

Innovative semiconductor solutions for energy efficiency, mobility and security



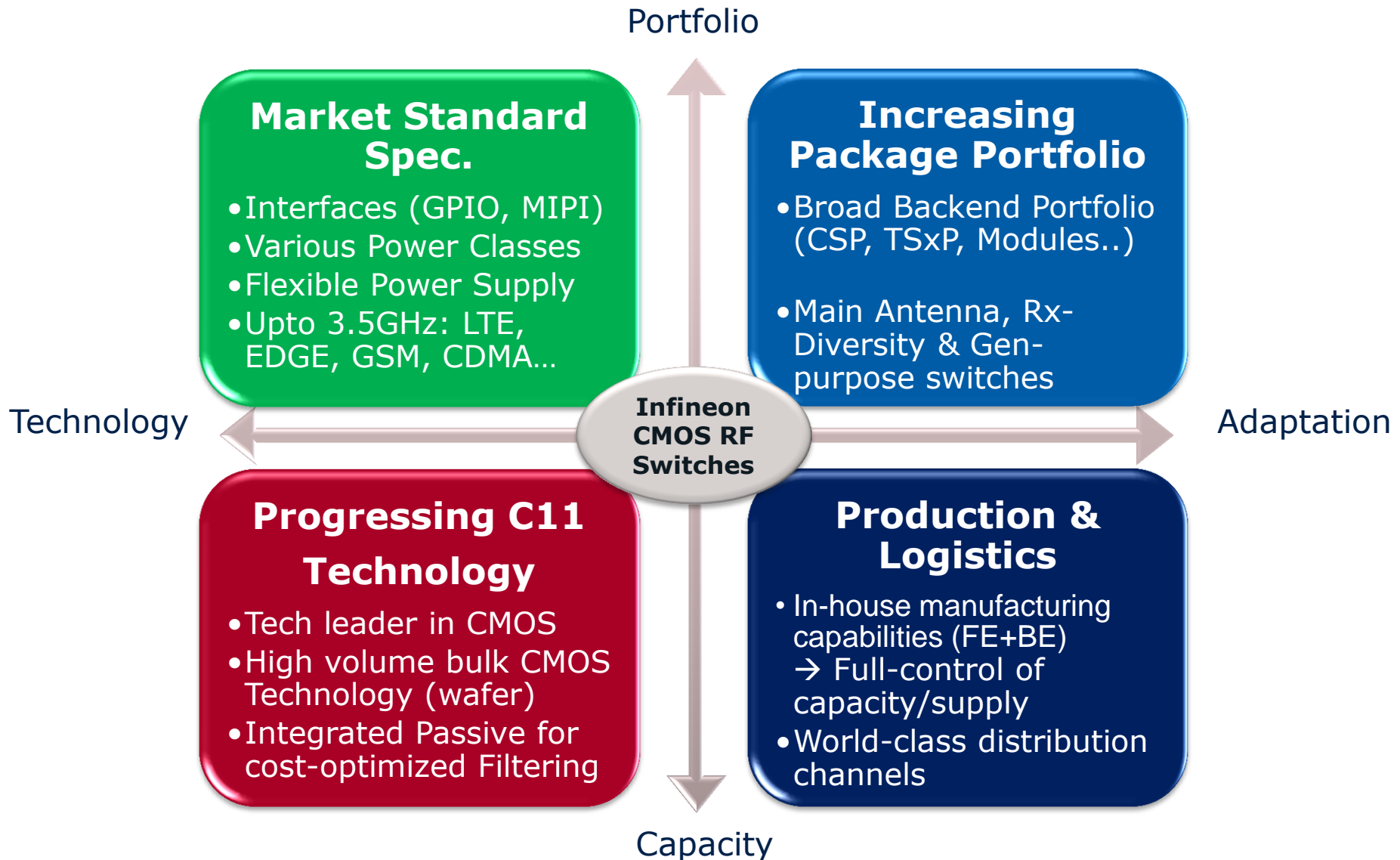
Infineon Bulk CMOS RF Switches (Packaged)



2013 June

Infineon CMOS RF Switches

Feature Set



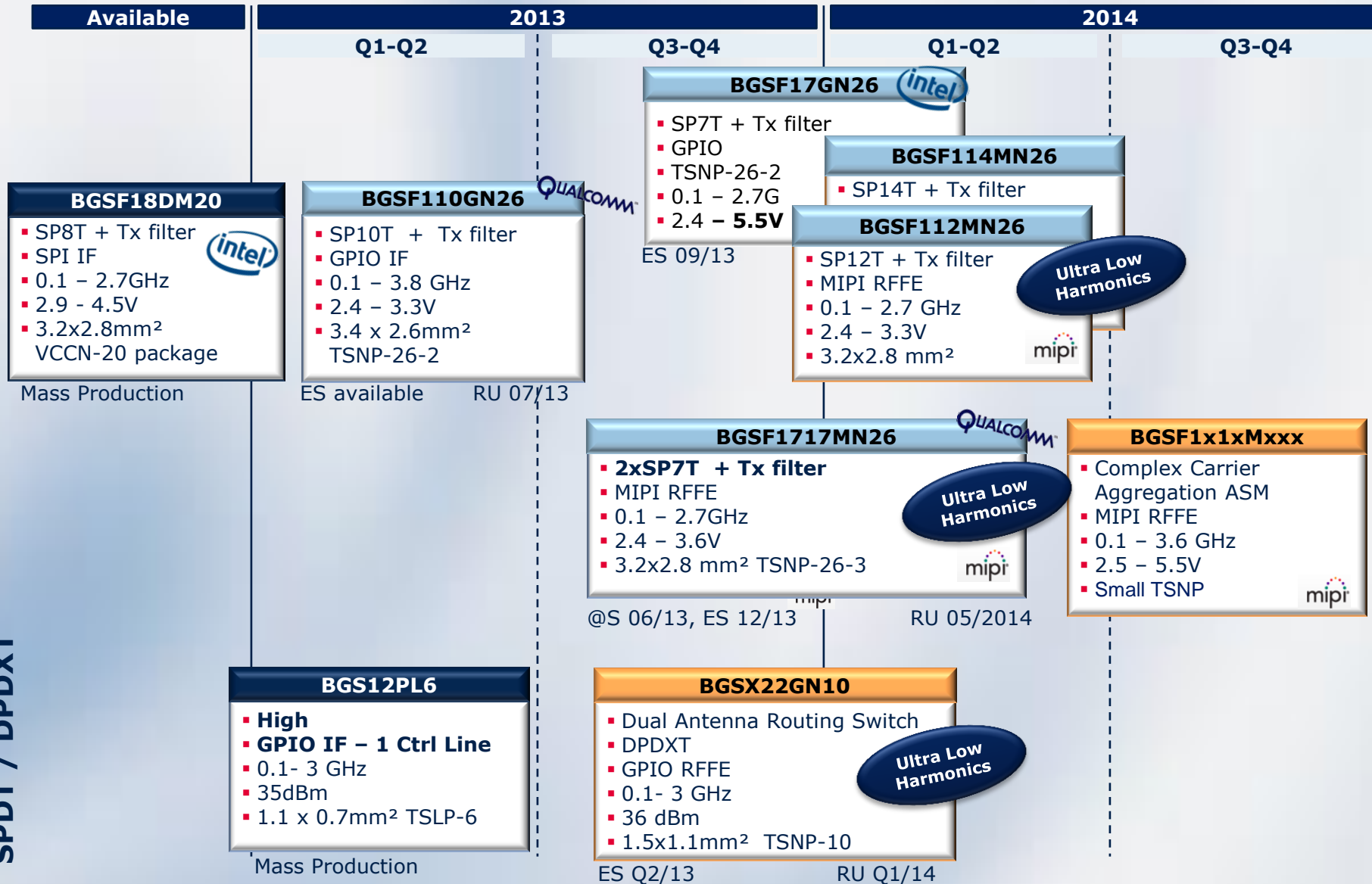
Infineon CMOS RF Switch Portfolio

Primary Antenna Switches



Antenna Switch Modules

High Power
SPDT / DPDXT



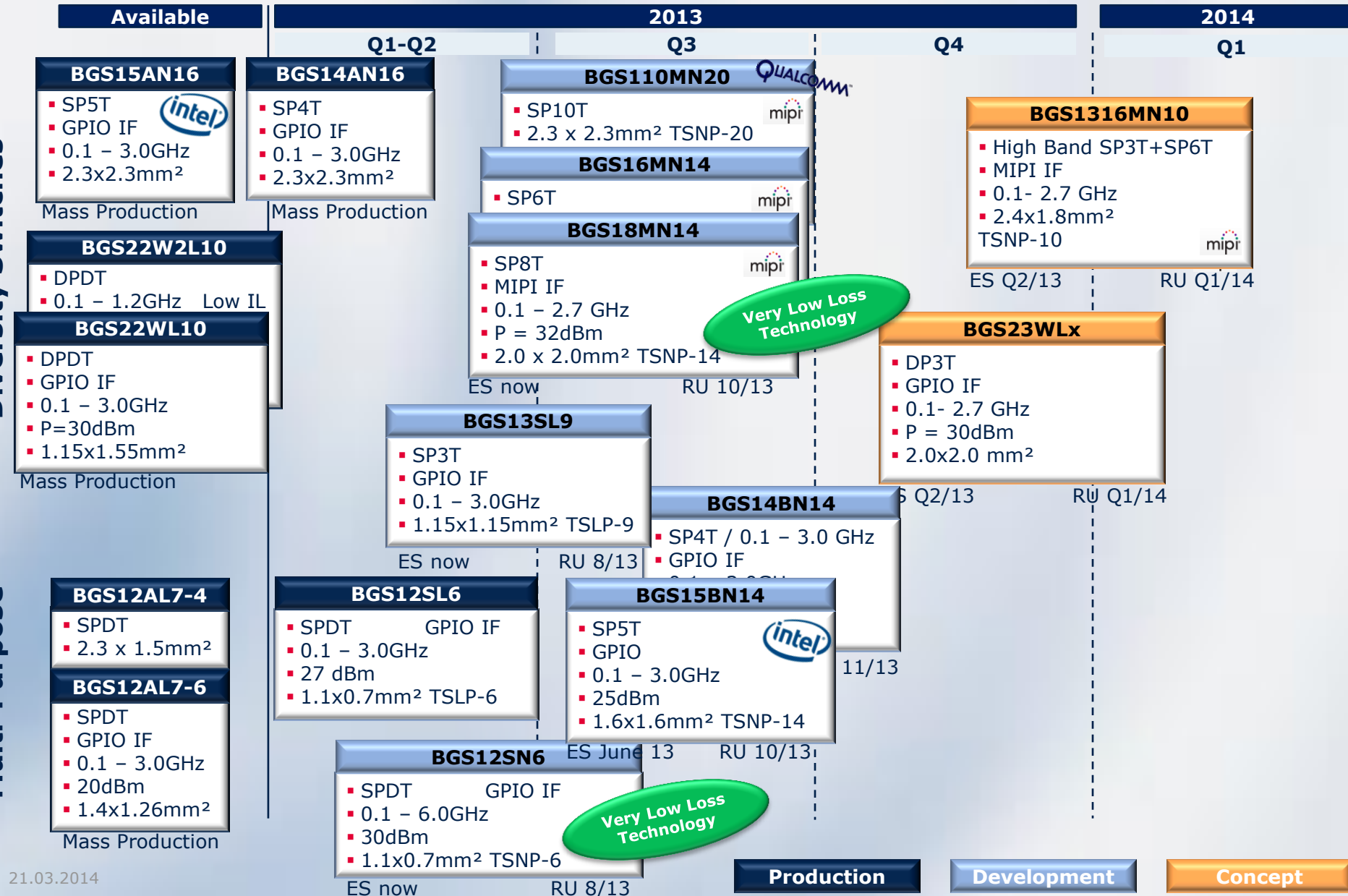
Infineon CMOS RF Switch Portfolio

RX-Diversity & Multi-Purpose Switches



Diversity Switches

Multi-Purpose



Very Low Loss Technology

Very Low Loss Technology

Production

Development

Concept

Available Packaged Switches

RF Switch Modules, Diversity and Multi-Purpose



Part	Switch Type	Ctrl	Power	Description
BGSF18DM20 2.8x3.2 mm ²	SP8T ASM	SPI	36 dBm	Antenna Switch Module
BGS12PL6 0.7x1.1 mm ²	SPDT	GPIO	35 dBm	High Power Band/Mode selection, 0.1 - 3 GHz
BGS12SL6 0.7x1.1 mm ²	SPDT	GPIO	27 dBm	Medium Power Band/Mode selection, 0.1 - 3 GHz
BGS15AN16 2.3x2.3 mm ²	SP5T	GPIO	30 dBm	RX-Diversity, 0.1 - 3 GHz
BGS14AN16 2.3x2.3 mm ²	SP4T	GPIO	30 dBm	RX-Diversity, 0.1 - 3 GHz
BGS22W2L10 1.55x1.15 mm ²	DPDT	GPIO	24 dBm	Low band optimized, band selection, 0.1 - 1 GHz
BGS22WL10 1.55x1.15 mm ²	DPDT	GPIO	30 dBm	band selection, 0.1 - 3 GHz
BGS12AL7-6 1.26x1.4 mm ²	SPDT	GPIO	24 dBm	Multi-purpose, 0.1 - 3 GHz
BGS12AL7-4 1.5x2.3 mm ²	SPDT	GPIO	24 dBm	Multi-purpose, 0.1 - 3 GHz

Packaged Switches in Development

RF Switch Modules, Diversity and Multi-Purpose



ASM

RX- Diversity

Multi-Purpose

Part	Switch Type	Ctrl	Power	Description	@-Sampl	Ramp Up
BGSF110GN26 2.6x3.4 mm ²	SP10T ASM	GPIO	36 dBm	SP10T GPIO ASM with GSM Filter	Available	Jul 13
BGSF17GN26 2.6x3.4 mm ²	SP7T ASM	GPIO	36 dBm	SP7T GPIO ASM with GSM Filter	Sep 13	Jan 14
BGSF1717MN26 2.8x3.2 mm ²	SP7T+ SP7T	MIPI	36 dBm	Carrier Aggregation 2x SP7T ASM	Jun 13*	May 14
BGS16MN14 2.0x2.0 mm ²	SP6T	MIPI	32 dBm	RX-Diversity	Available*	Nov. 13
BGS18MN14 2.0x2.0 mm ²	SP8T	MIPI	32 dBm	RX-Diversity	Available*	Nov. 13
BGS110MN20 2.3x2.3 mm ²	SP10T	MIPI	32 dBm	RX-Diversity	Available*	Nov. 13
BGS15(14)BN14 1.6x1.6 mm ²	SP5T (also as SP4T)	GPIO	30 dBm	Rx-Diversity, 5.5V max. Vcc	Available*	Oct. 13
BGSX22GN10 1.1x1.5 mm ²	DPDXT	GPIO	36 dBm	Dual Antenna Routing Switch	Jun 13	May 14
BGS1316ML16 1.8x2.4 mm ²	SP3T+ SP6T	MIPI	30 dBm	High Band MIPI SP3T+SP6T	Available*	Mar 14
BGS12SN6 0.7x1.1 mm ²	SPDT	GPIO	30 dBm	Broadband 0.1 - 6G (0.7dB IL @ 6G)	Available	Aug 13
BGS13SL9 1.15x1.15 mm ²	SP3T	GPIO	32 dBm	Multi purpose fast switching, 0.1 - 3G	Available	Aug 13

Infineon Packaged CMOS RF Switch

Portfolio in 2014



	Main Rx Switch	Diversity Rx Switch
SPDT .. SP4T		
SP5T		
SP6T		
SP7T		
SP8T		
SP10T		
SP12T		
SP14T		
SP7T+SP7T		
SP3T+SP6T		
DPDT		
DPDXT		

BGSF110GN26 - ASM

SP10T ASM with GPIO Control



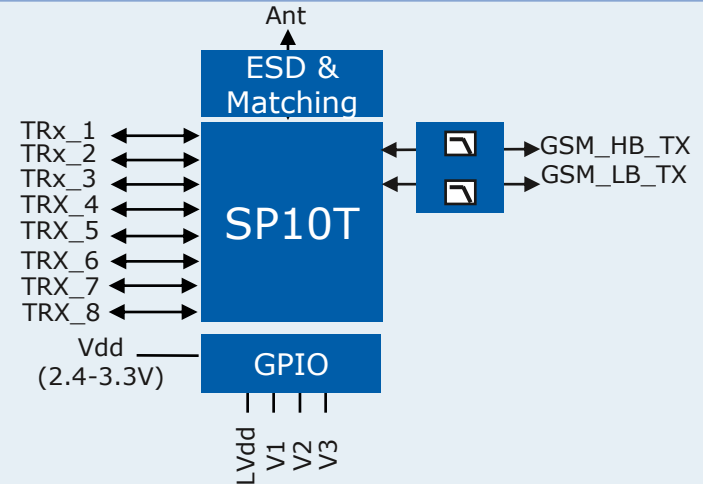
Features

- ❑ Integrated GSM Tx Harmonic Filters
- ❑ 0.1 – 3.8 GHz
- ❑ Up to +36dBm input power
- ❑ Wide supply voltage: 2.4-3.3V
- ❑ Qualcomm spec. compliant

Applications & Availability

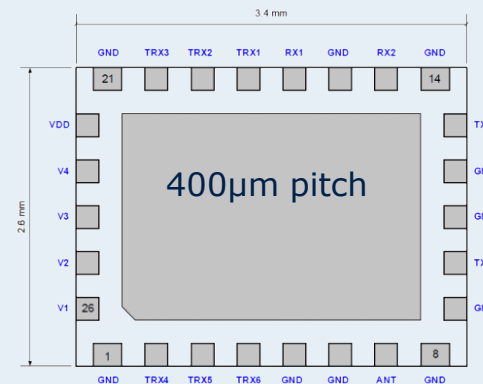
- ❑ Mobile cellular applications & modules
- ❑ Up to 8 Band HSPA+/ LTE
- ❑ Target Schedule:
 - ❑ ES: available
 - ❑ MP: July 2013

Block Diagram



Package

TSNP-26: 3.4x2.6mm



BGSF1717MN26 – ASM

SP7T (HB) + SP7T(LB)

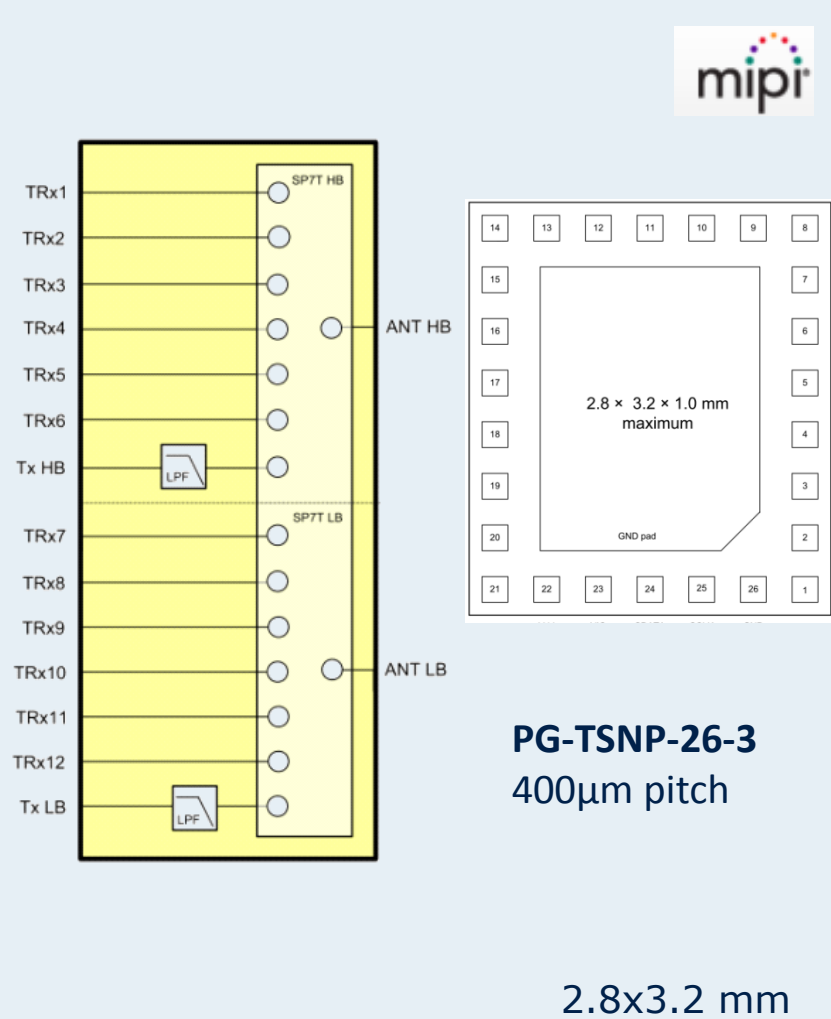
Features

- ❑ Integrated GSM Tx Harmonic Filters
- ❑ 0.1 – 2.7GHz
- ❑ Up to +36dBm input power
- ❑ Wide supply voltage: 2.4-5.5V
- ❑ Qualcomm spec. compliant

Applications & Availability

- ❑ Mobile cellular applications & modules
- ❑ Carrier Aggregation, LTE, HSPA/+, UMTS, EDGE, GSM
- ❑ Target Schedule:
 - ❑ ES: 12 / 2013 (@S 06/13)
 - ❑ MP: 05 / 2014

Block Diagram / Package



BGSF17GN26 – ASM

SP7T ASM

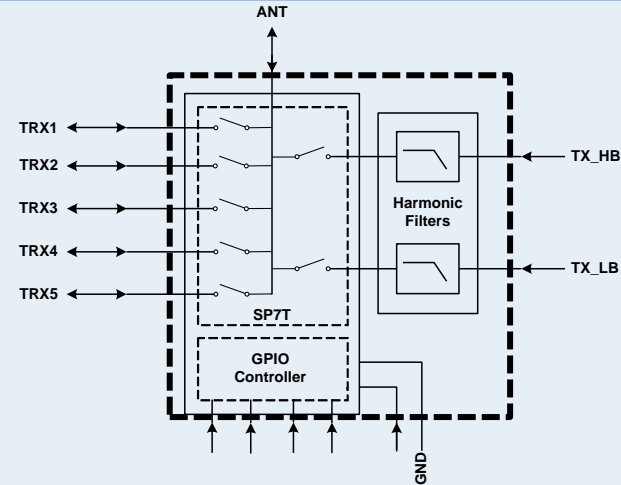
Features

- General purpose SP7T
- GSM Harmonic filter integrated
- 0.1 – 2.7GHz
- Up to 35dBm input power
- Robust GPIO control
- Intel spec. compliant

Applications & Availability

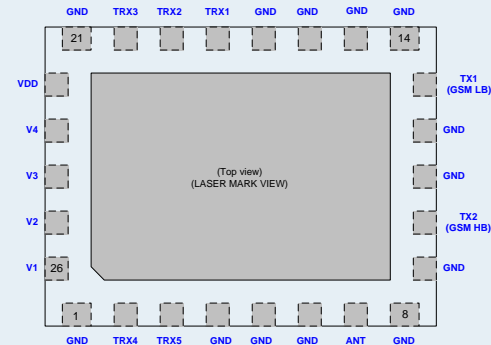
- Main antenna switch module
- HSPA/+, UMTS, EDGE, GSM
- 5 Band application
- Target Schedule:
 - ES 09/2013
 - MP Q2/2014

Block Diagram



Package

PG-TSNP-26-2 Package



3.4x2.6 mm
400µm pitch

BGS110MN20

SP10T Diversity Switch with MIPI RFFE



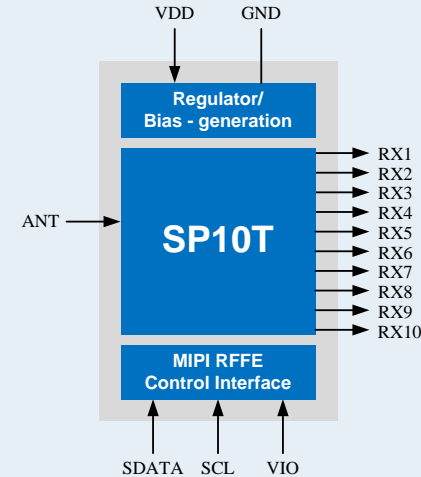
Features

- ❑ Medium Power SP10T
- ❑ 0.1 – 2.7GHz
- ❑ Up to +32dBm input power
- ❑ Robust MIPI RFFE controller
- ❑ Large supply voltage range from 2.5 V to 5.5 V

Applications & Availability

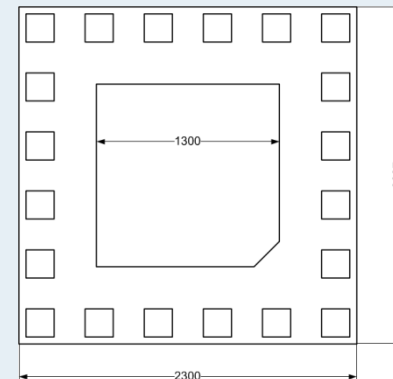
- ❑ Mobile cellular applications
- ❑ Compatible to standard mobile phone platform designs
- ❑ Target Schedule:
 - ❑ ES: available
 - ❑ MP: 10 / 2013

Block Diagram



Package

TSNP-20: 2.3x2.3mm²



BGS16MN14 & BGS18MN14

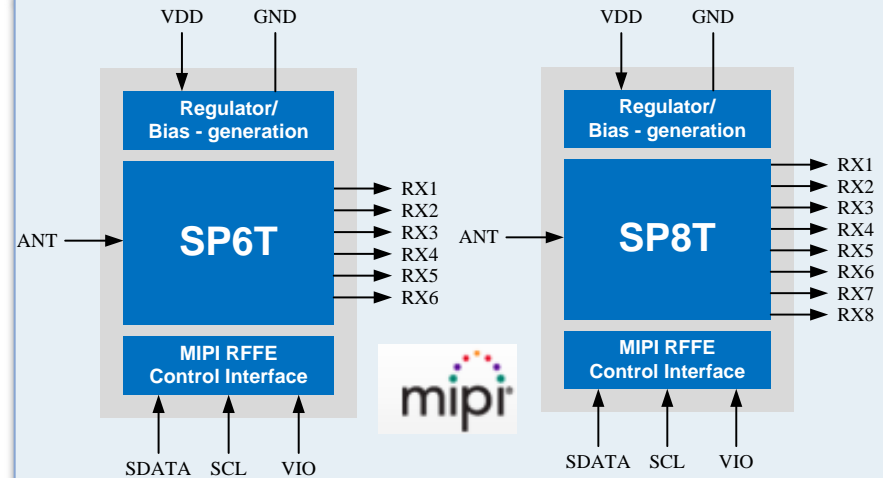
SP6T / SP8T Diversity Switch with MIPI RFFE



Features

- ❑ Same package for all variants
- ❑ Robust MIPI RFFE controller
- ❑ 0.1 – 2.7GHz
- ❑ Up to +32dBm input power
- ❑ Qualcomm spec. compliant

Block Diagram

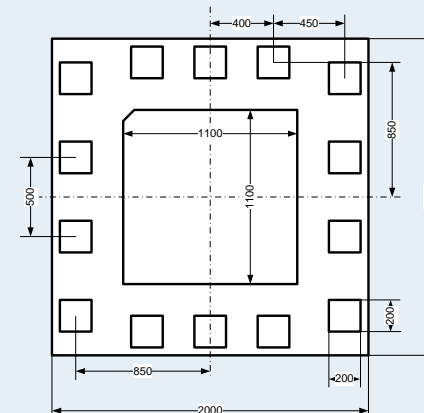


Applications & Availability

- ❑ Mobile cellular applications & modules
- ❑ Up to 6 / 8 Band HSPA+ / LTE
- ❑ Target Schedule:
 - ❑ ES: available
 - ❑ MP: 09 / 2013

Package

TSNP-14: 2.0x2.0mm²



BGSX22GN10 - DPDXT

Dual Antenna Routing Cross Switch

New Technology



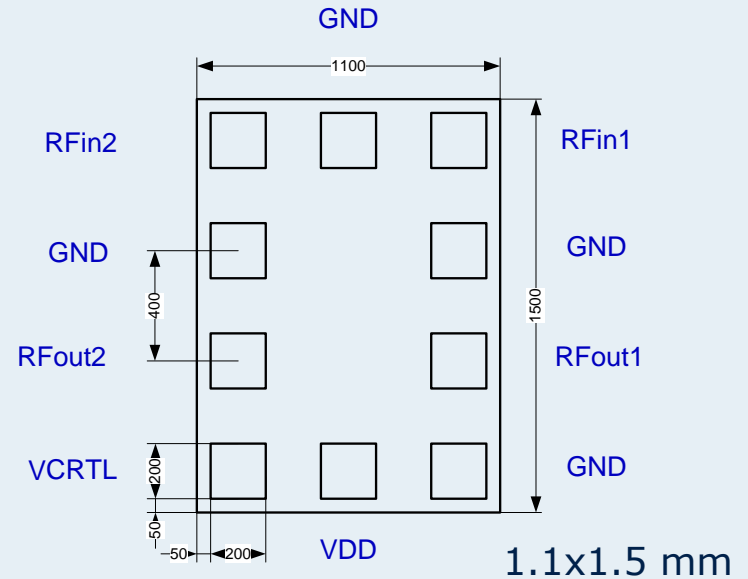
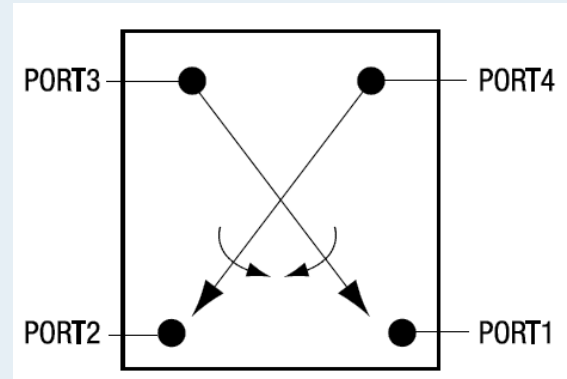
Features

- General purpose DPDXT
- 0.1 – 2.7GHz
- Up to 36 dBm input power
- GPIO control
- 8 kV ESD at antenna port

Applications & Availability

- Mobile cellular applications
- Dual antenna cross switch for main and diversity antenna
- Target Schedule:
 - ES: 12 / 2013
 - MP: 05 / 2014

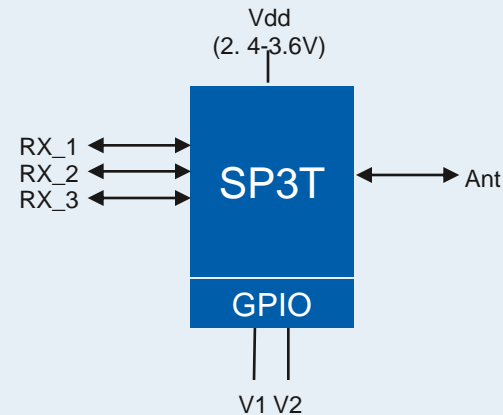
Block Diagram



Features

- ❑ High Speed SP3T
- ❑ 50ns switching time
- ❑ Up to 30dBm input power
- ❑ Robust GPIO control
- ❑ Wide supply voltage: 2.4-3.6V

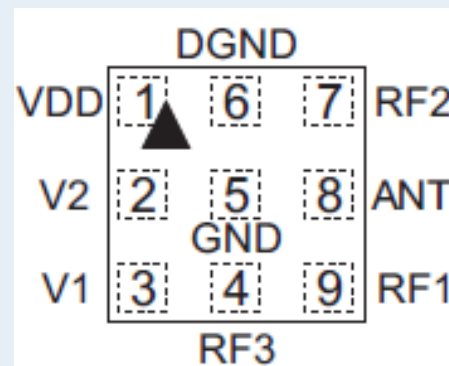
Blockdiagram



Applications & Availability

- ❑ Multi-purpose RF signal switching
- ❑ Rx diversity, Signal-splitting
- ❑ WiFi / Bluetooth Switching
- ❑ Target Schedule:
 - ❑ ES: available
 - ❑ MP: 08 / 2013

Package



1.15x1.15mm
Max Height: 0.39mm

BGS12SL6 - BGS12SN6 - BGS12PL6

SPDT Multi-Purpose RF Switch



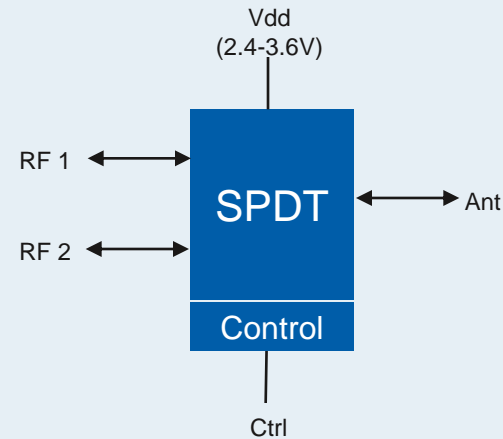
Features

- ❑ **BGS12SL6**: 0.1 – 3 GHz, fast switching time, +27dBm
- ❑ **BGS12PL6**: 35dBm capability
- ❑ **BGS12SN6**: 0.1 – 6 GHz, super Low insertion loss of 0.7dB @ 6 GHz, fast switching time, +30dBm input power

Applications & Availability

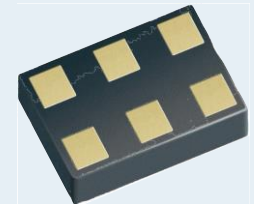
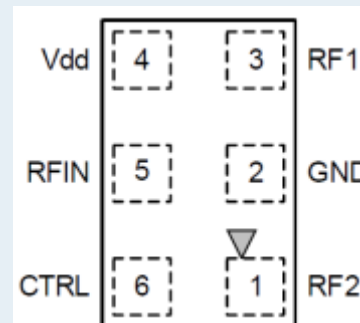
- ❑ Multi-Purpose, distribution switch
- ❑ Band / Mode selection
- ❑ WiFi / WLAN
- ❑ BGS12S(P)L6: In Production
- ❑ BGS12SN6: MP in Aug. 2013

Block Diagram



Package

Tiny TSxP-6 Package



1.1 x 0.7 mm
0.4 mm pitch

Other Switch Datasheet can be downloaded from:
[Http://www.infineon.com](http://www.infineon.com)



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