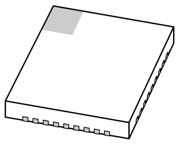


BGX7220

Dual receiver down mixer

Rev. 1 — 8 August 2012 **Product data sheet**

1. General description

The BGX7220 device combines a pair of high performance, high linearity down-mixers for use in receivers having a common local oscillator, for instance having main and diversity paths. The device covers the frequency range from 700 MHz to 950 MHz. Each mixer provides an input 1 dB compression point (ICP_{1dB}) above 13 dBm, with an input third-order intercept point ($IP3_i$) of 26 dBm. The small-signal Noise Figure (NF) is below 10 dB whereas under large signal blocking conditions the Noise Figure is typically 20 dB. Isolation between mixers is typically 55 dB.

2. Features and benefits

- 700 MHz to 950 MHz frequency operating range
- Conversion gain 8 dB in the 900 MHz band
- 13 dBm input power at 1 dB input compression point
- 26 dBm input third-order intercept point
- 10 dB typical small signal noise figure
- Integrated active biasing
- 5 V single supply operation
- Independent power-down hardware control pins per mixer
- Low bias current in Power-down mode
- Matched 50 Ω single-ended RF and LO input impedance
- ESD protection at all pins

3. Applications

- Mobile network infrastructure
- RF and IF applications
- Communication systems and radars
- Microwave and broadband
- Industrial applications

4. Ordering information

Table 1. Ordering information

Type number	Package		
	Name	Description	Version
BGX7220HN	HVQFN36	plastic thermal enhanced very thin quad flat package; no leads; 36 terminals; body 6 × 6 × 0.85 mm	SOT1092-2

5. Functional diagram

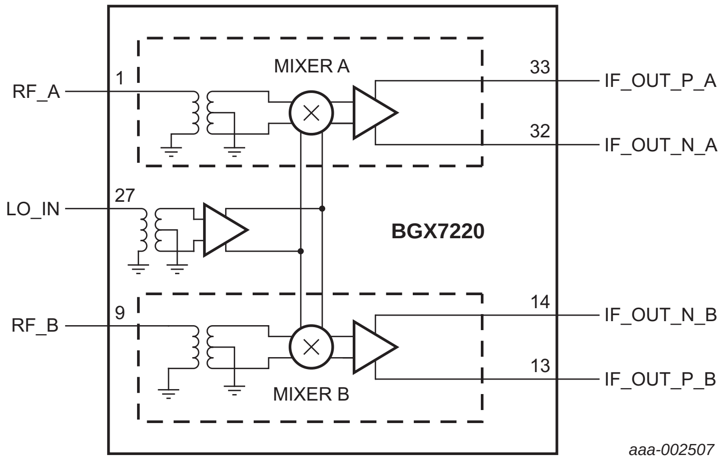


Fig 1. Functional block diagram

Each mixer, A and B employs a transformer to convert the single-ended RF input into a differential signal to drive the passive MOS mixer. The MOS mixer directly drives the IF amplifier. Its open-collector outputs deliver the differential signal into an external transformer load, referenced to the 5 V supply for maximum signal swing. Each mixer can be independently powered-off by a combination of POFF_1 and POFF_2 (see Table 3.) The dual paths allow diversity operation with a common LO path. A transformer at the LO input converts the single-ended RF into a differential signal to drive the LO buffer chain.

The plastic package has an under-side heat-sink paddle which serves as a good RF ground.

6. Pinning information

6.1 Pinning

Viewing the device from the top (see Figure 2), the 2 RF input ports are at the left, the common LO input at the right, with IF outputs at the top and bottom. Multiple power and ground pins allow for independent supply domains to improve isolation between blocks.

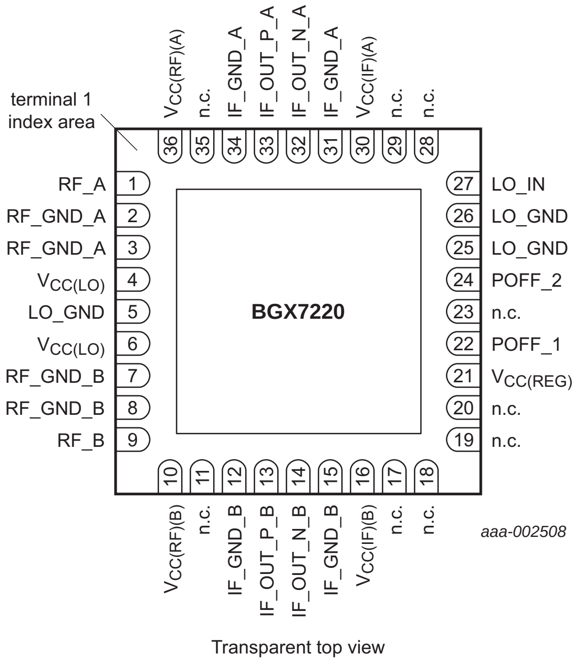


Fig 2. Pinning diagram

6.2 Pin description

Table 2. Pin description

Symbol	Pin	Type[1]	Description
RF_A	1	I	receiver mixer single-ended RF input; mixer A
RF_GND_A	2	G	RF ground; mixer A
RF_GND_A	3	G	RF ground; mixer A
$V_{CC(LO)}$	4	P	LO power supply
LO_GND	5	G	LO ground
$V_{CC(LO)}$	6	P	LO power supply
RF_GND_B	7	G	RF ground; mixer B
RF_GND_B	8	G	RF ground; mixer B
RF_B	9	I	receiver mixer single-ended RF input; mixer B
$V_{CC(RF)(B)}$	10	P	RF mixer power supply; mixer B
n.c.	11	-	not connected; to be tied to ground
IF_GND_B	12	G	IF ground; mixer B
IF_OUT_P_B	13	O	symmetrical IF output signal; mixer B
IF_OUT_N_B	14	O	symmetrical IF output signal; mixer B
IF_GND_B	15	G	IF amplifier ground; mixer B
$V_{CC(IF)(B)}$	16	P	IF amplifier power supply; mixer B
n.c.	17	-	not connected; to be tied to ground
n.c.	18	-	not connected; to be tied to ground
n.c.	19	-	not connected; to be tied to ground
n.c.	20	-	not connected; to be tied to ground
$V_{CC(REG)}$	21	P	internal regulator power supply

Table 2. Pin description *...continued*

Symbol	Pin	Type[1]	Description
POFF_1	22	I	logic input to power-off mixer
n.c.	23	-	not connected; to be tied to ground
POFF_2	24	I	logic input to power-off mixer
LO_GND	25	G	LO ground
LO_GND	26	G	LO ground
LO_IN	27	I	single-ended local oscillator positive input
n.c	28	-	not connected; to be tied to ground
n.c	29	-	not connected; to be tied to ground
$V_{CC(IF)(A)}$	30	P	IF amplifier power supply; mixer A
IF_GND_A	31	G	IF amplifier mixer; mixer A
IF_OUT_N_A	32	O	symmetrical IF negative output; mixer A
IF_OUT_P_A	33	O	symmetrical IF positive output; mixer A
IF_GND_A	34	G	IF ground; mixer A
n.c.	35	-	not connected; to be tied to ground
$V_{CC(RF)(A)}$	36	P	RF power supply; mixer A
Exposed paddle	-	G	exposed paddle; must be connected to RF and DC ground

[1] G: ground; I: input; O: output; P: power.

7. Functional description

7.1 Power-up control

Table 3. Shutdown control

Mode	Description	Function	POFF_1	POFF_2
Active	mixers A and B fully active	shutdown disabled	0	0
Idle	mixers A and B fully off; current supplied to LO buffer	shutdown enabled	1	0
Main	mixer A active; mixer B off	partial shutdown	0	1
Diversity	mixer B active; mixer A off	partial shutdown	1	1

Power-up enable pins to allow each mixer to be placed in Power-down mode. These pins also enable the dedicated LO buffers for individual signal paths. A common LO input stage remains active whatever the state of the power off control inputs, in order to maintain good LO port matching. The time required to pass between active and inactive states is less than 10 μs. If the pins are left open or tied to ground, both mixers will be in active state.

8. Limiting values

Table 4. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions	Min	Max	Unit
V_{CC}	supply voltage		–0.3	5.5	V
$P_{i(RF)}$	RF input power	continuous	-	20	dBm
P_{tot}	total power dissipation		-	1.96	W
T_{mb}	mounting base temperature		–40	+85	°C
T_j	junction temperature		-	150	°C
T_{stg}	storage temperature		–65	+150	°C
V_{ESD}	electrostatic discharge voltage	EIA/JESD22-A114 (HBM)	-2500	+2500	V
		EIA/JESD22-C101 (FCDM)	-650	+650	V

9. Thermal characteristics

Table 5. Thermal characteristics

Symbol	Parameter	Conditions	Typ	Unit
$R_{th(j-mb)}$	thermal resistance from junction to mounting base	[1]	8	°C/W

[1] Defined according to the conditions described in the Application Note *AN11132*.

10. Static characteristics

Table 6. Static characteristics

$Z_s = Z_L = 50\ \Omega$; POFF _1 = V_{IL} and POFF _2 = V_{IL} (shutdown disabled). Typical values at $V_{CC} = 5$ V. $T_{mb} = 25$ °C, unless otherwise specified.

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_{CC}	supply voltage			4.75	5.0	5.25	V
I_{Cq}	quiescent collector current	IF output; per package pin	[1]	-	60	-	mA
Shutdown digital input voltage							
V_{IL}	LOW-level input voltage		[1]	0	-	0.5	V
V_{IH}	HIGH-level input voltage		[1]	2	-	5	V
All digital inputs current							
I_{IL}	LOW-level input current		[1]	-	1	-	µA
I_{IH}	HIGH-level input current		[1]	-	50	-	µA

[1] V_{CC} = 4.75 V to 5.25 V, T_{mb} = –40 °C to +85 °C.

11. Dynamic characteristics

Table 7. Dynamic characteristics

Typical application values: POFF_1 = V_{IL} and POFF_2 = V_{IL} (shutdown disabled); RF and LO ports driven by 50 Ω sources; $P_{i(RF)}$ = –5 dBm; $f_{i(RF)}$ = 850 MHz; T_{mb} = –40 °C to +85 °C; V_{CC} = 4.75 V to 5.25 V. Typical values at V_{CC} = 5 V; T_{mb} = 25 °C; $P_{i(RF)}$ = –5 dBm; $P_{i(lo)}$ = 0 dBm; $f_{i(RF)}$ = 850 MHz; f_{IF} = 150 MHz. All parameters are guaranteed by design and characterization, unless otherwise specified.

Symbol	Parameter	Conditions		Min[1]	Typ[2]	Max[1]	Unit
I_{CC}	supply current	both mixers in active mode					
		f_{lo} = 500 MHz		-	285	330	mA
		f_{lo} = 850 MHz		-	300	345	mA
		f_{lo} = 1150 MHz		-	310	355	mA
$f_{i(RF)}$	RF input frequency		[3]	700	-	950	MHz
f_{lo}	local oscillator frequency	signal from frequency generator; f_{IF} = 50 MHz to 200 MHz	[3]	500	-	1150	MHz
$P_{i(lo)}$	local oscillator input power	signal from frequency generator	[3]	–3	-	+3	dBm
G_{conv}	conversion gain	at T_{mb} = 25 °C; $f_{i(RF)}$ = 700 MHz to 950 MHz	[4]	7.5	8.2	9	dB
ΔG/ΔT	gain variation with temperature	T_{mb} = –40 °C to +85 °C		-	0.007	-	dB/°C
ΔG	gain deviation	$f_{i(RF)}$ = 700 MHz to 715 MHz; f_{lo} = 560 MHz or f_{lo} = 855 MHz	[4][7]	-	0.15	-	dB
		$f_{i(RF)}$ = 750 MHz to 760 MHz; f_{lo} = 605 MHz or f_{lo} = 905 MHz	[4][7]	-	0.4	-	dB
		$f_{i(RF)}$ = 780 MHz to 795 MHz; f_{lo} = 640 MHz or f_{lo} = 940 MHz	[4][7]	-	0.15	-	dB
		$f_{i(RF)}$ = 815 MHz to 860 MHz; f_{lo} = 690 MHz or f_{lo} = 985 MHz	[4][7]	-	0.3	-	dB
		$f_{i(RF)}$ = 880 MHz to 915 MHz; f_{lo} = 750 MHz or f_{lo} = 1045 MHz	[4][7]	-	0.15	-	dB
ICP_{1dB}	1 dB input compression point		[6]	10.5	13	-	dBm
$IP3_i$	input third-order intercept point	$f_{i(RF)1}$ to $f_{i(RF)2}$ = 1 MHz; $P_{i(RF)}$ = –5 dBm per tone	[4]	24.5	26	-	dBm
2RF-2LO	second-order spurious rejection	2 tone inputs at $P_{i(RF)}$ = –10 dBm; $f_{i(RF)}$ = 850 MHz; $f_{i(LO)}$ = 950 MHz; $f_{i(SPUR)}$ = 900 MHz		–57	–63	-	dBc
NF_{SSB}	single sideband noise figure			-	9.5	12	dB
NF_B	noise figure under blocking conditions	input in-band blocker +8 dBm; Δf_o = 100 MHz	[7]	-	20	-	dB
$\alpha_{L(RF)lo}$	local oscillator RF leakage	at RF input port; LO input power = 0 dBm		-	-	–35	dBm
$\alpha_{L(IF)lo}$	local oscillator IF leakage	at IF output port; LO input power = 0 dBm		-	-	–35	dBm
α_{isol}	isolation	between mixer A and B; $P_{i(RF)}$ = –10 dBm; measured at unwanted IF port		45	55	-	dB

Table 7. Dynamic characteristics *…continued*

Typical application values: POFF _1 = V_{IL} and POFF _2 = V_{IL} (shutdown disabled); RF and LO ports driven by 50 Ω sources; $P_{i(RF)}$ = –5 dBm; $f_{i(RF)}$ = 850 MHz; T_{mb} = –40 °C to +85 °C; V_{CC} = 4.75 V to 5.25 V. Typical values at V_{CC} = 5 V; T_{mb} = 25 °C; $P_{i(RF)}$ = –5 dBm; $P_{i(lo)}$ = 0 dBm; $f_{i(RF)}$ = 850 MHz; f_{IF} = 150 MHz. All parameters are guaranteed by design and characterization, unless otherwise specified.

Symbol	Parameter	Conditions	Min[1]	Typ[2]	Max[1]	Unit
S11_RF	RF input return loss	fi(RF) = 700 MHz to 950 MHz	-	12	-	dB
S11_LO	LO input return loss	f_{lo} = 500 MHz to 1150 MHz	-	12	-	dB
S22_IF	IF output return loss	fIF = 50 MHz to 200 MHz	-	14	-	dB

[1] For all minimum and maximum values the conditions are: $P_{i(RF)}$ = –5 dBm; $P_{i(lo)}$ = 0 dBm; $f_{i(RF)}$ = 850 MHz; f_{IF} = 150 MHz; T_{mb} = –40 °C to +85 °C; V_{CC} = 4.75 V to 5.25 V. Unless otherwise specified in the conditions.

[2] For all typical values, the conditions are: $P_{i(RF)}$ = –5 dBm; P_{lo} = 0 dBm; $f_{i(RF)}$ = 850 MHz; f_{IF} = 150 MHz; T_{mb} = 25 °C; V_{CC} = 5 V. Unless otherwise specified in the conditions.

[3] Operation outside this range is possible but parameters are not guaranteed.

[4] Class A operation.

[5] f_{IF} is variable.

[6] Maximum reliable continuous input power applied to the RF or IF port of this device is 12 dBm from a 50 Ω source.

[7] NF_B can be improved by 1 dB per dB as a function of the $P_{i(lo)}$.

12. Application information

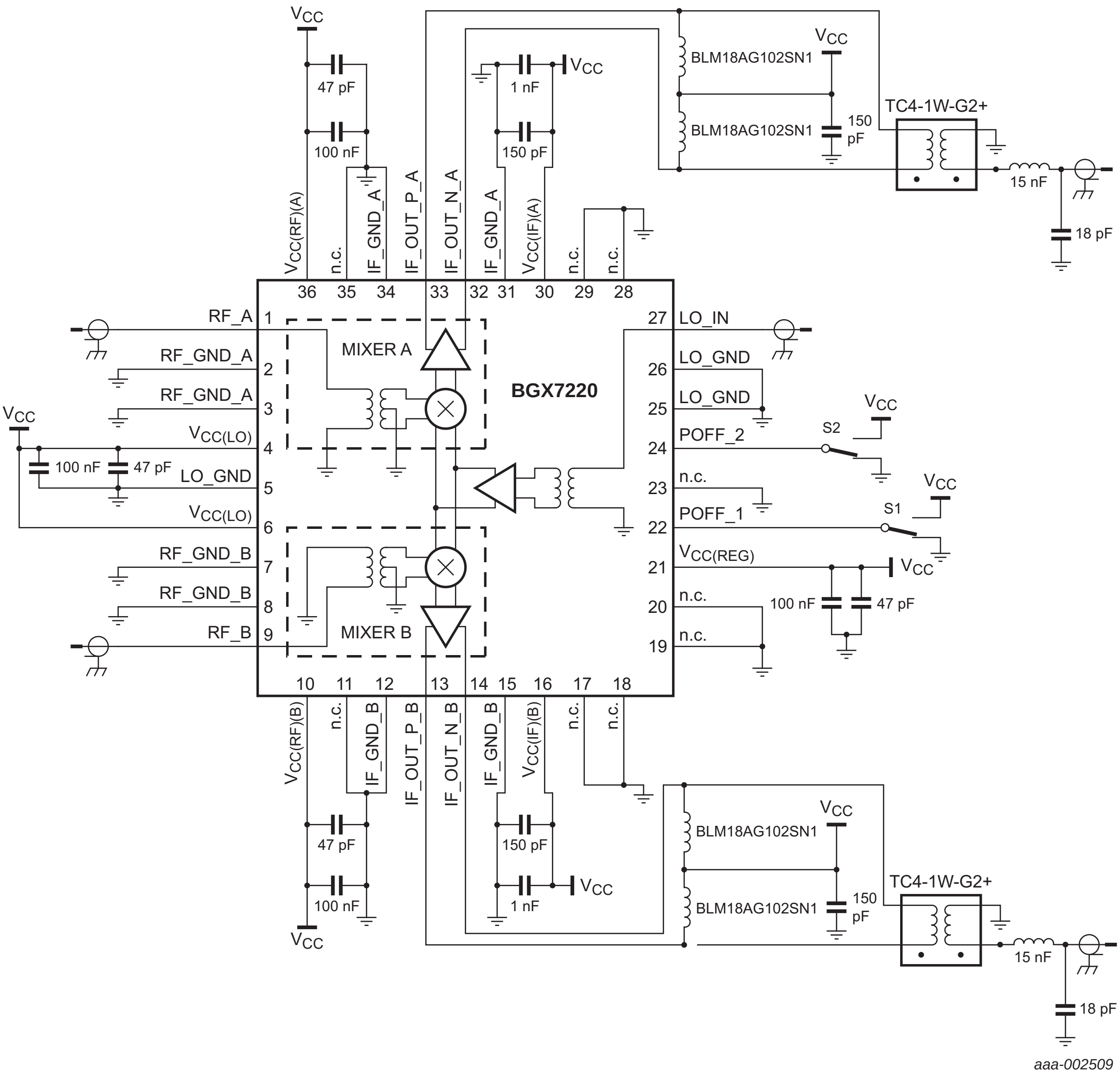
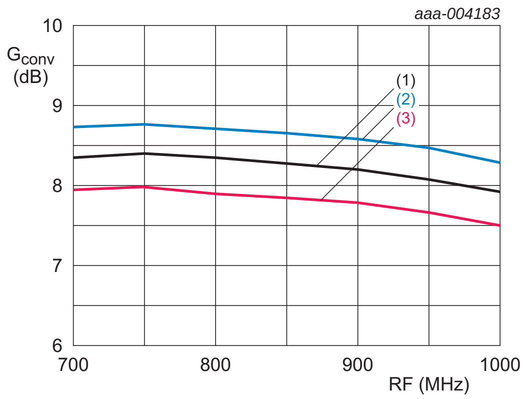


Fig 3. Application diagram

Figure 3 shows a typical wideband application circuit. Both RF and RF reference pins need to be AC coupled. The inputs are internally DC biased in order to provide good ESD protection, and to support large input signals without clamping. The output matching requires a transformer to cope with the DC at the output.

13. Test information

Parameters for the following drawings: V_{CC} = 5 V; T_{mb} = 25 °C; $P_{i(RF)}$ = –5 dBm; $P_{i(lo)}$ = 0 dBm; f_{IF} = 150 MHz; unless otherwise specified.

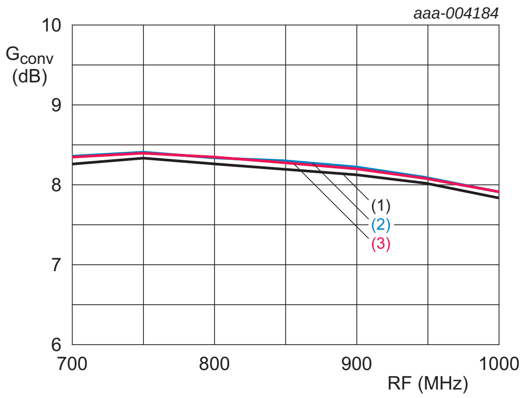


(1) T_{mb} = +25 °C.

(2) T_{mb} = –40 °C.

(3) T_{mb} = +85 °C.

Fig 4. G_{conv} versus f_{RF} (high side LO) and T_{mb}

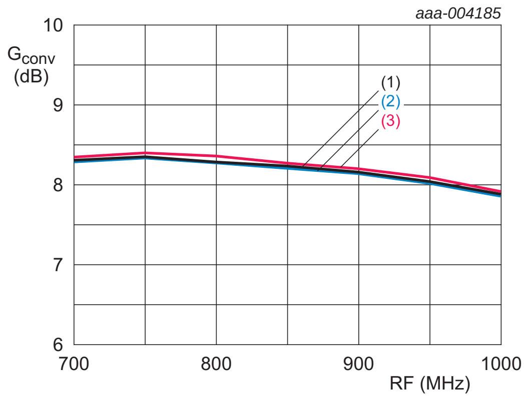


(1) $P_{i(lo)}$ = 0 dBm.

(2) $P_{i(lo)}$ = –3 dBm.

(3) $P_{i(lo)}$ = +3 dBm.

Fig 5. G_{conv} versus f_{RF} (high side LO) and $P_{i(lo)}$

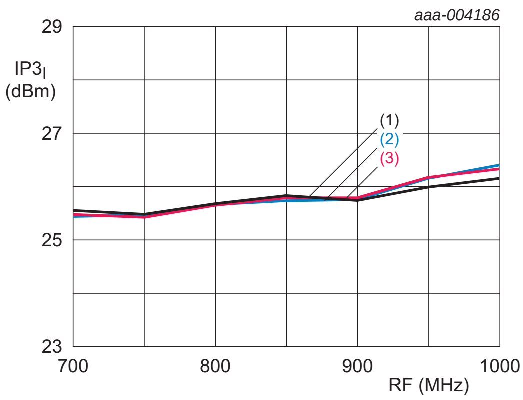


(1) V_{CC} = 5 V.

(2) V_{CC} = 4.75 V.

(3) V_{CC} = 5.25 V.

Fig 6. G_{conv} versus f_{RF} (high side LO) and V_{CC}

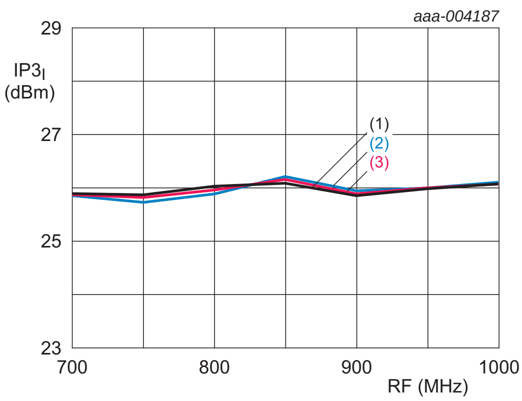


(1) T_{mb} = +25 °C.

(2) T_{mb} = −40 °C.

(3) T_{mb} = +85 °C.

Fig 7. IP3$_i$ versus f_{RF} (high side LO) and T_{mb}

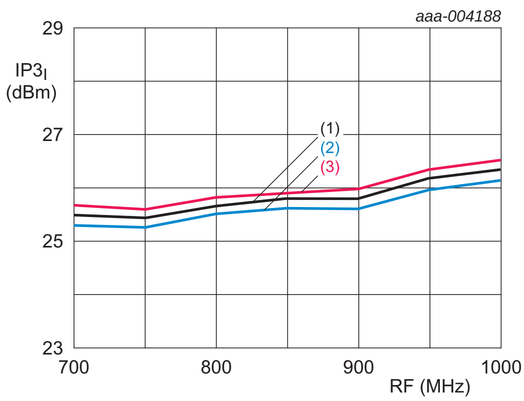


(1) $P_{i(lo)}$ = 0 dBm.

(2) $P_{i(lo)}$ = −3 dBm.

(3) $P_{i(lo)}$ = +3 dBm.

Fig 8. IP3$_i$ versus f_{RF} (high side LO) and $P_{i(lo)}$

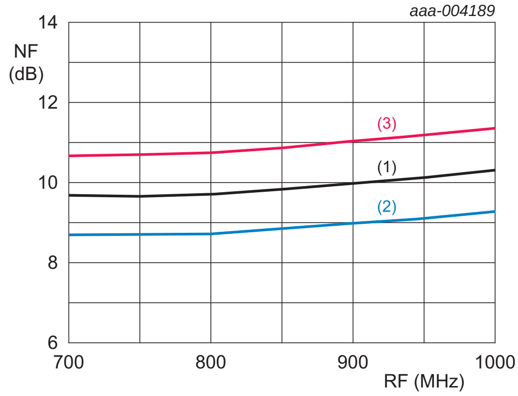


(1) V_{CC} = 5 V.

(2) V_{CC} = 4.75 V.

(3) V_{CC} = 5.25 V.

Fig 9. IP3$_i$ versus f_{RF} (high side LO) and V_{CC}

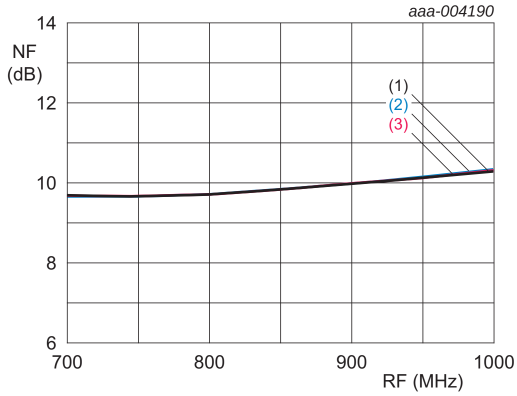


(1) T_{mb}= +25 °C.

(2) T_{mb} = –40 °C.

(3) T_{mb} = +85 °C.

Fig 10. NF versus f_{RF} (high side LO) and T_{mb}

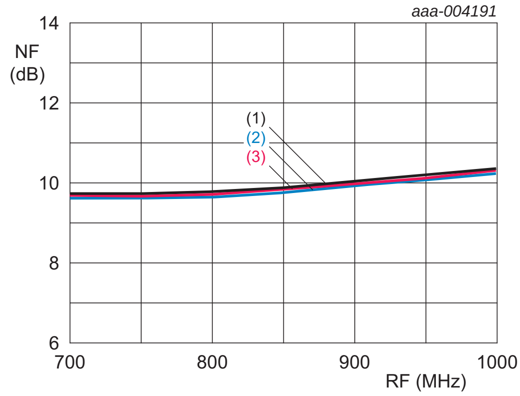


(1) $P_{i(lo)}$ = 0 dBm.

(2) $P_{i(lo)}$ = –3 dBm.

(3) $P_{i(lo)}$ = +3 dBm.

Fig 11. NF versus f_{RF} (high side LO) and $P_{i(lo)}$

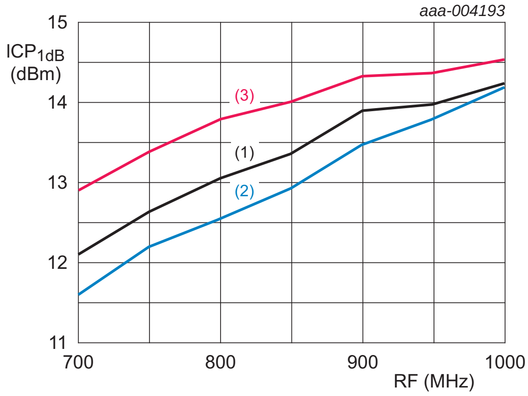


(1) V_{CC} = 5 V.

(2) V_{CC} = 4.75 V.

(3) V_{CC} = 5.25 V.

Fig 12. NF versus f_{RF} (high side LO) and V_{CC}

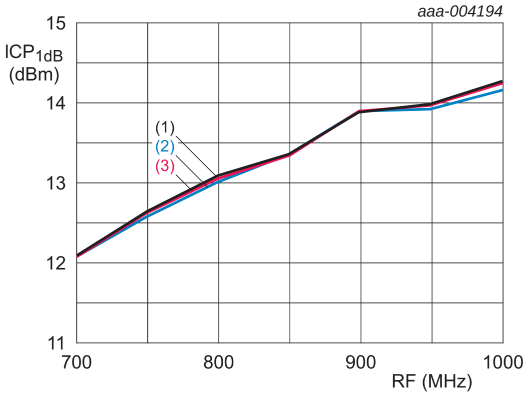


(1) T_{mb} = +25 °C.

(2) T_{mb} = −40 °C.

(3) T_{mb} = +85 °C.

Fig 13. ICP_{1dB} versus f_{RF} (high side LO) and T_{mb}

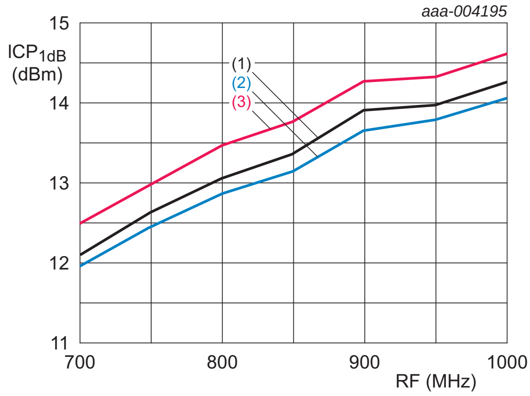


(1) $P_{i(lo)}$ = 0 dBm.

(2) $P_{i(lo)}$ = −3 dBm.

(3) $P_{i(lo)}$ = +3 dBm.

Fig 14. ICP_{1dB} versus f_{RF} (high side LO) and $P_{i(lo)}$

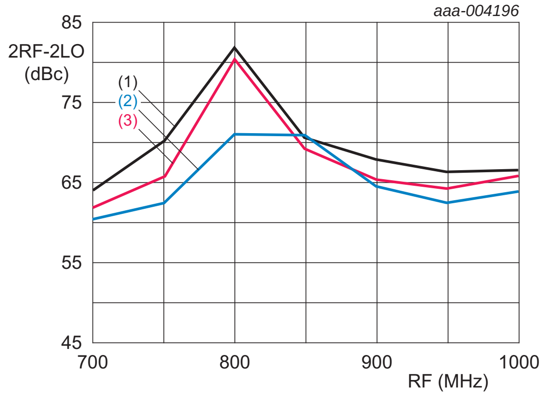


(1) V_{CC} = 5 V.

(2) V_{CC} = 4.75 V.

(3) V_{CC} = 5.25 V.

Fig 15. ICP_{1dB} versus f_{RF} (high side LO) and V_{CC}

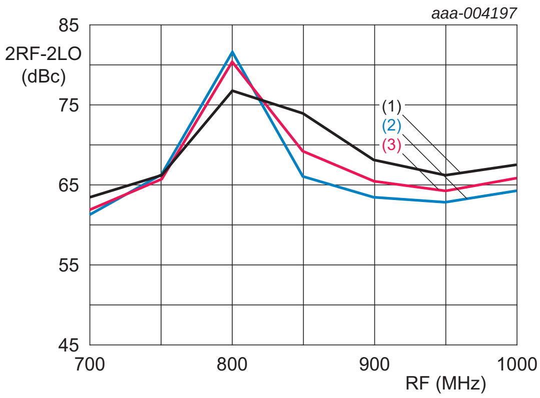


(1) T_{mb} = +25 °C.

(2) T_{mb} = −40 °C.

(3) T_{mb} = +85 °C.

Fig 16. 2RF-2LO response versus f_{RF} (high side LO) and T_{mb}

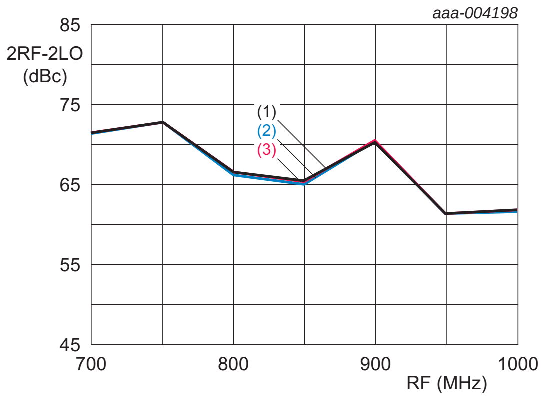


(1) $P_{i(lo)}$ = 0 dBm.

(2) $P_{i(lo)}$ = −3 dBm.

(3) $P_{i(lo)}$ = +3 dBm.

Fig 17. 2RF-2LO response versus f_{RF} (high side LO) and $P_{i(lo)}$

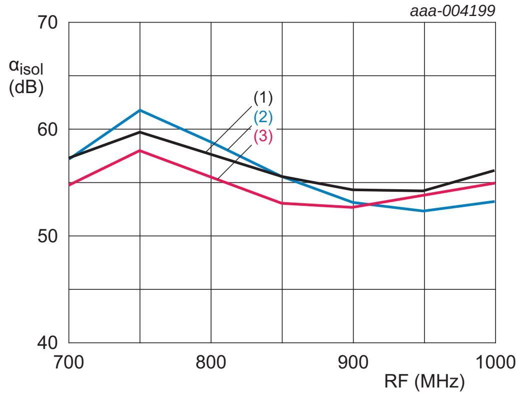


(1) V_{CC} = 5 V.

(2) V_{CC} = 4.75 V.

(3) V_{CC} = 5.25 V.

Fig 18. 2RF-2LO response versus f_{RF} (high side LO) and V_{CC}

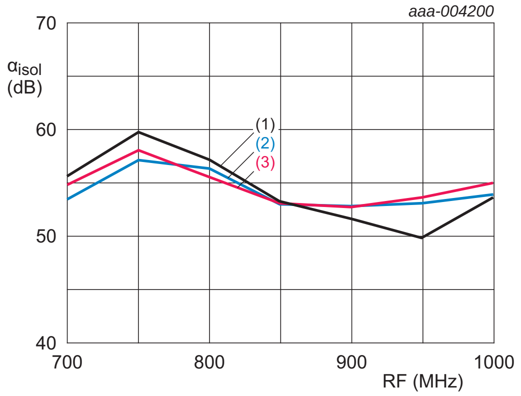


(1) T_{mb} = +25 °C.

(2) T_{mb} = −40 °C.

(3) T_{mb} = +85 °C.

Fig 19. α_{isol} versus f_{RF} (high side LO) and T_{mb}

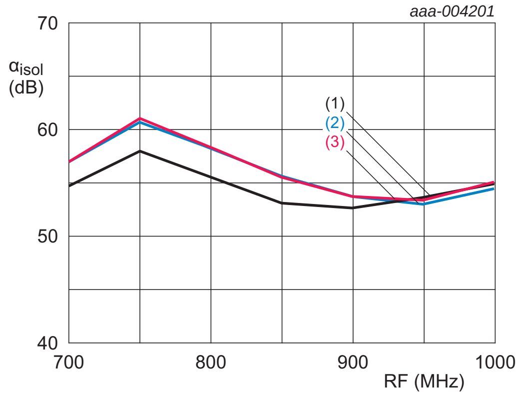


(1) $P_{i(lo)}$ = 0 dBm.

(2) $P_{i(lo)}$ = −3 dBm.

(3) $P_{i(lo)}$ = +3 dBm.

Fig 20. α_{isol} versus f_{RF} (high side LO) and $P_{i(lo)}$

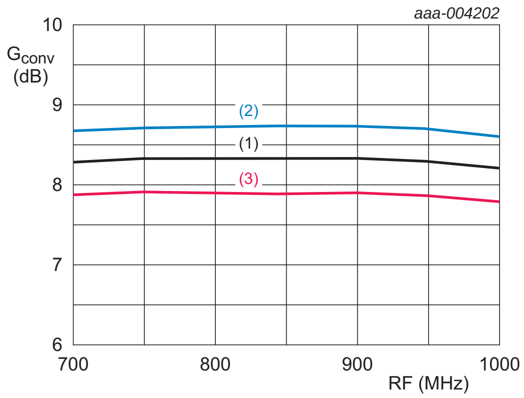


(1) V_{CC} = 5 V.

(2) V_{CC} = 4.75 V.

(3) V_{CC} = 5.25 V.

Fig 21. α_{isol} versus f_{RF} (high side LO) and V_{CC}

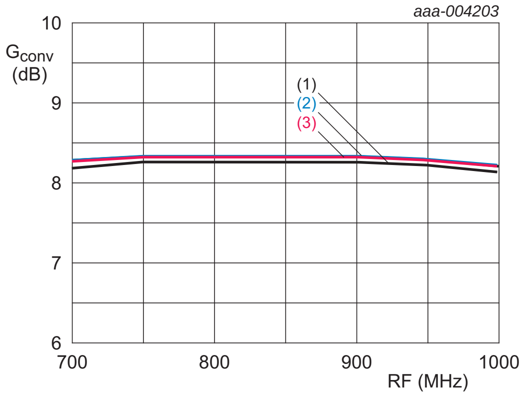


(1) T_{mb} = +25 °C.

(2) T_{mb} = −40 °C.

(3) T_{mb} = +85 °C.

Fig 22. G_{conv} versus f_{RF} (low side LO) and T_{mb}

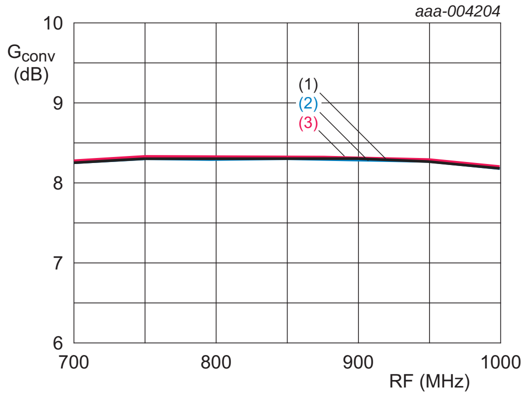


(1) $P_{i(lo)}$ = 0 dBm.

(2) $P_{i(lo)}$ = −3 dBm.

(3) $P_{i(lo)}$ = +3 dBm.

Fig 23. G_{conv} versus f_{RF} (low side LO) and $P_{i(lo)}$

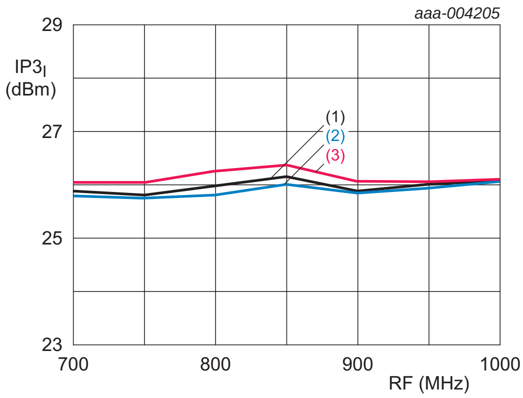


(1) V_{CC} = 5 V.

(2) V_{CC} = 4.75 V.

(3) V_{CC} = 5.25 V.

Fig 24. G_{conv} versus f_{RF} (low side LO) and V_{CC}

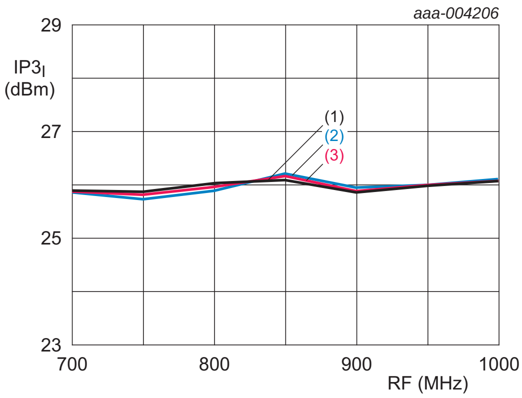


(1) T_{mb} = +25 °C.

(2) T_{mb} = −40 °C.

(3) T_{mb} = +85 °C.

Fig 25. $IP3_i$ versus f_{RF} (low side LO) and T_{mb}

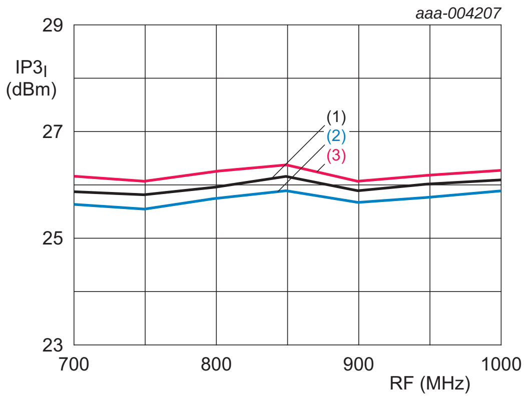


(1) $P_{i(lo)}$ = 0 dBm.

(2) $P_{i(lo)}$ = −3 dBm.

(3) $P_{i(lo)}$ = +3 dBm.

Fig 26. $IP3_i$ versus f_{RF} (low side LO) and $P_{i(lo)}$

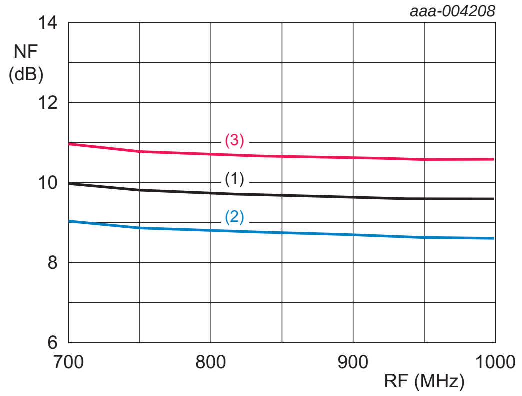


(1) V_{CC} = 5 V.

(2) V_{CC} = 4.75 V.

(3) V_{CC} = 5.25 V.

Fig 27. $IP3_i$ versus f_{RF} (low side LO) and V_{CC}

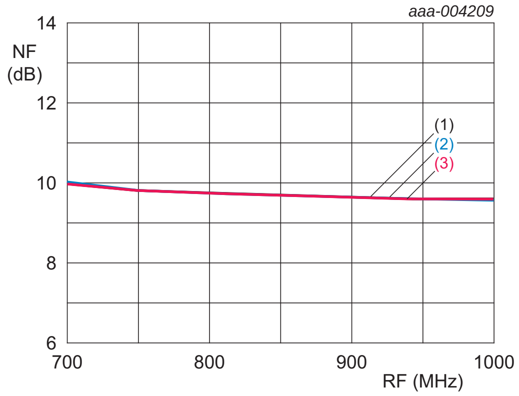


(1) T_{mb} = +25 °C.

(2) T_{mb} = –40 °C.

(3) T_{mb} = +85 °C.

Fig 28. NF versus f_{RF} (low side LO) and T_{mb}

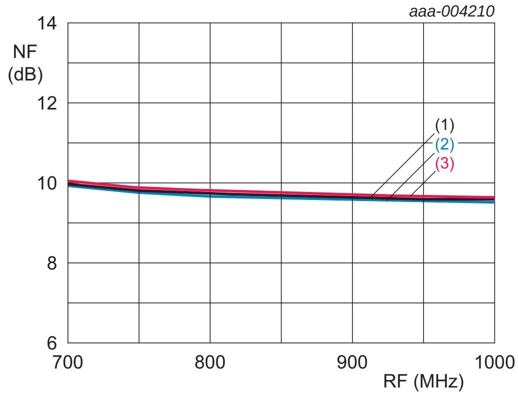


(1) $P_{i(lo)}$ = 0 dBm.

(2) $P_{i(lo)}$ = –3 dBm.

(3) $P_{i(lo)}$ = +3 dBm.

Fig 29. NF versus f_{RF} (low side LO) and $P_{i(lo)}$

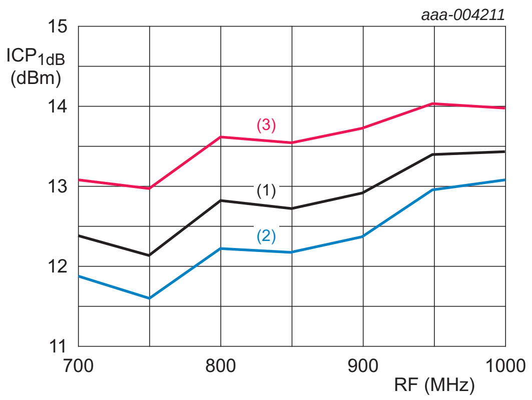


(1) V_{CC} = 5 V.

(2) V_{CC} = 4.75 V.

(3) V_{CC} = 5.25 V.

Fig 30. NF versus f_{RF} (low side LO) and V_{CC}

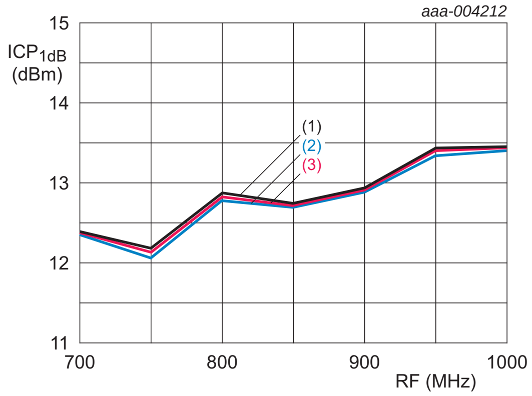


(1) T_{mb} = +25 °C.

(2) T_{mb} = −40 °C.

(3) T_{mb} = +85 °C.

Fig 31. ICP_{1dB} versus f_{RF} (low side LO) and T_{mb}

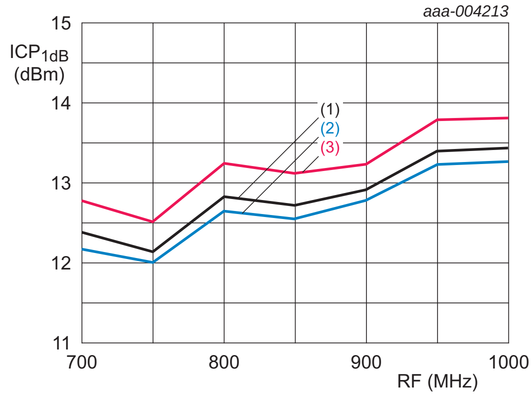


(1) $P_{i(lo)}$ = 0 dBm.

(2) $P_{i(lo)}$ = −3 dBm.

(3) $P_{i(lo)}$ = +3 dBm.

Fig 32. ICP_{1dB} versus f_{RF} (low side LO) and $P_{i(lo)}$

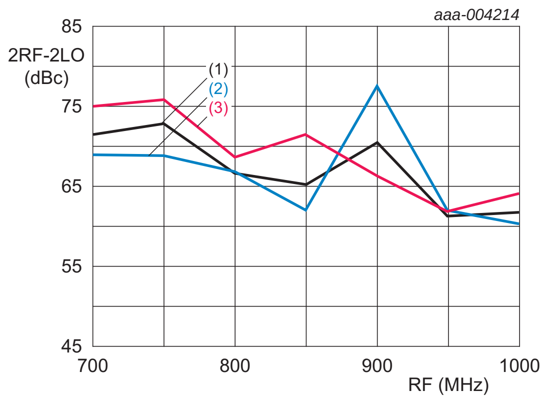


(1) V_{CC} = 5 V.

(2) V_{CC} = 4.75 V.

(3) V_{CC} = 5.25 V.

Fig 33. ICP_{1dB} versus f_{RF} (low side LO) and V_{CC}

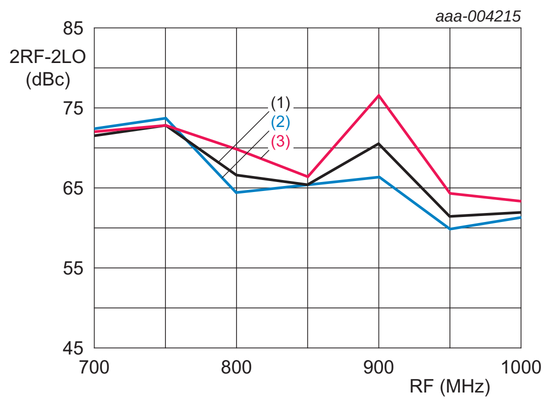


(1) T_{mb} = +25 °C.

(2) T_{mb} = −40 °C.

(3) T_{mb} = +85 °C.

Fig 34. 2RF-2LO response versus f_{RF} (low side LO) and T_{mb}

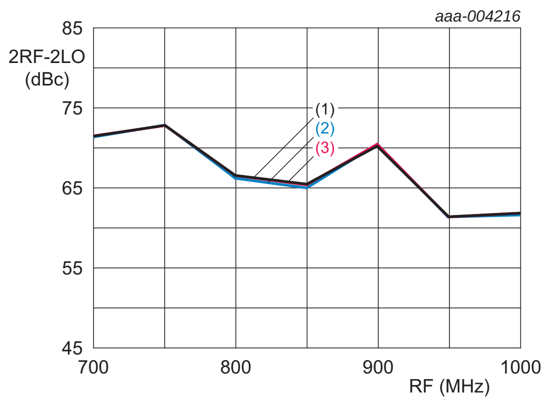


(1) $P_{i(lo)}$ = 0 dBm.

(2) $P_{i(lo)}$ = −3 dBm.

(3) $P_{i(lo)}$ = +3 dBm.

Fig 35. 2RF-2LO response versus f_{RF} (low side LO) and $P_{i(lo)}$

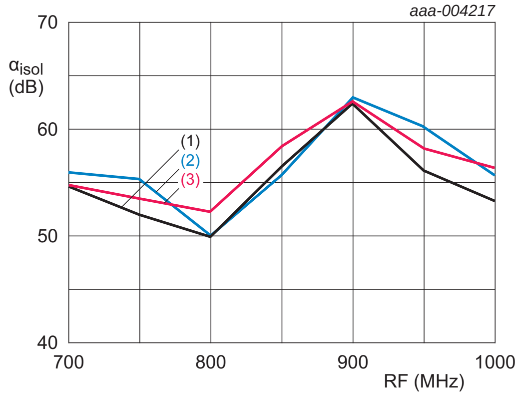


(1) V_{CC} = 5 V.

(2) V_{CC} = 4.75 V.

(3) V_{CC} = 5.25 V.

Fig 36. 2RF-2LO response versus f_{RF} (low side LO) and V_{CC}

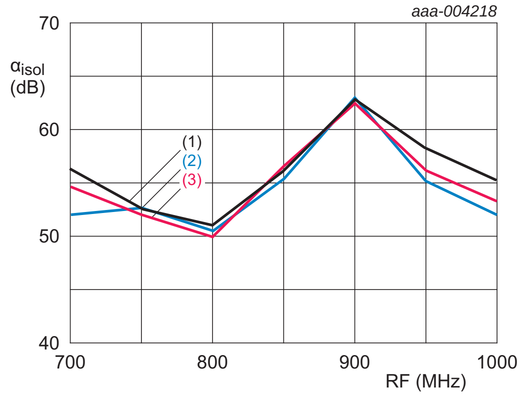


(1) T_{mb} = +25 °C.

(2) T_{mb} = −40 °C.

(3) T_{mb} = +85 °C.

Fig 37. α_{isol} versus f_{RF} (low side LO) and T_{mb}

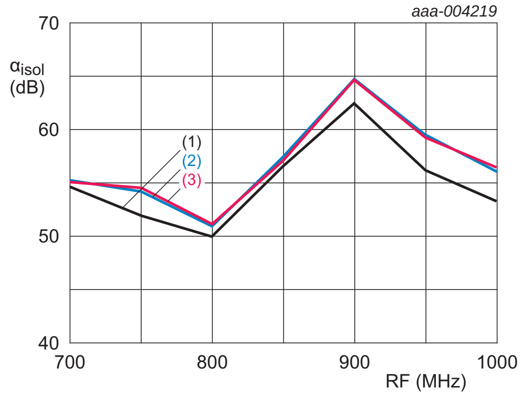


(1) $P_{i(lo)}$ = 0 dBm.

(2) $P_{i(lo)}$ = −3 dBm.

(3) $P_{i(lo)}$ = +3 dBm.

Fig 38. α_{isol} versus f_{RF} (low side LO) and $P_{i(lo)}$



(1) V_{CC} = 5 V.

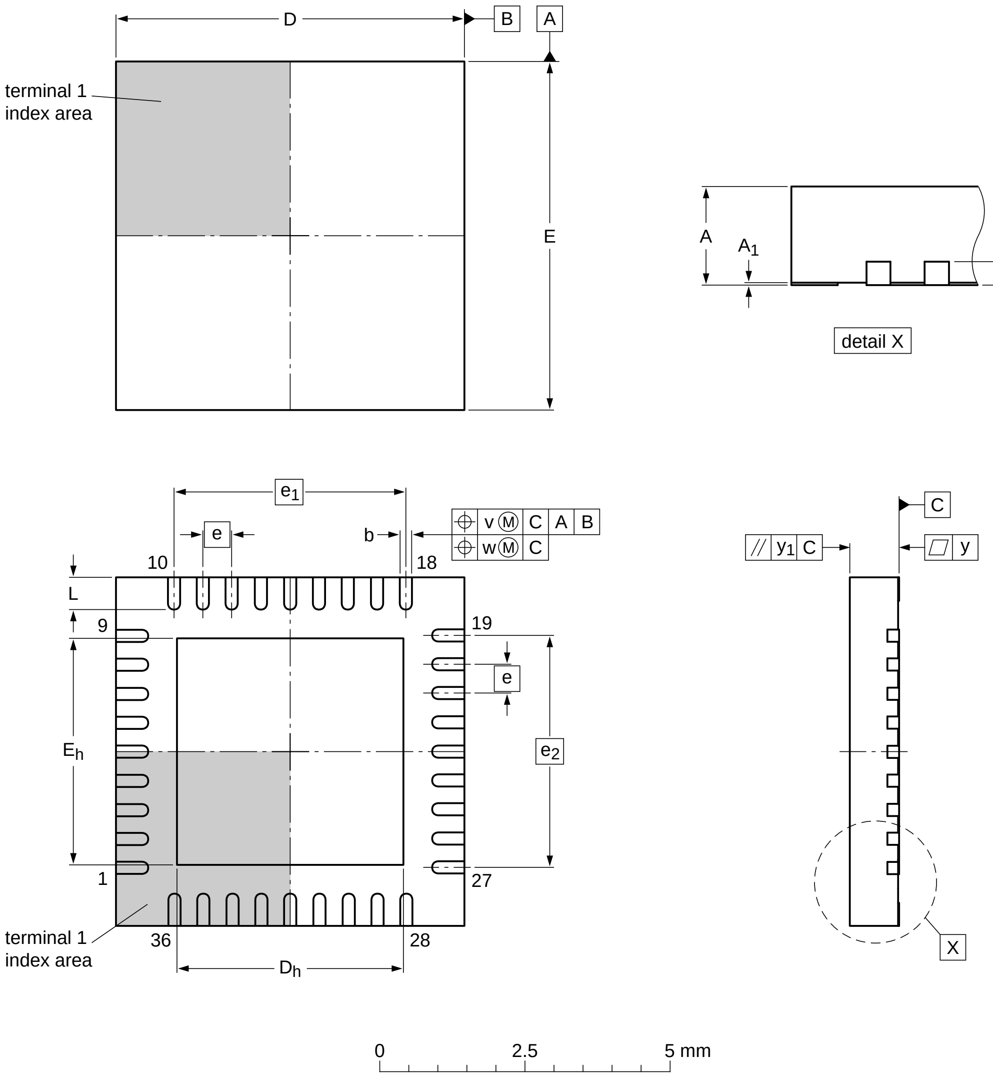
(2) V_{CC} = 4.75 V.

(3) V_{CC} = 5.25 V.

Fig 39. α_{isol} versus f_{RF} (low side LO) and V_{CC}

14. Package outline

HVQFN36: plastic thermal enhanced very thin quad flat package; no leads; 36 terminals; body 6 x 6 x 0.85 mm **SOT1092-2**



Dimensions

Unit		$A^{(1)}$	A_1	b	c	$D^{(1)}$	D_h	$E^{(1)}$	E_h	e	e_1	e_2	L	v	w	y	y_1
	max	1.00	0.05	0.30		6.1	4.05	6.1	4.05				0.65				
mm	nom	0.85	0.02	0.21	0.2	6.0	3.90	6.0	3.90	0.5	4	4	0.55	0.1	0.05	0.05	0.1
	min	0.80	0.00	0.18		5.9	3.75	5.9	3.75				0.45				

Note

1. Plastic or metal protrusions of 0.075 mm maximum per side are not included.

sot1092-2_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOT1092-2		- - -	- - -			~~09-02-23~~ 09-02-24

Fig 40. Package outline SOT1092-2 (HVQFN36)

15. Abbreviations

Table 8. Abbreviations

Acronym	Description
AC	Alternating Current
DC	Direct Current
ESD	ElectroStatic Discharge
FCDM	Field-induced Charged-Device Model
HBM	Human Body Model
IF	Intermediate Frequency
LO	Local Oscillator
MOS	Metal-Oxide Semiconductor
PCB	Printed-Circuit Board
RF	Radio Frequency

16. Revision history

Table 9. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BGX7220 v.1	20120808	Product data sheet	-	-

17. Legal information

17.1 Data sheet status

Document status[1][2]	Product status[3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL http://www.nxp.com.

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19. Tables

20. Figures

21. Contents

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Date of release: 8 August 2012

Document identifier: BGX7220

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