Product/Process Change Notice - PCN 24_0006 Rev. -

Analog Devices, Inc. One Analog Way, Wilmington, MA 01887, USA

This notice is to inform you of a change that will be made to certain ADI products (see Appendix A) that you may have purchased in the last 2 years. **Any inquiries or requests with this PCN (additional data or samples) must be sent to ADI within 30 days of publication date.** ADI contact information is listed below.

PCN Title:	HMC8412 Data Sheet Revision
Publication Date:	06-Feb-2024
Effectivity Date:	10-May-2024 *(the earliest date that a customer could expect to receive changed material)*
Revision Description:	Initial Release.

Description Of Change:

Product Data Sheet:
Table 1, Gain Variation over Temperature, limit changed to 0.010 dB/C from 0.005 dB/C.
Table 2, Gain Variation over Temperature, limit changed to 0.012 dB/C from 0.007 dB/C.
Table 3, Gain Variation over Temperature, limit changed to 0.022 dB/C from 0.012 dB/C.

Reason For Change:

The data sheet has been corrected to reflect actual Gain Variation over Temperature.

Impact of the change (positive or negative) on fit, form, function & reliability:

No change to fit, form, function, or reliability.

Summary of Supporting Information:

Changes will be reflected in Rev. A of the Product Data Sheet. See attached data sheet comparison detail in the Supporting Documents section of this PCN.

Supporting Documents

Attachment 1: Type: Datasheet Specification Comparison

ADI_PCN_24_0006_Rev_-_HMC8412_Data sheet Specification Comparison.pdf...

Note: If applicable, the device material declaration will be updated due to material change.

ADI Contact Information:

For questions on this PCN, please send an email to the regional contacts below or contact your local ADI sales representatives.

Americas:	Europe:	Japan:	Korea:	Rest of Asia:
PCN_Americas@analog.com	PCN_Europe@analog.com	PCN_Japan@analog.com	PCN_Korea@analog.com	PCN_ROA@analog.com

Appendix A - Affected ADI Models:

Added Parts On This Revision - Product Family / Model Number (2)

HMC8412 / HMC8412TCPZ-EP-PT

HMC8412 / HMC8412TCPZ-EP-R7

Appendix B - Revision History:			
Rev	**Publish Date**	**Effectivity Date**	**Rev Description**
Rev. -	06-Feb-2024	10-May-2024	Initial Release.

ANALOG DEVICES

AHEAD OF WHAT'S POSSIBLE™

HMC8412
DATA SHEET REVISION

Gain Variation Over Temperature – Table 1

Gain Variation Over Temperature in Datasheet Rev0

Table 1.

Parameter	Min	Typ	Max	Unit	Test Conditions/Comments
FREQUENCY RANGE	0.4		3	GHz	
GAIN	13	15.5		dB	
Gain Variation over Temperature		0.005		dB/°C	
NOISE FIGURE		1.4		dB	
RETURN LOSS					
Input		14		dB	
Output		13		dB	
OUTPUT					
Power for 1 dB Compression (OP1dB)	15	18		dBm	
P_{SAT}		20.5		dBm	
OIP3		32		dBm	Measurement taken at output power (P_{OUT}) per tone = 0 dBm
Second-Order Intercept (OIP2)		40		dBm	Measurement taken at P_{OUT} per tone = 0 dBm
POWER ADDED EFFICIENCY (PAE)		28		%	Measured at P_{SAT}
SUPPLY					
I_{DQ}		60		mA	
V_{DD}	2	5	6	V	

Gain Variation Over Temperature in Datasheet RevA

Table 1.

Parameter	Min	Typ	Max	Unit	Test Conditions/Comments
FREQUENCY RANGE	0.4		3	GHz	
GAIN	13	15.5		dB	
Gain Variation over Temperature		0.010		dB/°C	
NOISE FIGURE		1.4		dB	
RETURN LOSS					
Input		14		dB	
Output		13		dB	
OUTPUT					
Power for 1 dB Compression (OP1dB)	15	18		dBm	
P_{SAT}		20.5		dBm	
OIP3		32		dBm	Measurement taken at output power (P_{OUT}) per tone = 0 dBm
Second-Order Intercept (OIP2)		40		dBm	Measurement taken at P_{OUT} per tone = 0 dBm
POWER ADDED EFFICIENCY (PAE)		28		%	Measured at P_{SAT}
SUPPLY					
I_{DQ}		60		mA	
Amplifier Current (I_{DQ_AMP})		58.04		mA	
RBIAS Current (I_{RBIAS})		1.96		mA	
V_{DD}	2	5	6	V	

FROM:

Parameter	Typical Limit
Gain Variation Over Temperature	0.005 dB/°C

Note: Page 3 of 10 under Table 1, Specifications

TO:

Parameter	Typical Limit
Gain Variation Over Temperature	0.010 dB/°C

Gain Variation Over Temperature – Table 2

Gain Variation Over Temperature in Datasheet Rev0

Table 2.

Parameter	Min	Typ	Max	Unit	Test Conditions/Comments
FREQUENCY RANGE	3		9	GHz	
GAIN	13	15		dB	
Gain Variation over Temperature		0.007		dB/°C	
NOISE FIGURE		1.5		dB	
RETURN LOSS					
Input		15		dB	
Output		16		dB	
OUTPUT					
OP1dB	15.5	18		dBm	
P_{SAT}		20.5		dBm	
OIP3		33		dBm	Measurement taken at P_{OUT} per tone = 0 dBm
OIP2		41.5		dBm	Measurement taken at P_{OUT} per tone = 0 dBm
PAE		29		%	Measured at P_{SAT}
SUPPLY					
I_{DQ}		60		mA	
V_{DD}	2	5	6	V	

FROM:

Parameter	Typical Limit
Gain Variation Over Temperature	0.007 dB/°C

Note: Page 3 of 10 under Table 2, Specifications

Gain Variation Over Temperature in Datasheet RevA

Table 2.

Parameter	Min	Typ	Max	Unit	Test Conditions/Comments
FREQUENCY RANGE	3		9	GHz	
GAIN	13	15		dB	
Gain Variation over Temperature		0.012		dB/°C	
NOISE FIGURE		1.5		dB	
RETURN LOSS					
Input		15		dB	
Output		16		dB	
OUTPUT					
OP1dB	15.5	18		dBm	
P_{SAT}		20.5		dBm	
OIP3		33		dBm	Measurement taken at P_{OUT} per tone = 0 dBm
OIP2		41.5		dBm	Measurement taken at P_{OUT} per tone = 0 dBm
PAE		29		%	Measured at P_{SAT}
SUPPLY					
I_{DQ}		60		mA	
Amplifier Current (I_{DQ_AMP})		58.04		mA	
RBIAS Current (I_{RBIAS})		1.96		mA	
V_{DD}	2	5	6	V	

TO:

Parameter	Typical Limit
Gain Variation Over Temperature	0.012 dB/°C

Gain Variation Over Temperature – Table 3

Gain Variation Over Temperature in Datasheet Rev0

Table 3.

Parameter	Min	Typ	Max	Unit	Test Conditions/Comments
FREQUENCY RANGE	9		11	GHz	
GAIN	12	14		dB	
Gain Variation over Temperature		0.012		dB/°C	
NOISE FIGURE		1.8		dB	
RETURN LOSS					
Input		14		dB	
Output		10		dB	
OUTPUT					
OP1dB	11	14		dBm	
P_{SAT}		18		dBm	
OIP3		31		dBm	Measurement taken at P_{OUT} per tone = 0 dBm
OIP2		49.5		dBm	Measurement taken at P_{OUT} per tone = 0 dBm
PAE		15.5		%	Measured at P_{SAT}
SUPPLY					
I_{DQ}		60		mA	
V_{DD}	2	5	6	V	

FROM:

Parameter	Typical Limit
Gain Variation Over Temperature	0.012 dB/°C

Note: Page 4 of 10 under Table 3, Specifications

Gain Variation Over Temperature in Datasheet RevA

Table 3.

Parameter	Min	Typ	Max	Unit	Test Conditions/Comments
FREQUENCY RANGE	9		11	GHz	
GAIN	12	14		dB	
Gain Variation over Temperature		0.022		dB/°C	
NOISE FIGURE		1.8		dB	
RETURN LOSS					
Input		14		dB	
Output		10		dB	
OUTPUT					
OP1dB	11	14		dBm	
P_{SAT}		18		dBm	
OIP3		31		dBm	Measurement taken at P_{OUT} per tone = 0 dBm
OIP2		49.5		dBm	Measurement taken at P_{OUT} per tone = 0 dBm
PAE		15.5		%	Measured at P_{SAT}
SUPPLY					
I_{DQ}		60		mA	
Amplifier Current (I_{DQ_AMP})		58.04		mA	
RBIAS Current (I_{RBIAS})		1.96		mA	
V_{DD}	2	5	6	V	

TO:

Parameter	Typical Limit
Gain Variation Over Temperature	0.022 dB/°C