS E-FLASH | LPMOS, MET3, METMID, MRPOLY, ISOMOS, LVT, DMOS, HV MOS, SCHOTTKY, MIM, NVM, FLASH, OTP3, PHOTODIO | LPMOS, MET3, MET4, METMID, METTHK, MRPOLY, ISOMOS, LVT, DMOS, HV MOS, SCHOTTKY, MIM, NVM, FLASH, OTP3, PHOTODIO |
| XT018 0.18µ HV SOI CMOS         | LP5MOS, HVN, HVP, 1XN, 1XP, PSUB, DTI, DNC, DPC, N BUR, HRPOLY, MIMH, MET3, METTHK, HWC           | LP5MOS, HVN, HVP, 1XN, 1XP, PSUB, DTI, DNC, DPC, N BUR, HRPOLY, MIMH, MET3, MET4, METMID, METTHK, HWC           |
| XS018 0.18µ OPTO                | MOS3LP, MOSLP, METTHIN, MET3, MET4, MRPOLY, ISOMOS, LVTN3D, BCH, MIM23, PPDB, 4TPIX, SFLATPV      | MOS3LP, MOSLP, MET3, MET4, MET5, METMID, MRPOLY, ISOMOS, LVTN3D, BCH, MIM23, PPDB, 4TPIX, SFLATPV               |
| XP018 0.18µ NVM CMOS            | LP5MOS, MET3, METMID, MRPOLY, HRPOLY, ISOMOS, LVT, MIM, NVM                                       | LP5MOS, MET3, MET4, METMID, METTHK, MRPOLY, HRPOLY, ISOMOS, LVT, MIM, NVM                                       |
| XH035 0.35µ HV CMOS             | MOS, MOS5A, ISOMOS, HV MOSMID, HRPOLY, MIM, METAL4  | Not available   |
| XR013 0.13µ RF SOI CMOS         | MET1, MET2, MIM, METRB, NOPIMIDE, 2V5DT, HRPOLY, CORE, METBQ                                      | MET1, MET2, METTHKI, MIM, METRB, NOPIMIDE, 2V5DT, IV2DT, LNGI, HRPOLY, CORE, DGOXA, METBQ, LNG2                 |

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| <b>TSMC</b>   | J  | F     | M    | A     | M    | J       | J     | A       | S    | O    | N    | D  |
|---|----|-------|------|-------|------|---------|-------|---------|------|------|------|----|
| TSMC 0.18 CMOS Logic or Mixed-Signal/RF, General Purpose  | 30 | 20    | 6,27 | 17,24 | 8    | 5,12,19 | 10,24 | 21      | 4,18 | 9,23 | 6,20 | 4  |
| TSMC 0.18 CMOS High Voltage BCD Gen II  | 9  | 20,27 | 27   | 17    | 1    | 5,12    | 10    | 7,21,27 | 18   | 9,30 |      | 4  |
| TSMC 0.13 CMOS Logic or Mixed-Signal/RF, General Purpose or Low Power (8-inch)                      |    |       | 13   |       |      | 5       | 17    |         |      |      |      | 11 |
| TSMC 0.13 CMOS Logic or Mixed-Signal/RF, General Purpose or Low Power (12-inch)                     | 9  | 13    |      | 10    | 15   |         |       | 14      | 11   | 16   | 13   |    |
| TSMC 90nm CMOS Logic or Mixed-Signal/RF, General Purpose or Low Power                               | 2  |       |      | 17    |      | 26      |       |         | 18   |      |      |    |
| TSMC 65nm CMOS Logic or Mixed-Signal/RF, General Purpose or Low Power (reserve 4 months in advance) | 30 | 20    | 27   | 24    | 22   | 26      | 24    | 28      |      | 9,23 | 27   |    |
| TSMC 40nm CMOS Logic or Mixed-Signal/RF, General Purpose or Low Power (no triple gate oxide)        | 2  | 6     | 6    | 10    | 1    | 5       | 10    | 7       | 4    | 9    | 6    | 11 |
| TSMC 28nm CMOS Logic HPL/HPC/HPC+, RF HPL/HPC/HPC+ (reserve 4 months in advance)                    |    | 6,27  |      | 3     | 1,29 |         | 3,31  | 28      |      | 2,30 | 20   |    |

**Important notes:**

- Dates are GDS submission deadlines. The design registration has to be done at least 4 weeks in advance unless otherwise specified in above table.
- Contact [eptsmc@imec.be](mailto:eptsmc@imec.be) if any of the following options are used: MTP/OTP, Deep Trench, High Linearity MiM, Schottky Barrier Diode, ULL N/PMOS

### STMicroelectronics

|                     | J | F  | M  | A  | M | J | J | A  | S  | O  | N | D |
|---------------------|---|----|----|----|---|---|---|----|----|----|---|---|
| ST 28nm CMOS28FDSOI |   | 12 |    |    |   |   |   |    |    | 15 |   |   |
| ST 55nm BiCMOS055   |   | 12 | 26 |    |   |   |   | 12 |    | 22 |   |   |
| ST 65nm CMOS065     |   |    |    | 29 |   |   |   |    | 30 |    |   |   |
| ST 130nm BiCMOS9MW  |   |    | 4  |    |   | 3 |   |    |    |    | 4 |   |
| ST 130nm H9SOI-FEM  |   |    |    | 29 |   |   |   |    | 30 |    |   |   |
| ST 130nm HCMOS9GP   |   |    | 4  |    |   | 3 |   |    |    |    | 4 |   |
| ST 130nm HCMOS9A    |   |    |    |    |   |   |   |    |    |    | 7 |   |
| ST 0.16µm BCD8sP    |   |    | 14 |    |   |   |   |    |    |    |   |   |
| ST 0.16µm BCD8s-SOI |   | 22 |    |    |   |   |   |    |    | 2  |   |   |

**Important note:** Dates are GDS submission deadlines. The design registration has to be done at least 4 weeks in advance.

### UMC

|   | J  | F  | M  | A  | M  | J     | J  | A   | S  | O | N  | D |
|---|----|----|----|----|----|-------|----|-----|----|---|----|---|
| UMC L180 Logic GII, Mixed-Mode/RF                         |    | 4  |    | 29 |    |       | 29 |     |    | 7 |    |   |
| UMC L180 EFLASH Logic GII <sup>(1)</sup>                  |    | 25 |    |    |    | 8     |    |     |    |   | 11 |   |
| UMC CIS180 Image Sensor – CONV/ULTRA diode <sup>(1)</sup> |    |    |    | 8  |    |       |    |     | 30 |   |    |   |
| UMC L130 Logic/Mixed-Mode/RF                              |    | 18 |    |    |    | 24    |    |     |    |   | 4  |   |
| UMC L110AE Logic/Mixed-Mode/RF                            |    |    | 11 | 22 |    | 8     |    | 9   | 28 |   |    |   |
| UMC L65N Logic/Mixed-Mode/RF - LL                         | 2* |    | 4  | 1* |    | 1*+22 |    | 30* |    |   | 18 |   |
| UMC L65N Logic/Mixed-Mode/RF - SP                         | 2* |    | 4  | 1* |    | 1*+22 |    |     |    |   | 18 |   |
| UMC 40N Logic/Mixed-Mode – LP                             |    | 25 |    | 29 |    | 1     |    | 2   |    |   | 18 |   |
| UMC 28N Logic/Mixed-Mode – HPC <sup>(1)</sup>             |    | 11 |    |    | 13 |       |    | 12  |    |   | 11 |   |

| options regular runs              | Core             | IO                             | MIM           | topmetal                        | special remarks  |
|-----------------------------------|------------------|--------------------------------|---------------|---------------------------------|--|
| UMC L180 Logic GII                | 1.8V             | 3.3V                           | 1fF           | 8kA - Max. 1P6M                 | Redistribution and bumping on request  |
| UMC L180 Mixed-Mode/RF            | 1.8V             | 3.3V                           | 1fF           | 8kA/20kA<br>Max. 1P6M           | Redistribution and bumping on request.   |
| UMC L180 EFLASH logic GII         | 1.8V             | 3.3V                           | /             | 8kA - Max. 2P6M                 | Please get in touch with imec for the EFLASH macro information.  |
| UMC CIS18 – CONV                  | 1.8V             | 3.3V                           | 1fF           | 5kA – Max.1P4M                  | Colorfilters and microlenses included  |
| UMC CIS18 – ULTRA                 | 1.8V             | 3.3V                           | 1fF           | 5kA – Max.2P4M                  | Colorfilters and microlenses included. Ultra diode is pinned. PIP capacitor possible.  |
| UMC L130 Logic                    | 1.2V             | 3.3V                           | 1fF/1.5fF/2fF | 8kA<br>Max. 1P8M2T              | Two types (out of 3) of devices can be combined: HS,LL, SP. Redistr. to Al.  |
| UMC L130 Mixed-Mode/RF            | 1.2V             | 3.3V                           | 1fF/1.5fF/2fF | 8kA/20kA<br>Max. 1P8M2T         | Two types (out of 3) of devices can be combined: HS,LL, SP. Redistr. to Al.  |
| UMC L110AE Logic/Mixed-Mode/RF    | 1.2V             | 1.8V/2.5V/3.3V/5V              | 1fF/1.5fF/2fF | 8kA/12kA/20kA/40kA<br>Max. 1P8M | Metallization is Aluminium. 5V device possible! HS,LL,SP can be combined.  |
| UMC L65N Logic/Mixed-Mode/RF - SP | 1.0V,<br>1.1V    | 1.8V/2.5V/<br>2.5V_OD3.3V/3.3V | 2fF           | 8kA/32.5kA<br>Max. 1P10M        | Metallization recommendation on request. Redistribution to Aluminium. * = 32kA topmetal, LVT, MIM in development. 2.5V_OD3.3V not available. ** = 3.3V not available. Please check with us before tapeout. |
| UMC L65N Logic/Mixed-Mode/RF - LL | 1.2V             | 1.8V/2.5V/<br>2.5V_OD3.3V/3.3V | 2fF           | 8kA/32.5kA<br>Max. 1P10M        | Metallization recommendation on request. Redistribution to Aluminium. * = 32kA topmetal in development. Please check with us before tapeout.   |
| UMC 40N Logic/Mixed-Mode - LP     | 0.9V             | 1.8V/2.5V                      | 2fF           | 8kA/12kA/32.5kA                 | Metallization recommendation on request. Redistribution to Aluminium.  |
| UMC 28N Logic/Mixed-Mode - HPC    | 1.0<br>&<br>1.1V | 1.8V/2.5V                      | 2fF           | 8kA/12kA/32.5kA                 | Metallization recommendation on request. Redistribution to Aluminium.  |

**Important note:** Dates are GDS submission deadlines. The design registration has to be done at least 3 weeks in advance.

(1) Contact Europractice when planning to participate to those runs.

**GLOBALFOUNDRIES**

|  | J | F  | M  | A  | M  | J  | J | A  | S | O  | N  | D  |
|--|---|----|----|----|----|----|---|----|---|----|----|----|
| GLOBALFOUNDRIES 130nm BCDlite            | 7 |    | 11 |    | 13 |    | 8 |    | 9 |    | 11 |    |
| GLOBALFOUNDRIES 130 nm LP                | 7 |    | 11 |    | 13 |    | 8 |    | 9 |    | 11 |    |
| GLOBALFOUNDRIES 55 nm LPe                |   | 11 |    | 15 |    | 11 |   | 12 |   | 14 |    | 16 |
| GLOBALFOUNDRIES 55 nm LPx-NVM/LPx-RF     |   | 11 |    | 15 |    | 11 |   | 12 |   | 14 |    | 16 |
| GLOBALFOUNDRIES 40 nm LP/LP-RF/RF-mmWave | 2 |    |    | 1  |    |    | 3 |    |   | 1  |    |    |
| GLOBALFOUNDRIES 28 nm SLP/SLP-RF         |   | 4  |    |    | 6  |    |   | 5  |   |    | 4  |    |
| GLOBALFOUNDRIES 22 nm FDSOI              | 2 |    | 4  | 29 |    |    | 1 |    | 2 |    | 4  |    |

**Important note:** Dates are registration deadlines. Final GDSII file must be submitted within 6 weeks after this date.

\* Dates in red are preliminary.

**imec**

|                                 | J | F | M  | A | M  | J | J | A  | S  | O  | N | D |
|---------------------------------|---|---|----|---|----|---|---|----|----|----|---|---|
| imec Si-Photonics Passives+     |   |   | 27 |   |    |   |   | 28 |    |    |   |   |
| imec Si-Photonics iSIPP50G      |   | 6 |    |   | 22 |   |   |    |    | 16 |   |   |
| imec SiN-Photonics BioPIX 300*  |   |   |    | 1 |    |   |   |    |    |    |   |   |
| imec SiN-Photonics BioPIX 150*§ |   |   |    |   |    |   | 8 |    |    |    |   |   |
| imec GaN-IC on SOI              |   |   |    |   |    |   |   |    | 18 |    |   |   |

\* imec SiN-Photonics BioPIX: early access runs operated by the H2020-project PIX4Life

\*§ imec SiN-Photonics BioPIX 150 MPW run is tentative

**CEA-LETI**

|                                   | J | F | M | A | M | J  | J | A | S | O  | N | D |
|-----------------------------------|---|---|---|---|---|----|---|---|---|----|---|---|
| Silicon Photonic ICs Si310-PHMP2M |   |   |   | 2 |   |    |   |   |   | 30 |   |   |
| 130nm OxRAM NVM - MAD200          |   |   |   |   |   | 15 |   |   |   |    |   |   |

**Teledyne Dalsa**

|                      | J  | F | M | A | M | J | J | A | S | O | N | D |
|----------------------|----|---|---|---|---|---|---|---|---|---|---|---|
| Teledyne Dalsa MIDIS | 30 |   |   |   |   |   |   |   |   |   |   |   |

**MEMSCAP**

|            | J  | F  | M  | A | M  | J  | J | A  | S  | O | N  | D  |
|------------|----|----|----|---|----|----|---|----|----|---|----|----|
| PolyMUMPs  |    |    | 26 |   |    | 25 |   |    | 17 |   |    | 16 |
| SOIMUMPs   |    | 19 |    |   | 21 |    |   | 21 |    |   | 26 |    |
| PiezoMUMPs | 15 |    |    |   | 7  |    |   | 27 |    |   |    |    |

# 2019 General Europractice MPW runs – Pricelist

**Prices are valid for MPW runs starting after 1 January 2019**

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

**STANDARD** price : normal price

**DISCOUNTED** price : only applies to EURO PRACTICE registered (who paid their annual full membership fee) Academic and Research Members from all 28 EU countries and Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Georgia, Iceland, Israel, Liechtenstein, Former Yugoslav Republic of Macedonia, Moldova, Montenegro, Norway, Russia, Switzerland, Turkey, Serbia and Ukraine who submit designs for **educational or publicly funded research use only**

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

## Number of prototypes

On Semi: 30 samples  
X-FAB: 50 samples  
ams: 40 samples  
IHP: 40 samples SG25 & SG13, 25 samples using TSV module, PIC & EPIC  
UMC: 0.18um, 0.13um, 0.11um: 50 samples  
UMC: 65nm: 90 samples  
TSMC: 8-inch : 40 samples, 12-inch : 100 samples  
imec Si-Photonics passives+: 20 samples, ISIPP50G: 20 samples  
miniphotonics: 10 samples, SiN-Photonics BioPIX: 20 samples  
imec GaN-IC on SOI: 100 samples  
MEMSCAP: 15 samples  
GLOBALFOUNDRIES: 50 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

## PRICES IN EURO

| ON Semiconductor (formerly AMIS)  | STANDARD Price/mm <sup>2</sup> | DISCOUNTED Price/mm <sup>2</sup> |
|---|--------------------------------|----------------------------------|
| ON Semi 0.7μ C07M-D 2M/1P   | 300 <sup>2</sup>               | 270 <sup>2</sup>                 |
| ON Semi 0.7μ C07M-A 2M/1P/PdiffC/HR                                       | 350 <sup>2</sup>               | 315 <sup>2</sup>                 |
| ON Semi 0.7μ C07M-I2T100 100 V - 2M                                       | 525 <sup>1</sup>               | 485 <sup>1</sup>                 |
| ON Semi 0.7μ C07M-I2T100 100 V - 3M                                       | 560 <sup>1</sup>               | 525 <sup>1</sup>                 |
| ON Semi 0.5μ CMOS EEPROM C5F & C5N – 200 mm                               | 1150 <sup>2</sup>              | 1100 <sup>2</sup>                |
| ON Semi 0.35μ C035U 4M (default) including analog options                 | 720 <sup>1</sup>               | 670 <sup>1</sup>                 |
| ON Semi 0.35μ C035U 3M (optional) including analog options                | 700 <sup>1</sup>               | 650 <sup>1</sup>                 |
| ON Semi 0.35μ C035U 5M (optional) including analog options                | 800 <sup>1</sup>               | 750 <sup>1</sup>                 |
| ON Semi 0.35μ C035 - I3T80U 80 V 3M                                       | 850 <sup>1</sup>               | 800 <sup>1</sup>                 |
| ON Semi 0.35μ C035 - I3T80U 80 V 4M                                       | 925 <sup>1</sup>               | 875 <sup>1</sup>                 |
| ON Semi 0.35μ C035 - I3T80U 80 V 5M                                       | 1050 <sup>1</sup>              | 995 <sup>1</sup>                 |
| ON Semi 0.35μ C035 - I3T50U (or E) 50 V 3M                                | 850 <sup>1</sup>               | 800 <sup>1</sup>                 |
| ON Semi 0.35μ C035 - I3T50U (or E) 50 V 4M                                | 925 <sup>1</sup>               | 875 <sup>1</sup>                 |
| ON Semi 0.35μ C035 - I3T50U (or E) 50 V 5M                                | 1050 <sup>1</sup>              | 995 <sup>1</sup>                 |
| ON Semi 0.35μ C035 – I3T25U 3.3/25 V 3M (optional)                        | 750 <sup>1</sup>               | 700 <sup>1</sup>                 |
| ON Semi 0.35μ C035 – I3T25U 3.3/25 V 4M (default)                         | 770 <sup>1</sup>               | 720 <sup>1</sup>                 |
| ON Semi 0.35μ C035 – I3T25U 3.3/25 V 5M (optional)                        | 800 <sup>1</sup>               | 750 <sup>1</sup>                 |
| ONC18MS 0.18 μm - 1.8/3.3 V - 15V DMOS - 5LM - MiMC - ESD - HiR - EPI     | 1,100 <sup>1</sup>             | 1,050 <sup>1</sup>               |
| ONC18MS-LL (=ONC18MS + High Vt)   | 1,225 <sup>1</sup>             | 1,195 <sup>1</sup>               |
| ONC18HPA (= ONC18MS + DNW + Zener + Stacked MiMC + Native Dev + Schottky) | 1,350 <sup>1</sup>             | 1,290 <sup>1</sup>               |
| ON 0.18 μm I4T 40/75 V - 5LM - DTI (=ONC18MS + 30V + 45V + 70V DMOS)      | 1,540 <sup>1</sup>             | 1,480 <sup>1</sup>               |

| ams   | STANDARD Price/mm <sup>2</sup> | DISCOUNTED Price/mm <sup>2</sup> |
|---|--------------------------------|----------------------------------|
| ams 0.35μ CMOS C35B4C3 4M/2P/HR/5V IO                     | 640 <sup>12</sup>              | 580 <sup>12</sup>                |
| ams 0.35μ CMOS C35OPTO 4M/2P/5V IO                        | 800 <sup>3</sup>               | 700 <sup>3</sup>                 |
| ams 0.35μ HV CMOS H35B4D3 120V 4M                         | 880 <sup>3</sup>               | 800 <sup>3</sup>                 |
| ams 0.35μ SiGe-BiCMOS S35D4M5/CMOS-RF C35B4M3 4M/4P - MIM | 880 <sup>3</sup>               | 800 <sup>3</sup>                 |

| <b>IHP</b>   | <b>STANDARD<br/>Price/mm<sup>2</sup></b> | <b>DISCOUNTED<br/>Price/mm<sup>2</sup></b> |
|--|--|--|
| IHP SGB25V 0.25μ SiGe:C Bipolar/Analog, Ft/Fmax= 75/95GHz, 5M/MIM, breakdown voltages up to 7V   | 2500 <sup>7</sup>                        | 2125 <sup>7</sup>                          |
| IHP SG25H3 0.25μ SiGe:C Bipolar/Analog, Ft/Fmax= 110/180GHz, 5M/MIM, breakdown voltages up to 7V | 3800 <sup>7</sup>                        | 3230 <sup>7</sup>                          |
| SG25H5 EPIC Bipolar/Analog, Ft/Fmax= 240/300GHz, 5M/MIM + Photonics                              | 8000 <sup>7</sup>                        | 6800 <sup>7</sup>                          |
| IHP SG25 PIC (Photonics, Ge Photo-diode, BEOL)   | 3800 <sup>7</sup>                        | 3230 <sup>7</sup>                          |
| IHP SG13S SiGe:C Bipolar/Analog, Ft/Fmax= 250/300GHz, 7M/MIM + optional TSV                      | 6300 <sup>7</sup>                        | 5355 <sup>7</sup>                          |
| IHP SG13C SiGe:C CMOS 7M/MIM   | 4500 <sup>7</sup>                        | 3825 <sup>7</sup>                          |
| IHP SG13G2 SiGe:C Bipolar/Analog, Ft/Fmax= 300/500GHz, 7M/MIM + optional TSV                     | 7300 <sup>7</sup>                        | 6205 <sup>7</sup>                          |
| IHP BEOL SG13 (M1 and Metal Layers Above)  | 1000 <sup>7</sup>                        | 850 <sup>7</sup>                           |
| <b>IHP SPECIAL SERVICES</b>  |  |  |
| bumping (available for all IHP technologies)   | One-off fee of 6500 <sup>8</sup>         | One-off fee of 6500 <sup>8</sup>           |
| localized back side etching (available for all IHP technologies) not offered for EPIC/PIC runs   | One-off fee of 5000 <sup>8</sup>         | One-off fee of 4250 <sup>8</sup>           |
| TSV to ground (offered for SG13S/SG13G2 technologies)  | One-off fee of 5000 <sup>8</sup>         | One-off fee of 4250 <sup>8</sup>           |

| <b>X-FAB</b>   | <b>STANDARD<br/>Price/mm<sup>2</sup></b> | <b>DISCOUNTED<br/>Price/mm<sup>2</sup></b> |
|--|--|--|
| X-FAB XH018 0.18μ HV NVM CMOS E-FLASH (MET3, METMID)               | 1450 <sup>1,10</sup>                     | 1380 <sup>1,10</sup>                       |
| X-FAB XH018 0.18μ HV NVM CMOS E-FLASH (MET3, MET4, METMID, METTHK) | 1605 <sup>1,10</sup>                     | 1525 <sup>1,10</sup>                       |
| X-FAB XT018 0.18μ HV SOI CMOS (MET3, METTHK)                       | 1460 <sup>1,10</sup>                     | 1390 <sup>1,10</sup>                       |
| X-FAB XT018 0.18μ HV SOI CMOS (MET3, MET4, METMID, METTHK)         | 1635 <sup>1,10</sup>                     | 1555 <sup>1,10</sup>                       |
| X-FAB XS018 0.18μ OPTO (METTHIN, MET3, MET4)                       | 1225 <sup>1,10</sup>                     | 1165 <sup>1,10</sup>                       |
| X-FAB XS018 0.18μ OPTO (MET3, MET4, MET5, METMID)                  | 1375 <sup>1,10</sup>                     | 1310 <sup>1,10</sup>                       |
| X-FAB XP018 0.18μ NVM CMOS (MET3, METMID)                          | 1260 <sup>1,10</sup>                     | 1200 <sup>1,10</sup>                       |
| X-FAB XP018 0.18μ NVM CMOS (MET3, MET4, METMID, METTHK)            | 1415 <sup>1,10</sup>                     | 1345 <sup>1,10</sup>                       |
| X-FAB XH035 0.35μ HV CMOS (MET4)                                   | 1035 <sup>1,10</sup>                     | 985 <sup>1,10</sup>                        |
| X-FAB XR013 0.13μ RF SOI CMOS (METRB, METBQ)                       | 1830 <sup>1,10</sup>                     | 1745 <sup>1,10</sup>                       |
| X-FAB XR013 0.13μ RF SOI CMOS (METTHK1, METRB, METRQ)              | 2280 <sup>1,10</sup>                     | 2165 <sup>1,10</sup>                       |

| <b>TSMC</b>           | <b>STANDARD<br/>Price/mm<sup>2</sup></b> | <b>DISCOUNTED<br/>Price/mm<sup>2</sup></b> |
|-----------------------|--|--|
| All TSMC technologies | Upon request <sup>6</sup>                | Upon request <sup>6</sup>                  |

| <b>UMC</b>                              | <b>STANDARD<br/>Price/block</b> | <b>DISCOUNTED<br/>Price/block</b> |
|---|---------------------------------|-----------------------------------|
| UMC L180 Logic GII, Mixed-Mode/RF       | 14200 <sup>4</sup>              | 13500 <sup>4</sup>                |
| UMC L180 CIS 2P4M CONV or 2P4M ULTRA    | 22700 <sup>4</sup>              | 21580 <sup>4</sup>                |
| UMC L180 EFLASH Logic GII               | 18000 <sup>4</sup>              | 17100 <sup>4</sup>                |
| UMC L130 Logic/Mixed-Mode/RF            | 23650 <sup>4</sup>              | 22480 <sup>4</sup>                |
| UMC L110AE Logic/Mixed-Mode/RF          | 26050 <sup>4</sup>              | 24760 <sup>4</sup>                |
| UMC L65nm Logic, Mixed-Mode/ RF – LL/SP | 37450 <sup>5</sup>              | 35580 <sup>5</sup>                |
| UMC 40N Logic/Mixed-Mode – LP           | 72500 <sup>5</sup>              | 68880 <sup>5</sup>                |
| UMC 28N Logic/ Mixed-Mode – HPC         | Upon request, please contact EP |                                   |

| <b>GLOBALFOUNDRIES</b>                   | <b>STANDARD<br/>Price/mm<sup>2</sup></b> | <b>DISCOUNTED<br/>Price/mm<sup>2</sup></b> |
|--|--|--|
| GLOBALFOUNDRIES 130 nm BCDlite           | 1500 <sup>11</sup>                       | 1400 <sup>11</sup>                         |
| GLOBALFOUNDRIES 130 nm LP                | 1500 <sup>11</sup>                       | 1400 <sup>11</sup>                         |
| GLOBALFOUNDRIES 55 nm LPe                | 4000 <sup>11</sup>                       | 3800 <sup>11</sup>                         |
| GLOBALFOUNDRIES 55 nm LPx-NVM/LPx-RF     | 4000 <sup>11</sup>                       | 3800 <sup>11</sup>                         |
| GLOBALFOUNDRIES 40 nm LP/LP-RF/RF-mmWave | 5000 <sup>11</sup>                       | 4700 <sup>11</sup>                         |
| GLOBALFOUNDRIES 28 nm SLP-RF             | 10200 <sup>11</sup>                      | 9700 <sup>11</sup>                         |
| GLOBALFOUNDRIES 22 nm FDX FDSOI          | 14000 <sup>11</sup>                      | 13200 <sup>11</sup>                        |

| <b>STMicroelectronics</b>                     | <b>STANDARD<br/>€/mm<sup>2</sup></b>                         | <b>DISCOUNT<br/>€/project</b> |
|---|--|-------------------------------|
| ST 28nm CMOS28FDSOI                           | 12000 <sup>18</sup><br>24000 + (Area-2) x 9000 <sup>20</sup> | 1500                          |
| ST 55nm BiCMOS055                             | 7500 <sup>18</sup><br>15000 + (Area-2) x 6000 <sup>20</sup>  | 1200                          |
| ST 65nm CMOS065                               | 6000 <sup>19</sup><br>30000 + (Area-5) x 4900 <sup>14</sup>  | 1200                          |
| ST 130nm BiCMOS9MW                            | 2900 <sup>19</sup><br>14500 + (Area-5) x 2400 <sup>14</sup>  | 1000                          |
| ST 130nm H9SOI-FEM                            | 2200 <sup>19</sup><br>11000 + (Area-5) x 1500 <sup>14</sup>  | 700                           |
| ST 130nm HCMOS9GP                             | 2500 <sup>19</sup><br>12500 + (Area-5) x 2200 <sup>14</sup>  | 700                           |
| ST 130nm HCMOS9A                              | 2500 <sup>19</sup><br>12500 + (Area-5) x 2200 <sup>14</sup>  | 700                           |
| ST 0.16µm BCD8sP                              | 2500 <sup>13</sup><br>12500 + (Area-5) x 2200 <sup>14</sup>  | 1000                          |
| ST 0.16µm BCD8s-SOI                           | 2500 <sup>13</sup><br>12500 + (Area-5) x 2200 <sup>14</sup>  | 1000                          |
| <b>STMicroelectronics Wafer-Level Bumping</b> | <b>STANDARD<br/>€/project</b>                                | <b>DISCOUNT<br/>€/project</b> |
| wafer 300mm ST 55nm BiCMOS055                 | 25000  | 1500                          |
| wafer 300mm ST 65nm CMOS065                   | 23000  | 1500                          |
| wafer 300mm ST 28nm CMOS28FDSOI               | 33000  | 1500                          |

Optional Postprocessing : see pricelist on [www.europractice-ic.com](http://www.europractice-ic.com)

| <b>MEMSCAP</b>                            | <b>STANDARD<br/>Price/block</b> | <b>DISCOUNTED<br/>Price/block</b> |
|---|---------------------------------|-----------------------------------|
| PolyMUMPs, SOIMUMPs, PiezoMUMPs - 10x10mm | 3550                            | 3350                              |

| <b>imec Si-Photonics: passives+</b> |  | <b>Design size</b> | <b>STANDARD<br/>price</b> | <b>DISCOUNTED<br/>price</b> |
|-------------------------------------|--|--------------------|---------------------------|-----------------------------|
| Design Size                         | half block - horizontal                            | 5.15 x 2.5 mm      | 6100                      | 5800                        |
|                                     | half block - vertical                              | 2.5 x 5.15 mm      | 6100                      | 5800                        |
|                                     | 1 block  | 5.15 x 5.15 mm     | 11600                     | 11000                       |
|                                     | 2 block - horizontal                               | 10.45 x 5.15 mm    | 20600                     | 19600                       |
|                                     | 2 block - vertical                                 | 5.15 x 10.45 mm    | 20600                     | 19600                       |
|                                     | Larger sizes                                       | Contact us         |                           |                             |
| Options                             | extra set of half block chips (10 samples)         |                    | +2000                     | +2000                       |
|                                     | extra set of chips (1 block or larger; 20 samples) |                    | +2000                     | +2000                       |

- Imec Si-Photonics passives technology is replaced by imec Si-Photonics passives+ technology in 2019. Imec Si-Photonics passives+ allows for metal heaters and edge-couplers, but its introduction also implies a few other changes to the offer. Existing users, please be cautious.
- Number of prototypes in base order: depends on design size: 20 for 1 block or larger, 10 for half block or smaller.
- Due to the nature of MPW logistics, more chips than ordered may sometimes be shipped.

|                                    |  | Design size      | STANDARD price | DISCOUNTED price |
|------------------------------------|--|------------------|----------------|------------------|
| <b>imec Si-Photonics: iSiPP50G</b> |  |                  |                |                  |
| Design Size                        | quarter block                                      | 2.5 x 2.5 mm     | 10000          | 9500             |
|                                    | half block - horizontal                            | 5.15 x 2.5 mm    | 20000          | 19000            |
|                                    | half block - vertical                              | 2.5 x 5.15 mm    | 20000          | 19000            |
|                                    | 1 block  | 5.15 x 5.15 mm   | 40000          | 38000            |
|                                    | 2 block - horizontal                               | 10.45 x 5.15 mm  | 80000          | 76000            |
|                                    | 2 block - vertical                                 | 5.15 x 10.45 mm  | 80000          | 76000            |
|                                    | 4 blocks   | 10.45 x 10.45 mm | 150000         | 142500           |
|                                    | Other  |                  | Contact us     |                  |
| Options                            | extra set of quarter block chips (10 samples)      |                  | +2000          | +2000            |
|                                    | extra set of half block chips (10 samples)         |                  | +2000          | +2000            |
|                                    | extra set of chips (1 block or larger; 20 samples) |                  | +2000          | +2000            |

- Number of prototypes in standard order depends on design size: 20 for 1 block or larger, 10 for half block or smaller.
- Due to the nature of MPW logistics, more chips than ordered may sometimes be shipped.

|   |                    | STANDARD Price | DISCOUNTED Price |
|---|--------------------|----------------|------------------|
| <b>imec GaN Power Electronics (regular 100 samples)</b> |                    |                |                  |
| GaN-IC on SOI   | 5.15 mm x 5.15 mm  | 30000          | 28500            |
| GaN-IC on SOI   | 10.45 mm x 5.15 mm | 60000          | 57000            |

|  |  | STANDARD €/mm <sup>2</sup>   | DISCOUNT €/project |
|--|--|--|--------------------|
| <b>LETI-CEA OxRAM NVM and Si-Photonic processes - IRT Nanoelec</b> |  |  |                    |
| 130nm OxRAM NVM – MAD200   |  | 4000 <sup>13</sup><br>20000 + (Area-5) x 3200 <sup>14</sup>                | 1200               |
| Silicon Photonic Si310-PHMP2M                                      |  | 1600 <sup>15, 16</sup><br>16000 + (900/mm <sup>2</sup> ) <sup>15, 17</sup> | 700                |

|  |                 | STANDARD Price | DISCOUNTED Price |
|--|-----------------|----------------|------------------|
| <b>Teledyne Dalsa (prices only for academia)</b> |                 |                |                  |
| MiDIS  | 4.0 mm x 4.0 mm | 5200           | NA               |



**Notes:**

- 1) Price = area (mm<sup>2</sup>) \* price/mm<sup>2</sup> with min. fabrication cost equivalent to 10 mm<sup>2</sup>
- 2) Price = area (mm<sup>2</sup>) \* price/mm<sup>2</sup> with min. fabrication cost equivalent to 5 mm<sup>2</sup>
- 3) Price = area (mm<sup>2</sup>) \* price/mm<sup>2</sup> with min. fabrication cost equivalent to 7 mm<sup>2</sup>
- 4) Price = per block of 5x5mm needed to fit the design in
- 5) Price = per block of 4x4mm needed to fit the design in
- 6) Price can be calculated through [http://www.europractice-ic.com/TSMC\\_request\\_prices.php](http://www.europractice-ic.com/TSMC_request_prices.php)  
When 4 or more independent sub-designs are submitted in one MPW submission to optimize the minimum charged area, an additional verification charge of 1,000 USD will be applicable. This is regardless of the request and charges for sub die sawing, (5 USD per additional die obtained from the base MPW submission)
- 7) Price = area (mm<sup>2</sup>) \* price/mm<sup>2</sup> with min. fabrication cost equivalent to 0.8 mm<sup>2</sup>. The chip area is inclusive of the filler cells outside the sealring
- 8) Price = per submitted design. For bumping (no size limit, limited to 200 bumps) final wafer thickness for TSV is 75um.
- 9) Cost for extra services like structures release, subdicing, ...  
please refer to [http://www.europractice-ic.com/MEMS\\_pricing.php](http://www.europractice-ic.com/MEMS_pricing.php)
- 10) Area will be rounded upwards to the next mm<sup>2</sup> (eg. 12.24 mm<sup>2</sup> will be charged as 13 mm<sup>2</sup>)
- 11) Price = area (mm<sup>2</sup>) \* price/mm<sup>2</sup> with min. fabrication cost equivalent to 9 mm<sup>2</sup>. Any edge length between 1.0 mm to 12.5 mm is possible. The mentioned die size is referred to the Pre-Shrink die size
- 12) Price = area (mm<sup>2</sup>) \* price/mm<sup>2</sup> with min. fabrication cost equivalent to 4 mm<sup>2</sup>
- 13) Price per mm<sup>2</sup> for area ≤ 5mm<sup>2</sup> with minimum charge of 3.43 mm<sup>2</sup> including seal-ring
- 14) Price for 5 mm<sup>2</sup> ≤ Area ≤ 15 mm<sup>2</sup> including seal-ring. Contact CMP when area is larger
- 15) Each block is multiple 1 x 2 mm<sup>2</sup> and/or 2 x 1mm<sup>2</sup>
- 16) Price for area ≤ 10 mm<sup>2</sup> with minimum charge of 2 blocks or 4 mm<sup>2</sup>
- 17) Price for additional blocks above 10 mm<sup>2</sup> with minimum charge of €16.000
- 18) Price per mm<sup>2</sup> for area ≤ 2 mm<sup>2</sup> with minimum charge of 1.25mm<sup>2</sup> including seal-ring
- 19) Price per mm<sup>2</sup> for area ≤ 5 mm<sup>2</sup> with minimum charge of 1.25mm<sup>2</sup> including seal-ring
- 20) Price for 2 mm<sup>2</sup> ≤ area ≤ 10 mm<sup>2</sup> including seal-ring. Contact CMP when area is larger than 10 mm<sup>2</sup>

**Contacts**

**imec**, Belgium (P. Malisse, tel: +32 16 281272, e-mail: [mpc@imec.be](mailto:mpc@imec.be))  
**Fraunhofer IIS**, Germany (T. Drischel, tel : +49 9131 776 4463, e-mail: [virtual-asic@iis.fraunhofer.de](mailto:virtual-asic@iis.fraunhofer.de))  
**CMP**, France (K. Torki, tel: +33 4 7657 4617, e-mail: [cmp@mycmp.fr](mailto:cmp@mycmp.fr))