

## MPW shuttle time summary

### MOSIS:

MOSIS offers multiproject wafer (MPW) runs for the following IC fabricators. Designers need to plan design activities to meet the schedule constraints. Participants on Globalfoundries MPW runs must adhere to the timeline. To be considered ontime for MPW runs in all other processes, layout and paperwork are due to MOSIS by 1 PM PT (Pacific/California Time) on the date listed.

### Globalfoundries Fabrication Schedule

Participants on Globalfoundries MPW runs must adhere to the [timeline](#). Globalfoundries (GF) featured CMOS processes:

28 nm, 40 nm, 65 nm, 0.13 μm, 0.18 μm, and 0.35 μm.

#### 2014 Fabrication Schedule

*The schedule for the balance of 2014 will be posted when available*

Technology		Customer Submission Date												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
GF_28HPP	28 nm			17				14		15				
GF_40	40 nm		17		21		23		25		27			
GF_65G	65 nm	21		31		19			4	29		10		
GF_65LPE	65 nm	20		31		19			4	29		10		
GF_013	0.13 μm		24		28			7		2		3		
GF_013_M	0.13 μm								4		6			
GF_018	0.18 μm	6	3	17		12		21		15		10		
GF_018_BCD	0.18 μm			17		12		21		15		10		
GF_018_M	0.18 μm								18		13			
GF_035_SG	0.35 μm		10						18					
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

## IBM Fabrication Schedule

IBM featured processes

SiGe: 8HP (0.13 μm), 8XP (0.13 μm), and 7WL (0.18 μm)

CMOS: 8RF-DM (0.13 μm)

SOI: 7RF SOI (0.18 μm)

### 2014 Fabrication Schedule

Technology		Customer Submission Date											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>8HP</b>	0.13 μm	27		31		27		28		29		24	
<b>8RF <sup>2</sup></b>	0.13 μm		18			19			18			17	
<b>8XP</b>	0.13 μm		24				23			20			
<b>7HV</b>	0.18 μm			3			2			2			1
<b>7RF</b>	0.18 μm			3			2			2			1
<b>7RFSOI</b>	0.18 μm	6		10		5		7		8		3	
<b>7WL</b>	0.18 μm	21		17		19		21		15		17	
<b>5PAE <sup>1</sup></b>	0.35 μm	13			21			14			27		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

<sup>1</sup> Contact MOSIS Support if designs are planned.

<sup>2</sup> 8RF-LM 0.13 μm designs can be added to 8RF-DM runs with sufficient advance notice to [MOSIS Customer Support](#).

Dedicated (COT) through MOSIS are also available in the above processes. Dedicated runs can be scheduled to start at any time.

## **TSMC Fabrication Schedule**

TSMC featured processes:

**40 / 45 nm, 65 nm, 90 nm, and TinyChip**

*The schedule for the balance of 2014 will be posted when available*

Technology		Customer Submission Date											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
28 nm	28 nm					12 26	16	14	11	15	13	10	
40 nm	40 nm	6 13	3 24	31		5 27	30	28	25	29	27		
45 nm	45 nm	13	3 24	31		5 27	30	28	25	29	27		
65 nm	65 nm	13 27	10 24	10 24	14 28	12	9 23	14 28	11 25	8 22	13	24	
TinyChip 65nm	65 nm		18 (5)			27 (5)				29 p (5)			
90 nm	90 nm	27	18	17	14	19	16	21	18	15	20	10	
TinyChip 90nm	90 nm				14 (5)				18 p (5)			17 p (5)	
CL018HV	0.18 µm		3 (7)	24 (10)			2 (10)		4 (10)	2 (17) 22 (10)		3 (10)	1 (10)
CL035HV_BCD	0.35 µm								11 (10)				
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

<sup>p</sup> Projected

(5) Access restricted to university accounts.

(7) Supported voltages: 1.8/3.3/32

(10) Supported voltages: 3.3,/20/23/Vg3.3V,

3.3/5/12/15/20/40/Vg3.3/5.12V

(16) BCD

(17) BCD Gen-2

Dedicated (COT) runs through MOSIS are also available in the above processes. Dedicated runs can be scheduled to start at any time.

## austriamicrosystems (AMS) Fabrication Schedule

AMS featured processes:

0.18 µm in both CMOS and HV CMOS

0.35 µm

2014 Fabrication Schedule

Technology		Customer Submission Date											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
C18	0.18 µm			3			2			2			1
H18	0.18 µm			3			2			2			1
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Dedicated (COT) runs through MOSIS are also available in the above processes. Dedicated runs can be scheduled to start at any time.

## ON Semiconductor Fabrication Schedule

ON Semi featured CMOS processes

I3T80 (0.35 µm), C5 (0.5 µm), and I2T100 (0.7 µm) CMOS

2014 Fabrication Schedule

Technology		Customer Submission Date											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
C5F/C5N	0.50 µm	21 <sup>m</sup> 27		24		19		14 <sup>m</sup> 21		22			1
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

<sup>m</sup>Mosis Education Program Only. No commercial submissions will be accepted for these runs.

Dedicated (COT) runs through MOSIS are also available in the above processes. Dedicated runs can be scheduled to start at any time.

**ICC:**

索引：

[TSMC 40nm](#)[SMIC 40nm](#)[TSMC 55nm](#)[TSMC 65nm](#)[SMIC 65nm](#)[GF 65nm](#)[TSMC 90nm](#)[TSMC 0.13um](#)[SMIC 0.13um](#)[GF 0.13um](#)[TJ 0.13um](#)[TSMC 0.18um](#)[SMIC 0.18um](#)[GF 0.18um](#)[TJ 0.18um](#)[TSMC 0.25um](#)[TSMC 0.35um](#)[SMIC 0.35um](#)[GF 0.35um](#)

MPW shuttle	Technology(工艺)	项目申请截止日期	数据递交截止日期
TM0401401	Logic, 40LP (1.1/1.8V,1.1/2.5V) Mixed-Signal/RF,40LP (1.1/1.8V,1.1/2.5V) Logic,45GS(45GS=40G) (0.9V/1.8V,0.9V/2.5V)	2013/12/30	2014/01/10
TM0401402	Logic, 40LP (1.1/1.8V,1.1/2.5V) Mixed-Signal/RF,40LP (1.1/1.8V,1.1/2.5V) Logic,45GS(45GS=40G) (0.9V/1.8V,0.9V/2.5V)	2014/01/30	2014/02/17
TM0401403	Logic, 40LP (1.1/1.8V,1.1/2.5V) Mixed-Signal/RF,40LP (1.1/1.8V,1.1/2.5V) Logic,45GS(45GS=40G) (0.9V/1.8V,0.9V/2.5V)	2014/02/26	2014/03/07
TM0401404	Logic, 40LP (1.1/1.8V,1.1/2.5V) Mixed-Signal/RF,40LP (1.1/1.8V,1.1/2.5V) Logic,45GS(45GS=40G) (0.9V/1.8V,0.9V/2.5V)	2014/03/18	2014/03/28
TM0401405	Logic, 40LP (1.1/1.8V,1.1/2.5V) Mixed-Signal/RF,40LP (1.1/1.8V,1.1/2.5V) Logic,45GS(45GS=40G) (0.9V/1.8V,0.9V/2.5V)	2014/04/22	2014/05/05
TM0401406	Logic, 40LP (1.1/1.8V,1.1/2.5V) Mixed-Signal/RF,40LP (1.1/1.8V,1.1/2.5V) Logic,45GS(45GS=40G) (0.9V/1.8V,0.9V/2.5V)	2014/05/27	2014/06/09
TM0401407	Logic, 40LP (1.1/1.8V,1.1/2.5V) Mixed-Signal/RF,40LP (1.1/1.8V,1.1/2.5V) Logic,45GS(45GS=40G) (0.9V/1.8V,0.9V/2.5V)	2014/06/23	2014/06/30

TM0401408	Logic, 40LP (1.1/1.8V,1.1/2.5V) Mixed-Signal/RF,40LP (1.1/1.8V,1.1/2.5V) Logic,45GS(45GS=40G) (0.9V/1.8V,0.9V/2.5V)	2014/07/28	2014/08/04
TM0401409	Logic, 40LP (1.1/1.8V,1.1/2.5V) Mixed-Signal/RF,40LP (1.1/1.8V,1.1/2.5V) Logic,45GS(45GS=40G) (0.9V/1.8V,0.9V/2.5V)	2014/08/22	2014/08/29
TM0401410	Logic, 40LP (1.1/1.8V,1.1/2.5V) Mixed-Signal/RF,40LP (1.1/1.8V,1.1/2.5V) Logic,45GS(45GS=40G) (0.9V/1.8V,0.9V/2.5V)	2014/09/22	2014/09/29
TM0401411	Logic, 40LP (1.1/1.8V,1.1/2.5V) Mixed-Signal/RF,40LP (1.1/1.8V,1.1/2.5V) Logic,45GS(45GS=40G) (0.9V/1.8V,0.9V/2.5V)	2014/10/27	2014/11/03
TM0401412	Logic, 40LP (1.1/1.8V,1.1/2.5V) Mixed-Signal/RF,40LP (1.1/1.8V,1.1/2.5V) Logic,45GS(45GS=40G) (0.9V/1.8V,0.9V/2.5V)	2014/11/24	2014/12/01
SM0401402	IO=1.8/2.5 IO=1.8V/IO=2.5V	2014/02/18	2014/02/25
SM0401404	IO=1.8/2.5 IO=1.8V/IO=2.5V	2014/04/15	2014/04/22
SM0401406	IO=1.8/2.5 IO=1.8V/IO=2.5V	2014/06/17	2014/06/24
SM0401408	IO=1.8/2.5 IO=1.8V/IO=2.5V	2014/08/19	2014/08/26
SM0401410	IO=1.8/2.5 IO=1.8V/IO=2.5V	2014/10/21	2014/10/28
SM0401412	IO=1.8/2.5 IO=1.8V/IO=2.5V	2014/12/16	2014/12/23
TM0551401	TSMC 55nm Logic,G Plus Logic,LP Mixed-signal/RF,LP	2013/12/24	2013/01/06
TM0551402	TSMC 55nm Logic,G Plus Logic,LP Mixed-signal/RF,LP	2014/01/24	2014/02/10
TM0551403	TSMC 55nm Logic,G Plus Logic,LP Mixed-signal/RF,LP	2014/02/25	2014/03/07
TM0551404	TSMC 55nm Logic,G Plus Logic,LP Mixed-signal/RF,LP	2014/03/25	2014/03/28
TM0551405	TSMC 55nm Logic,G Plus Logic,LP Mixed-signal/RF,LP	2014/04/29	2014/05/05

TM0551406	TSMC 55nm Logic,G Plus Logic,LP Mixed-signal/RF,LP	2014/05/27	2014/05/30
TM0551407	TSMC 55nm Logic,G Plus Logic,LP Mixed-signal/RF,LP	2014/06/30	2014/07/07
TM0551408	TSMC 55nm Logic,G Plus Logic,LP Mixed-signal/RF,LP	2014/08/04	2014/08/11
TM0551409	TSMC 55nm Logic,G Plus Logic,LP Mixed-signal/RF,LP	2014/09/01	2014/09/08
TM0551410	TSMC 55nm Logic,G Plus Logic,LP Mixed-signal/RF,LP	2014/09/22	2014/09/29
TM0551411	TSMC 55nm Logic,G Plus Logic,LP Mixed-signal/RF,LP	2014/11/03	2014/11/10
TM0551412	TSMC 55nm Logic,G Plus Logic,LP Mixed-signal/RF,LP	2014/12/01	2014/12/08
TM0651401	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2013/12/24	2014/01/06
TM0651402A	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/01/24	2014/02/10
TM0651402B	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/02/12	2014/02/24
TM0651403A	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/02/25	2014/03/07
TM0651403B	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/03/12	2014/03/24
TM0651404A	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/03/25	2014/04/05
TM0651404B	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/04/09	2014/04/19
TM0651405A	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/04/29	2014/05/12
TM0651405B	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/05/14	2014/05/26
TM0651406A	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO	2014/05/27	2014/06/09

	Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP		
TM0651406B	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/06/11	2014/06/23
TM0651407A	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/06/30	2014/07/07
TM0651407B	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/07/14	2014/07/21
TM0651408A	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/08/04	2014/08/11
TM0651408B	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/08/15	2014/08/22
TM0651409A	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/09/01	2014/09/08
TM0651409B	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/09/15	2014/09/22
TM0651410A	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/09/22	2014/09/29
TM0651410B	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/10/13	2014/10/20
TM0651411A	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/11/03	2014/11/10
TM0651411B	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/11/17	2014/11/24
TM0651412A	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/12/01	2014/12/08
TM0651412B	TSMC 65nm CMOS 1P9M Logic, G Plus/DGO Logic, LP/DGO/TGO Mixed-Signal/RF,GP/LP	2014/12/15	2014/12/22
SM0651402	1p9m IO=1.8/2.5/3.3V CMOS Logic, Mixed Signal LL	2014/01/29	2014/02/11
SM0651404	1p9m IO=1.8/2.5/3.3V CMOS Logic, Mixed Signal LL	2014/03/31	2014/04/08
SM0651406	1p9m IO=1.8/2.5/3.3V CMOS Logic, Mixed Signal LL	2014/06/03	2014/06/10

SM0651408	1p9m IO=1.8/2.5/3.3V CMOS Logic, Mixed Signal LL	2014/08/05	2014/08/12
SM0651410	1p9m IO=1.8/2.5/3.3V CMOS Logic, Mixed Signal LL	2014/09/30	2014/10/07
SM0651412	1p9m IO=1.8/2.5/3.3V CMOS Logic, Mixed Signal LL	2014/12/02	2014/12/09
GF0651402	65G/65LPW/55LPE	2013/12/09	2014/01/28
GF0651404	65G/65LPW/55LPE	2014/02/17	2014/04/14
GF0651406	65G/65LPW/55LPE	2014/04/04	2014/05/30
GF0651408	65G/65LPW/55LPE	2014/07/30	2014/08/11
GF0651410	65G/65LPW/55LPE	2014/08/25	2014/10/06
GF0651412	65G/65LPW/55LPE	2014/10/06	2014/11/17
TM0901401	TSMC 90nm CMOS 1P9M Logic, G/LP/GT Mixed-Signal/RF	2013/12/18	2013/12/25
TM0901402	TSMC 90nm CMOS 1P9M Logic, G/LP/GT Mixed-Signal/RF	2014/02/12	2014/02/24
TM0901403	TSMC 90nm CMOS 1P9M Logic, G/LP/GT Mixed-Signal/RF	2014/03/05	2014/03/17
TM0901404	TSMC 90nm CMOS 1P9M Logic, G/LP/GT Mixed-Signal/RF	2014/04/01	2014/04/14
TM0901405	TSMC 90nm CMOS 1P9M Logic, G/LP/GT Mixed-Signal/RF	2014/04/29	2014/05/12
TM0901406	TSMC 90nm CMOS 1P9M Logic, G/LP/GT Mixed-Signal/RF	2014/06/04	2014/06/16
TM0901407	TSMC 90nm CMOS 1P9M Logic, G/LP/GT Mixed-Signal/RF	2014/07/07	2014/07/14
TM0901408	TSMC 90nm CMOS 1P9M Logic, G/LP/GT Mixed-Signal/RF	2014/08/11	2014/08/18
TM0901409	TSMC 90nm CMOS 1P9M Logic, G/LP/GT Mixed-Signal/RF	2014/09/08	2014/09/15

TM0901410	TSMC 90nm CMOS 1P9M Logic, G/LP/GT Mixed-Signal/RF	2014/10/06	2014/10/13
TM0901411	TSMC 90nm CMOS 1P9M Logic, G/LP/GT Mixed-Signal/RF	2014/11/10	2014/11/17
TM0901412	TSMC 90nm CMOS 1P9M Logic, G/LP/GT Mixed-Signal/RF	2014/12/01	2014/12/08
TM1301401	TSMC 0.13um CMOS 1P8M Logic,G/LV/LP;FSG Mixed-Signal/RF,G (1.2/2.5V,1.2/3.3V);FSG	2013/12/31	2014/01/08
TM1301402	TSMC 0.13um CMOS 1P8M Logic,G/LV/LP;FSG Mixed-Signal/RF,G (1.2/2.5V,1.2/3.3V);FSG	2014/01/30	2014/02/17
TM1301403	TSMC 0.13um CMOS 1P8M Logic,G/LV/LP;FSG Mixed-Signal/RF,G (1.2/2.5V,1.2/3.3V);FSG	2014/03/10	2014/03/20
TM1301404	TSMC 0.13um CMOS 1P8M Logic,G/LV/LP;FSG Mixed-Signal/RF,G (1.2/2.5V,1.2/3.3V);FSG	2014/04/16	2014/04/28
TM1301405	TSMC 0.13um CMOS 1P8M Logic,G/LV/LP;FSG Mixed-Signal/RF,G (1.2/2.5V,1.2/3.3V);FSG	2014/05/07	2014/05/19
TM1301406	TSMC 0.13um CMOS 1P8M Logic,G/LV/LP;FSG Mixed-Signal/RF,G (1.2/2.5V,1.2/3.3V);FSG	2014/06/04	2014/06/16
TM1301407	TSMC 0.13um CMOS 1P8M Logic,G/LV/LP;FSG Mixed-Signal/RF,G (1.2/2.5V,1.2/3.3V);FSG	2013/07/14	2014/07/21
TM1301408	TSMC 0.13um CMOS 1P8M Logic,G/LV/LP;FSG Mixed-Signal/RF,G (1.2/2.5V,1.2/3.3V);FSG	2014/08/18	2014/08/25
TM1301409	TSMC 0.13um CMOS 1P8M Logic,G/LV/LP;FSG Mixed-Signal/RF,G (1.2/2.5V,1.2/3.3V);FSG	2014/09/15	2014/09/22
TM1301410	TSMC 0.13um CMOS 1P8M Logic,G/LV/LP;FSG Mixed-Signal/RF,G (1.2/2.5V,1.2/3.3V);FSG	2014/10/20	2014/10/27
TM1301411	TSMC 0.13um CMOS 1P8M Logic,G/LV/LP;FSG Mixed-Signal/RF,G (1.2/2.5V,1.2/3.3V);FSG	2014/11/14	2014/11/21
TM1301412	TSMC 0.13um CMOS 1P8M Logic,G/LV/LP;FSG Mixed-Signal/RF,G (1.2/2.5V,1.2/3.3V);FSG	2014/12/08	2014/12/15
SM1301401	1P8M IO=3.3V CMOS Logic, Mixed Signal RF	2014/01/07	2014/01/14

SM1301402	1P8M IO=3.3V CMOS Logic, Mixed Signal RF	2014/02/11	2014/02/18
SM1301403A	IO=3.3V/5V Adv.emb-EEPROM(Cu-BEOL)(LL)	2014/02/25	2014/03/04
SM1301403B	IO=3.3V/5V Adv.emb-EEPROM(Cu-BEOL)(LL)	2014/03/18	2014/03/25
SM1301404	1P8M IO=3.3V CMOS Logic, Mixed Signal RF	2014/03/25	2014/04/01
SM1301405	1P8M IO=3.3V CMOS Logic, Mixed Signal RF	2014/04/28	2014/05/06
SM1301406	1P8M IO=3.3V CMOS Logic, Mixed Signal RF	2014/06/10	2014/06/17
SM1301407A	IO=3.3/5V IO=5V Adv. emb-EEPROM (Cu-BEOL) (LL)	2014/06/24	2014/07/01
SM1301407B	IO=3.3/5V Adv. emb-Flash (Cu-BEOL) (LL)	2014/07/15	2014/07/22
SM1301407C	IO=3.3V CMOS Logic (GE) ; IO=3.3V Mixed Signal (GE)	2014/07/22	2014/07/29
SM1301409	IO=3.3V CMOS Logic (GE) ; IO=3.3V Mixed Signal (GE)	2014/09/02	2014/09/09
SM1301410	IO=3.3V CMOS Logic (GE) ; IO=3.3V Mixed Signal (GE)	2014/10/07	2014/10/14
SM1301411A	IO=3.3/5V IO=5V Adv. emb-EEPROM (Cu-BEOL) (LL)	2014/10/28	2014/11/04
SM1301411B	IO=3.3/5V Adv. emb-Flash (Cu-BEOL) (LL)	2014/11/18	2014/11/25
SM1301411C	IO=3.3V CMOS Logic (GE) ; IO=3.3V Mixed Signal (GE)	2014/11/11	2014/11/18
SM1301412	IO=3.3V CMOS Logic (GE) ; IO=3.3V Mixed Signal (GE)	2014/12/23	2014/12/30

GF1301401	GF 0.13um CMOS 1P8M LOGIC/Mixed-Signal 1.2/2.5V	2013/11/12	2014/01/07
GF1301403	GF 0.13um CMOS 1P8M LOGIC/Mixed-Signal 1.2/2.5V	2014/01/14	2014/03/11
GF1301405	GF 0.13um CMOS 1P8M LOGIC/Mixed-Signal 1.2/2.5V	2014/03/18	2014/05/13
GF1301406	GF 0.13um CMOS 1P8M LOGIC/Mixed-Signal 1.2/2.5V	2014/04/22	2014/06/17
GF1301407	GF 0.13um CMOS 1P8M LOGIC/Mixed-Signal	2014/06/03	2014/07/15

	1.2/2.5V		
GF1301409	GF 0.13um CMOS 1P8M LOGIC/Mixed-Signal 1.2/2.5V	2014/07/29	2014/09/09
GF1301411	GF 0.13um CMOS 1P8M LOGIC/Mixed-Signal 1.2/2.5V	2014/09/30	2014/11/11
TJ1301403	TowerJazz CMOS 0.13um 2P8M	2014/03/17	2014/03/24
TJ1301411	TowerJazz CMOS 0.13um 2P8M	2014/11/10	2014/11/24
TM1801401A	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) High Voltage (1.8/5/32V,1.8/3.3/32V/40V)	2013/12/24	2013/12/31
TM1801401B	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) High Voltage (1.8/5/32V,1.8/3.3/32V/40V)	2013/12/30	2014/01/10
TM1801402A	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) High Voltage (1.8/5/32V,1.8/3.3/32V/40V)	2014/01/24	2014/02/10
TM1801402B	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) High Voltage (1.8/5/32V,1.8/3.3/32V/40V)	2014/01/30	2014/02/17
TM1801402C	TSMC 0.18um CMOS Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V) EmbFlash(1.8/3.3V)	2014/02/12	2014/02/24
TM1801403A	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) High Voltage (1.8/5/32V,1.8/3.3/32V/40V)	2014/02/26	2014/03/10
TM1801403B	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) High Voltage (1.8/5/32V,1.8/3.3/32V/40V)	2014/03/05	2014/03/17

TM1801403C	TSMC 0.18um CMOS Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V) EmbFlash(1.8/3.3V)	2014/03/12	2014/03/24
TM1801404A	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) High Voltage (1.8/5/32V,1.8/3.3/32V/40V)	2014/03/25	2014/04/07
TM1801404B	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) High Voltage (1.8/5/32V,1.8/3.3/32V/40V)	2014/04/01	2014/04/14
TM1801404C	TSMC 0.18um CMOS Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V) EmbFlash(1.8/3.3V)	2014/04/09	2014/04/21
TM1801405A	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) High Voltage (1.8/5/32V,1.8/3.3/32V/40V)	2014/04/29	2014/05/12
TM1801405B	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) High Voltage (1.8/5/32V,1.8/3.3/32V/40V)	2014/05/07	2014/05/19
TM1801405C	TSMC 0.18um CMOS Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V) EmbFlash(1.8/3.3V)	2014/05/14	2014/05/26
TM1801406A	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) High Voltage (1.8/5/32V,1.8/3.3/32V/40V)	2014/05/27	2014/06/09
TM1801406B	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) High Voltage (1.8/5/32V,1.8/3.3/32V/40V)	2014/06/04	2014/06/16
TM1801406C	TSMC 0.18um CMOS Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V) EmbFlash(1.8/3.3V)	2014/06/11	2014/06/23
TM1801407A	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) High Voltage (1.8/5/32V,1.8/3.3/32V/40V)	2014/06/23	2014/06/30
TM1801407B	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V)	2014/06/30	2014/07/07

	Mixed-Signal/RF,G EmbFlash(1.8/3.3V,1.8/5V) (1.8/5/32V,1.8/3.3/32V/40V)	(1.8/3.3V,1.8/5V) High Voltage		
TM1801407C	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) (1.8/5/32V,1.8/3.3/32V/40V)	High Voltage	2014/07/07	2014/07/14
TM1801408A	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) (1.8/5/32V,1.8/3.3/32V/40V)	High Voltage	2014/07/28	2014/08/04
TM1801408B	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) (1.8/5/32V,1.8/3.3/32V/40V)	High Voltage	2014/08/11	2014/08/18
TM1801408C	TSMC 0.18um CMOS Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V) EmbFlash(1.8/3.3V)		2014/08/18	2014/08/25
TM1801409A	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) (1.8/5/32V,1.8/3.3/32V/40V)	High Voltage	2014/09/01	2014/09/08
TM1801409B	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) (1.8/5/32V,1.8/3.3/32V/40V)	High Voltage	2014/09/08	2014/09/15
TM1801409C	TSMC 0.18um CMOS Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V) EmbFlash(1.8/3.3V)		2014/09/12	2014/09/19
TM1801410A	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) (1.8/5/32V,1.8/3.3/32V/40V)	High Voltage	2014/09/22	2014/09/29
TM1801410B	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) (1.8/5/32V,1.8/3.3/32V/40V)	High Voltage	2014/10/13	2014/10/20
TM1801410C	TSMC 0.18um CMOS Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V) EmbFlash(1.8/3.3V)		2014/10/20	2014/10/27

TM1801411A	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) High Voltage (1.8/5/32V,1.8/3.3/32V/40V)	2014/11/03	2014/11/10
TM1801411B	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) High Voltage (1.8/5/32V,1.8/3.3/32V/40V)	2014/11/10	2014/11/17
TM1801411C	TSMC 0.18um CMOS Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V) EmbFlash(1.8/3.3V)	2014/11/17	2014/11/24
TM1801412A	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) High Voltage (1.8/5/32V,1.8/3.3/32V/40V)	2014/12/01	2014/12/08
TM1801412B	TSMC 0.18um CMOS 1P6M Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V,1.8/5V) EmbFlash(1.8/3.3V,1.8/5V) High Voltage (1.8/5/32V,1.8/3.3/32V/40V)	2014/12/08	2014/12/15
TM1801412C	TSMC 0.18um CMOS Logic,G(1.8V/3.3V) Mixed-Signal/RF,G (1.8/3.3V) EmbFlash(1.8/3.3V)	2014/12/15	2014/12/22
SM1801402	SMIC 0.18um CMOS 1P6M Logic / Mixed-Signal 3.3V	2014/01/24	2014/02/04
SM1801403	SMIC 0.18um CMOS 1P6M Logic / Mixed-Signal 3.3V	2014/03/04	2014/03/11
SM1801404EF	SMIC 0.18um EEPROM embedded (GE) IO=1.8V/3.3V IO=5V	2014/03/31	2014/04/08
SM1801404	SMIC 0.18um CMOS 1P6M Logic / Mixed-Signal 3.3V	2014/04/08	2014/04/15
SM1801405EF	SMIC 0.18um embedded Flash (EM) IO=1.8V/3.3V IO=5V	2014/04/28	2014/05/06
SM1801405	SMIC 0.18um CMOS 1P6M Logic / Mixed-Signal 3.3V	2014/05/13	2014/05/20
SM1801406	SMIC 0.18um CMOS 1P6M Logic / Mixed-Signal 3.3V	2014/06/17	2014/06/24

SM1801408	IO=3.3V CMOS Logic (GE),IO=3.3V Mixed Signal (GE),IO=5V Mixed Signal (PM), IO=3.3/5V IO=5V EEPROM embedded (GE)	2014/07/29	2014/08/05
SM1801409	IO=3.3V CMOS Logic (GE),IO=3.3V Mixed Signal (GE)	2014/09/02	2014/09/09
SM1801410A	IO=3.3V CMOS Logic (GE),IO=3.3V Mixed Signal (GE)	2014/10/07	2014/10/14
SM1801410B	IO=3.3/5V IO=5V Embedded Flash (EM)	2014/10/14	2014/10/21
SM1801411	IO=3.3V CMOS Logic (GE),IO=3.3V Mixed Signal (GE)	2014/11/11	2014/11/18
SM1801412A	IO=3.3/5V IO=5V Embedded Flash (EM)	2014/11/25	2014/12/02
SM1801412B	IO=3.3V CMOS Logic (GE),IO=3.3V Mixed Signal (GE),IO=5V Mixed Signal (PM)	2014/12/16	2014/12/23
GF1801401	GF 0.18um CMOS 1P6M Logic,Mixed-Signal,ULL 1.8V/3.3V	2013/11/26	2014/01/21
GF1801402	GF 0.18um CMOS 1P6M Logic,Mixed-Signal,ULL 1.8V/3.3V	2013/12/24	2014/02/18
GF1801404	GF 0.18um CMOS 1P6M Logic,Mixed-Signal,ULL 1.8V/3.3V	2014/01/30	2014/03/31
GF1801406	GF 0.18um CMOS 1P6M Logic,Mixed-Signal,ULL 1.8V/3.3V	2014/04/01	2014/05/26
GF1801408	GF 0.18um CMOS 1P6M Logic,Mixed-Signal,ULL 1.8V/3.3V	2013/06/17	2014/07/29
GF1801410	GF 0.18um CMOS 1P6M Logic,Mixed-Signal,ULL 1.8V/3.3V	2014/08/12	2014/09/23
GF1801412	GF 0.18um CMOS 1P6M Logic,Mixed-Signal,ULL 1.8V/3.3V	2014/10/07	2014/11/18
TJ1801401	TowerJazz 0.18um Stand Logic/Power Management 2P6M	2014/01/13	2014/01/20
TJ1801403	TowerJazz 0.18um Stand Logic/Power Management 2P6M	2014/02/24	2014/03/03

TJ1801405	TowerJazz 0.18um Stand Logic/Power Management 2P6M	2014/05/05	2014/05/12
TJ1801406	TowerJazz 0.18um Stand Logic/Power Management 2P6M	2014/06/16	2014/06/23
TJ1801409	CMOS+ 0.16um, 0.18um RF, RFID, 2P6M	2014/08/25	2014/09/08
TJ1801410	CMOS+ 0.16um, 0.18um RF, RFID, 2P6M	2014/10/13	2014/10/27
TJ1801412	CMOS+ 0.16um, 0.18um RF, RFID, 2P6M	2014/11/24	2014/12/08
TM2501401A	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V)	2013/12/18	2013/12/25
TM2501401B	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V) High Voltage, BCD	2013/12/30	2014/01/10
TM2501402	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V) High Voltage, BCD	2014/01/24	2014/02/10
TM2501403A	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V)	2014/02/26	2014/03/10
TM2501403B	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V) High Voltage, BCD	2014/03/05	2014/03/17
TM2501404	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V) High Voltage, BCD	2014/04/01	2014/04/14
TM2501405A	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V)	2014/04/22	2014/05/05
TM2501405B	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V) High Voltage, BCD	2014/05/07	2014/05/19
TM2501406	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V) High Voltage, BCD	2014/06/11	2014/06/23
TM2501407A	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V)	2014/06/30	2014/07/07

TM2501407B	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V) High Voltage, BCD	2014/07/07	2014/07/14
TM2501408	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V) High Voltage, BCD	2014/07/28	2014/08/04
TM2501409A	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V)	2014/09/01	2014/09/08
TM2501409B	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V) High Voltage, BCD	2014/09/08	2014/09/15
TM2501410	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V) High Voltage, BCD	2014/10/06	2014/10/13
TM2501411A	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V)	2014/10/27	2014/11/03
TM2501411B	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V) High Voltage, BCD	2014/11/10	2014/11/17
TM2501412	TSMC 0.25um CMOS 1P5M Logic,G(2.5/3.3V, 2.5/5V) Mixed-Signal/RF,G(2.5/3.3V, 2.5/5V) High Voltage, BCD	2014/11/24	2014/12/01
TM3501401	TSMC 0.35um CMOS 2P4M Logic,G(3.3V/5V) Mixed-Signal, G(3.3V/5V)	2013/12/18	2013/12/25
TM3501402	TSMC 0.35um SiGe BiCMOS, G (3.3V)	2014/02/12	2014/02/24
TM3501403	TSMC 0.35um CMOS 2P4M Logic,G(3.3V/5V) Mixed-Signal, G(3.3V/5V)	2014/02/19	2014/03/03
TM3501405A	TSMC 0.35um CMOS 2P4M Logic,G(3.3V/5V) Mixed-Signal, G(3.3V/5V)	2014/04/22	2014/05/05
TM3501405B	TSMC 0.35um SiGe BiCMOS, G (3.3V)	2014/05/14	2014/05/26
TM3501407	TSMC 0.35um CMOS 2P4M Logic,G(3.3V/5V) Mixed-Signal, G(3.3V/5V)	2014/06/23	2014/06/30
TM3501408	TSMC 0.35um SiGe BiCMOS, G (3.3V)	2014/08/11	2014/08/18

TM3501409	TSMC 0.35um CMOS 2P4M Logic,G(3.3V/5V) Mixed-Signal, G(3.3V/5V)	2014/08/22	2014/08/29
TM3501411A	TSMC 0.35um CMOS 2P4M Logic,G(3.3V/5V) Mixed-Signal, G(3.3V/5V)	2014/10/27	2014/11/03
TM3501411B	TSMC 0.35um SiGe BiCMOS, G (3.3V)	2014/11/17	2014/11/24
SM3501407A	IO=3.3V IO=5V EEPROM embedded (GE HV)	2014/07/01	2014/07/08
SM3501407B	IO=5V IO=NAV Mixed Signal (GE)	2014/07/08	2014/07/15
GF3501403	GF 0.35um CMOS 2P4M Logic/Analog 3.3V/5V (SG/DG/EE)	2013/12/31	2014/02/25
GF3501409	GF 0.35um CMOS 2P4M Logic/Analog 3.3V/5V (SG/DG/EE)	2014/07/15	2014/08/26

IHP:

## Low-Volume & Multi-Project Service

IHP offers research partners and customers access to its powerful SiGe:C BiCMOS technologies and special integrated RF modules.

The technologies are especially suited for applications in the higher GHz bands (e.g. for wireless, broadband, radar). They provide integrated HBTs with cut-off frequencies of up to 500 GHz and integrated LDMOS devices with breakdown voltages of up to 22 V, including complementary devices.

The following SiGe:C BiCMOS Technologies are available for  
MPW & Prototyping

<b>SG25H1:</b>	A high-performance 0.25 $\mu\text{m}$ technology with npn-HBTs up to $f_T/f_{\max} = 180/220$ GHz.
<b>SG25H3:</b>	A 0.25 $\mu\text{m}$ technology with a set of npn-HBTs ranging from a higher RF performance ( $f_T/f_{\max} = 110$ GHz/180 GHz) to higher breakdown voltages up to 7 V.
<b>SGB25V:</b>	A cost-effective technology with a set of npn-HBTs up to a breakdown voltage of 7 V.
<b>SG13S:</b>	A high-performance 0.13 $\mu\text{m}$ BiCMOS with npn-HBTs up to $f_T / f_{\max} = 250/300$ GHz, with 3.3 V I/O CMOS and 1.2 V logic CMOS.
<b>SG13G2:</b>	A 0.13 $\mu\text{m}$ BiCMOS technologies with same device portfolio as SG13S but much higher bipolar performance with $f_T/f_{\max} = 300/500$ GHz

The backend offers 3 (SG13: 5) thin and 2 thick metal layers (TM1: 2  $\mu\text{m}$ , TM2: 3  $\mu\text{m}$ ).

A cadence-based mixed signal design kit is available. For high frequency designs an analogue Design Kit in ADS can be used. IHP's reusable blocks and IPs for wireless and broadband are offered to support your designs.

There is a schedule for the MPW & Prototyping runs.

- [Schedule](#)

The following Modules are available

<b>GD:</b>	Additional integrated complementary RF LDMOS devices with nLDMOS up to 22 V, pLDMOS up to -16 V breakdown voltage and an isolated nLDMOS device. (available in SGB25V)
<b>H3P:</b>	Additional pnp-HBTs with $f_T/f_{max} = 90/120$ GHz for complementary bipolar applications. (available in SG25H3)
<b>RF-MEMS switch:</b>	Additional capacitive MEMS switch devices for frequencies between 30 GHz to 110 GHz. (available in SG25H1 and SG25H3 technology)
<b>LBE:</b>	The Localized Backside Etching module is offered to remove silicon locally to improve passive performance. (available in all technologies)
<b>PIC:</b>	Additional photonic design layers together with BiCMOS BEOL layers on SOI wafers. (available in SG25H1/H3)

### Bipolar Section

SG25H1	npn1	npn2
$A_E$	$0.21 \times 0.84 \mu m^2$	$0.18 \times 0.84 \mu m^2$
Peak $f_{max}$	190 GHz	220 GHz
Peak $f_T$	190 GHz	180 GHz
$BV_{CEO}$	1.9 V	1.9 V
$BV_{CBO}$	4.5 V	5.0 V
$V_A$	40 V	40 V
$\beta$	270	260

SG25H3	High Performance	Medium Voltage	High Voltage	PNP H3P module
$A_E$	$0.22 \times 0.84 \mu m^2$	$0.22 \times 2.24 \mu m^2$	$0.22 \times 2.24 \mu m^2$	$0.22 \times 0.84 \mu m^2$
Peak $f_{max}$	180 GHz	140 GHz	80 GHz	120 GHz
Peak $f_T$	110 GHz	45 GHz	25 GHz	90 GHz
$BV_{CEO}$	2.3 V	5 V	>7 V	-2.5 V
$BV_{CBO}$	6.0 V	15.5 V	21.0 V	-4.0 V
$V_A$	30 V	30 V	30 V	30 V
$\beta$	150	150	150	100

SGB25V   High Performance Standard      High Voltage

$A_E$	0.42 x 0.84 $\mu\text{m}^2$	0.42 x 0.84 $\mu\text{m}^2$	0.42 x 0.84 $\mu\text{m}^2$
Peak $f_{\max}$	95 GHz	90 GHz	70 GHz
Peak $f_T$	75 GHz	45 GHz	25 GHz
$BV_{CEO}$	2.4 V	4.0 V	7.0 V
$BV_{CBO}$	>7 V	>15 V	>20 V
$V_A$	>50 V	>80 V	>100 V
$\beta$	190	190	190

SG13S	npn13P	npn13V
$A_E$	0.12 x 0.48 $\mu\text{m}^2$	0.18 x 1.02 $\mu\text{m}^2$
Peak $f_{\max}$	300 GHz	120 GHz
Peak $f_T$	250 GHz	45 GHz
$BV_{CEO}$	1.7 V	3.7 V
$BV_{CBO}$	5.0 V	15 V
$\beta$	900	600

SG13G2	npn13g2
$A_E$	0.07 x 0.90 $\mu\text{m}^2$
Peak $f_{\max}$	500 GHz
Peak $f_T$	300 GHz
$BV_{CEO}$	1.7 V
$BV_{CBO}$	4.8 V
$\beta$	650

## PIC Module

Waveguide (single-mode@1550 nm)

Deep etched 3 dB/cm

Shallow etched 1 dB/cm

Ge Photodetector (@1550 nm)

Responsivity (internal) 0.6 A/W

3 dB Bandwidth > 25 GHz

## CMOS Section

SG25H1/H3*	SG13S***
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Core Supply Voltage		2.5 V	3.3 V	1.2 V
nMOS	$V_{TH}$	0.6 V	0.65 V	0.49 V
	$I_{OUT}^{**}$	540 $\mu A/\mu m$	520 $\mu A/\mu m$	500 $\mu A/\mu m$
	$I_{OFF}$	3 pA/ $\mu m$	10 pA/ $\mu m$	500 pA/ $\mu m$
pMOS	$V_{TH}$	-0.6 V	-0.61 V	-0.42 V
	$I_{OUT}$	-230 $\mu A/\mu m$	-220 $\mu A/\mu m$	-210 $\mu A/\mu m$
	$I_{OFF}$	-3 pA/ $\mu m$	-10 pA/ $\mu m$	-500 pA/ $\mu m$

\* Parameters for SGB25V are similar  
 $V$

\*\*\* Parameters for SG13G2 have to be defined

### Passives Section

	SG25H1/H3	SG25V	SG13S
MIM Capacitor	1 fF/ $\mu m^2$	1 fF/ $\mu m^2$	1.5 fF/ $\mu m^2$
N Poly Resistor	210 $\Omega / \Omega$	210 $\Omega / \Omega$	-
P Poly Resistor	280 $\Omega / \Omega$	310 $\Omega / \Omega$	250 $\Omega / \Omega$
High Poly Resistor	1600 $\Omega / \Omega$	2000 $\Omega / \Omega$	1300 $\Omega / \Omega$
Varactor $C_{max}/C_{min}$	3	tbd.	tbd.
Inductor Q@5 GHz	18 (1 nH)	18 (1 nH)	18 (1 nH)
Inductor Q@10 GHz	20 (1 nH)	20 (1 nH)	20 (1 nH)
Inductor Q@5 GHz	37 (1 nH)*	37 (1 nH)*	37 (1 nH)*

\* with LBE

### GD-Module

	n-LDMOS		p-LDMOS
	NLD2GD22C	iNLD2GD13A****	PLD2GD19B
$BV_{DSS}^*$	22 V	15 V	-16 V
$V_{TH}$	0.55 V	0.6 V	-0.5 V
$I_{OUT}^{**}$	460 $\mu A/\mu m$	440 $\mu A/\mu m$	-180 $\mu A/\mu m$
$R_{ON}$	4 $\Omega mm$	4 $\Omega mm$	15 $\Omega mm$
Peak $f_{max}^{***}$	52 GHz	50 GHz	30 GHz
Peak $f_t^{***}$	20 GHz	28 GHz	9 GHz

\*@50 pA/ $\mu m$ , \*\*@ $V_G = 2.5 V$ , \*\*\*@ $V_{DS} = 4 V$ , \*\*\*\*substrate isolated

## RF MEMS switch module

Actuation voltage	25 V
$C_{on}/C_{off}$	> 10
Switching time	< 10 $\mu$ s
Temperature	-30 - 125° C
Isolation*	> 20 dB
Insertion loss*	< 1dB
Continuous power handling	13 dBm

\*@60 GHz

# MPW Schedule 2014 & 2015 and Price Information 2014

## General Technology Description

**SG25** is the basic 0.25  $\mu$ m CMOS process. It provides Nmos, Pmos, isolated Nmos and passive components such as poly resistors and MIM capacitors. In addition to the basic CMOS process 3 frontend options and 2 aluminum backend options are offered.

The standard backend option offers 3 thin metal layers and two TopMetal layers (Top-Metal1 - fourth 2  $\mu$ m thick metal layer, TopMetal2 – fifth 3  $\mu$ m thick metal layer) and a MIM layer. Together with a high dielectric stack this enables increased RF passive component performance.

**SG25H1** technology is a high performance BiCMOS technology. The bipolar module H1 is based on SiGe:C npn-HBTs with up to 190GHz transient frequencies and up to 220GHz oscillation frequencies.

**SG25H3** technology is a BiCMOS technology, too. The bipolar module H3 based on SiGe:C npn-HBT with up to 110 GHz transient frequencies and up to 180 GHz oscillation frequencies. Additionally, SiGe:C npn-HBTs with breakdown voltages (BVCEO) up to 7 V are offered.

**SG25H3P** technology is a high-performance complementary BiCMOS technology. In addition to the bipolar module from SG25H3 a high-performance SiGe:C pnp-HBT with up to 90 GHz transient frequencies and 120 GHz oscillation frequencies is offered.

**SGB25V** is a 21-mask BiCMOS process which combines a 0.25 µm CMOS core with 3 types of SiGe:C HBTs.

**SGB25RH** is a special variant of SGB25V which includes radiation hard IP for space applications.

**GD module (SGB25V)** adds, by 3 mask steps, a complementary LDMOS module to the SGB25V process (nLDMOS up to 22 V, pLDMOS up to -16 V breakdown voltage and an isolated nLDMOS device).

**SG13S** technology has a very high bipolar performance with up to 250 GHz transient frequencies and up to 300 GHz oscillation frequencies. The process offers a 7-layer Al-BEOL, including a MIM capacitor. 5 thin metal layers are based on 130 nm design rules. Two TopMetal layers (TopMetal1 - 2 µm thick metal layer, TopMetal2 – 3 µm thick metal layer) are for high Q passives. This technology offers CMOS devices with 130 nm gate length and 1.2 V core voltage and high voltage CMOS devices with 3.3 V core voltage. Further digital IP is available.

**SG13C** technology is an RF CMOS technology which includes all features of SG13S, but no bipolar HBTs.

**SG13G2** technology has a very high bipolar performance with up to 300 GHz transient frequencies and up to 500 GHz oscillation frequencies. The process offers a 7-layer Al-BEOL, including a MIM capacitor. 5 thin metal layers are based on 130 nm design rules. Two TopMetal layers (TopMetal1 - 2 µm thick metal layer, TopMetal2 – 3 µm thick metal layer) are for high Q passives. This technology offers CMOS devices with 130 nm gate length and 1.2 V core voltage and high voltage CMOS devices with 3.3 V core voltage.

**RFMEMS** module is an additional option in SG25H1 and SG25H3 technologies which offers integrated capacitive RFMEMS switch devices for frequencies between 30 GHz to 110 GHz.

**LBE** module (Localized Backside Etching) is offered in all technologies to remove silicon locally to improve passive performance.

**BEOL (only)** Backend of Line Runs are offered for testing of passive structures only. Produced are Metal1 and all layers above. These runs are offered either for 0.25 µm BEOL layer stack (SG25) or 0.13 µm layer stack (SG13). RF-MEMS switch and LBE can be ordered together with BEOL (only) runs.

**SG25\_PIC** MPW run Silicon Photonic plus SG25 Backend of Line. These runs offering Photonic devices like Waveguide implantations, a Ge Photodiode and SG25 BEOL layer stack. LBE can be used as option within this run.

## 2.1 MPW Price Information 2014

## Non Commercial Access

For European non profit and educational institutions a discount of 25 % is offered via Europractice and there is **no minimum size requirement for all runs marked with x only.**

**Further costs for using LBE module in all technologies and RFMEMS module in SG25H3 and SG25H1 are reduced to 2500 € per order and technology.**

- [www.europractice-ic.com](http://www.europractice-ic.com)

### 2.1.1 Prices for technologies

Process	Area Price / mm <sup>2</sup>
SGB25V	€ 2500
SG25H1	€ 6500
SG25H3	€ 3800
SG13S	€ 7000
SG13C	€ 4500
SG13G2	€ 7500

### 2.1.2 Prices for modules

Module (Process)	Price
GD (SGB25V)	€ 450 (per mm <sup>2</sup> )
PNP (SG25H3)	€ 2000 (per mm <sup>2</sup> )
LBE (all)	5000 € per order and technology
RFMEMS switch (H1, H3)	10000€ per order and technology
BEOL (only) 0.25µm (SG25)	€ 800 (per mm <sup>2</sup> )
BEOL (only) 0.13µm (SG13)	€ 1000 (per mm <sup>2</sup> )
SG25_PIC	€ 2000 (per mm <sup>2</sup> )

## 2.2 MPW Schedule 2014

### 2.2.1 Schedule for complete technologies

TAPE IN	Shipment	SGB25		SG25		SG13	
		V	RH	H1	H3	S (C)	G2
Nov 04, 13	Feb 14 <sup>a</sup>	x	x	x	x		
Dec 16, 13	Apr 21, 14					x	x
Feb 10, 14	May 05, 14	x	x <sup>b</sup>	x <sup>c</sup>			
Apr 07, 14	Jul 28, 14					x	x

TAPE IN	Shipment	SGB25		SG25		SG13	
		V	RH	H1	H3	S (C)	G2
Apr 28, 14	Jul 21, 14	x	x <sup>2</sup>		x		
<u>Jul 28, 14</u>	<u>Nov 18, 14</u>					x	x
Sep 01, 14	Nov 24, 14	x	x <sup>2</sup>	x <sup>1</sup>	x		
Nov 03, 14	Feb 15 <sup>3</sup>	x	x	x	x		
<u>Dec 15, 14</u>	<u>Apr 20, 15</u>					x	x

<sup>1</sup> Shipment 7 days later

<sup>2</sup> Shipment 21 days later

<sup>3</sup> Run without priority

— 0.13 µm Runs

### 2.2.2 Schedule for modules

TAPE IN	Shipment (standard)	GD	H3P	RF-MEMS switch	LBE <sup>1</sup>	TSV <sup>2</sup>
Nov 04, 13	March 14	x	x	x	x	
Feb 10, 14	May 26, 14			x	x	
Apr 28, 14	Aug 25, 14	x		x	x	
Sep 01, 14	Jan 05, 15	x	x	x	x	
Nov 03, 14	March 15			x	x	x

<sup>1</sup> Localized Backside Etching shipment 12 days later than standard shipment

<sup>2</sup> TSV shipment tbd.

### 2.2.3 BEOL (only) runs

TAPE IN	Shipment	SG25	SG13	RF-MEMS switch	LBE	SG25_PIC	TSV
March 14	May 14	x		x	x		
Aug 11, 14	Oct 14	x		x	x x		x
Oct 14	Dec 14		x		x		

## 2.3 MPW Schedule 2015

Changes are possible till October 1<sup>st</sup> 2014.

### 2.3.1 Schedule for complete technologies

TAPE IN	Shipment	SGB25		SG25		SG13	
		V	RH	H1	H3	S (C)	G2
Nov 03, 14	Feb 15	x	x <sup>2</sup>	x <sup>1</sup>	x <sup>1</sup>		
<u>Dec 15, 14</u>	<u>Apr 21, 15</u>					x	x
Feb 09, 15	May 04, 15	x	x <sup>2</sup>	x <sup>1</sup>			

TAPE IN	Shipment	SGB25		SG25		SG13	
		V	RH	H1	H3	S (C)	G2
Apr 20, 15	Jul 13, 15	x	x <sup>2</sup>		x		
<u>Aug 24, 15</u>	<u>Dec 14, 15</u>					x	x
Sep 07, 15	Nov 30, 15	x	x <sup>2</sup>	x <sup>1</sup>	x		
<u>Dec 14, 15</u>	<u>Apr 20, 16</u>					x	x

<sup>1</sup> Shipment 7 days later

<sup>2</sup> Shipment 21 days later

<sup>3</sup> Run without priority

– 0.13 µm Runs

### 2.3.2 Schedule for modules

TAPE IN	Shipment (standard)	GD	H3P	RF-MEMS switch <sup>1</sup>	LBE <sup>1</sup>	TSV <sup>2</sup>
Nov 03, 14	March 15			x	x	x
Feb 09, 15	May 25, 15	x	x	x	x	
Apr 28, 15	Aug 24, 15			x	x	x
Sep 07, 15	Jan 18, 16	x	x	x	x	

<sup>1</sup> Localized Backside Etching shipment 12 days later than standard shipment

<sup>2</sup> TSV shipment tbd.

## 2.4 Information on Minimum Size per MPW Run 2014

There is no minimum area request if a technology or module is offered in schedule tables under point 2.2 and 2.3.

If this is not the case, a technology or module can be ordered with a minimum area given in the following table. A waiver from foundry and registration 4 weeks before TAPE out is necessary in this case.

Process	Min Area [mm <sup>2</sup> ]	Min Area <sup>1</sup> for Discount
SG25H1	10	10
SG25H3	12	15
SG25H3P	10	12
SGB25V	–	17
SGB25RH	10	20
GD-Module	15	20
SG13S	–	10
SG13C	–	no
SG13G2	–	10

<sup>1</sup> Ask for special price if you need more than this area for one MPW run