Product/Process Change Notice - PCN 24_0010 Rev. -

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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:	Data Sheet Correction For ADRF5046/ADRF5047
Publication Date:	15-Mar-2024
Effectivity Date:	15-Mar-2024 *(the earliest date that a customer could expect to receive changed material)*
Revision Description:	Initial Release.

Description Of Change:

Related electrical performance parameters for RFC and RF1-2-3-4 pins are given separately to remove ambiguity in the definition of the hot-switching capability of the device.

Reason For Change:

Datasheet updated to improve readability and clarity.

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

No change to fit, form, function or reliability.

Summary of Supporting Information:

No product qualification is required for the change.

Supporting Documents

Attachment 1: Type: Datasheet Specification Comparison

ADI_PCN_24_0010_Rev_-_Data Sheet 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 (4)

ADRF5046 / ADRF5046BCCZN	ADRF5046 / ADRF5046BCCZN-R7	ADRF5047 / ADRF5047BCCZN	ADRF5047 / ADRF5047BCCZN-R7

Appendix B - Revision History:			
Rev	**Publish Date**	**Effectivity Date**	**Rev Description**
Rev. -	15-Mar-2024	15-Mar-2024	Initial Release.

ADRF5046/47 Datasheet Changes from Rev 0 to Rev A

Rev 0

FEATURES

Ultra wideband frequency range: 100 MHz to 44 GHz
Reflective design
Low insertion loss
1.5 dB to 18 GHz
2.5 dB to 40 GHz
3.0 dB to 44 GHz
High isolation
46 dB to 18 GHz
33 dB to 40 GHz
31 dB to 44 GHz
High input linearity
P0.1dB: 27.5 dBm typical
IP3: 50 dBm typical
High RF input power handling
Through path: 27 dBm
Hot switching: 27 dBm
No low frequency spurious
0.1 dB RF settling time: 50 ns
20-terminal, 3 mm × 3 mm, RoHS-compliant, LGA package

Rev A

FEATURES

- Ultra wideband frequency range: 100 MHz to 44 GHz
- Reflective design
- Low insertion loss
  - 1.5 dB to 18 GHz
  - 2.5 dB to 40 GHz
  - 3.0 dB to 44 GHz
- High isolation
  - 46 dB to 18 GHz
  - 33 dB to 40 GHz
  - 31 dB to 44 GHz
- High input linearity
  - P0.1dB: 27.5 dBm typical
  - IP3: 50 dBm typical
- High RF input power handling
  - Through path: 27 dBm
  - Hot switching (RFC): 27 dBm
- No low frequency spurious
- 0.1 dB RF settling time: 50 ns
- 20-terminal, 3 mm × 3 mm, RoHS-compliant, LGA package

ADRF5046/47 Datasheet Changes from Rev 0 to Rev A

Rev 0

GENERAL DESCRIPTION

The ADRF5046 is a reflective, single-pole four-throw (SP4T) switch manufactured in the silicon process.

The ADRF5046 operates from 100 MHz to 44 GHz with insertion loss of lower than 3.0 dB and isolation of higher than 31 dB. The device has a radio frequency (RF) input power handling capability of 27 dBm for both the through path and hot switching.

The ADRF5046 draws a low current of 3 µA on the positive supply of +3.3 V, and −110 µA on the negative supply of −3.3 V.

The device provides complementary metal-oxide semiconductor (CMOS)-/low voltage transistor-transistor logic (LVTTL)-compatible controls.

The ADRF5046 comes in a 20-terminal, 3 mm × 3 mm, RoHS-compliant, land grid array (LGA) package and can operate from −40°C to +105°C.

Rev A

GENERAL DESCRIPTION

The ADRF5046 is a reflective, single-pole four-throw (SP4T) switch manufactured in the silicon process.

The ADRF5046 operates from 100 MHz to 44 GHz with insertion loss of lower than 3.0 dB and isolation of higher than 31 dB. The device has a radio frequency (RF) input power handling capability of 27 dBm for both the through path and hot switching at RFC pin.

The ADRF5046 draws a low current of 3 µA on the positive supply of +3.3 V, and −110 µA on the negative supply of −3.3 V. The device provides complementary metal-oxide semiconductor (CMOS)-/low voltage transistor-transistor logic (LVTTL)-compatible controls.

The ADRF5046 comes in a 20-terminal, 3 mm × 3 mm, RoHS-compliant, land grid array (LGA) package and can operate from −40°C to +105°C.

ADRF5046/47 Datasheet Changes from Rev 0 to Rev A

Rev 0

SPECIFICATIONS

Power supply voltage (V_{DD}) = +3.3 V, negative supply voltage (V_{SS}) = −3.3 V, digital control inputs voltage (V_{CTL}) = 0 V or +3.3 V, and case temperature (T_{CASE}) = 25°C on a 50 Ω system, unless otherwise noted.

Table 1.

Parameter	Symbol	Test Conditions/Comments	Min	Typ	Max	Unit
FREQUENCY RANGE	f		100		44,000	MHz

Rev A

SPECIFICATIONS

Power supply voltage (V_{DD}) = +3.3 V, negative supply voltage (V_{SS}) = −3.3 V, digital control inputs voltage (V_{CTL}) = 0 V or +3.3 V, and case temperature (T_{CASE}) = 25°C on a 50 Ω system, unless otherwise noted. RFx refers to RF1, RF2, RF3 and RF4.

Table 1. Electrical Specifications

Parameter	Symbol	Test Conditions/Comments	Min	Typ	Max	Unit
FREQUENCY RANGE	f		100		44,000	MHz

ADRF5046/47 Datasheet Changes from Rev 0 to Rev A

Rev 0

Digital Control Inputs Voltage	V_{CTL}		0	V_{DD}	V
RFx Input Power[3]	P_{IN}	f = 200 MHz to 40 GHz, T_{CASE} = 85°C[4]			
Through Path		RF signal is applied to RFC or through connected RF throw port		27	dBm
Hot Switching		RF signal is present at RFC while switching between RF throw port		27	dBm
Case Temperature	T_{CASE}		−40	+105	°C

Rev A

Digital Control Inputs Voltage	V_{CTL}		0	V_{DD}	V
RF Input Power[3]	P_{IN}	f = 200 MHz to 40 GHz, T_{CASE} = 85°C[4]			
Through Path		RF signal is applied to RFC or through connected RF throw port (selected RFx)		27	dBm
Hot Switching (RFC)		RF signal is applied to RFC while switching between RFx ports		27	dBm
Hot Switching (RFx)		RF signal is applied to RFx port while switching to or from another RFx port		24	dBm
Case Temperature	T_{CASE}		−40	+105	°C

ADRF5046/47 Datasheet Changes from Rev 0 to Rev A

Rev 0

ABSOLUTE MAXIMUM RATINGS

For recommended operating conditions, see Table 1.

Table 2.

Parameter	Rating
Supply Voltage	
Positive	−0.3 V to +3.6 V
Negative	−3.6 V to +0.3 V
Digital Control Inputs Voltage	−0.3 V to V_{DD} +0.3 V
RFx Input Power (f^1 = 200 MHz to 40 GHz, T_{CASE} = 85°C[2])	
Through Path	27.5 dBm
Hot Switching	27.5 dBm
Temperature	
Junction, T_J	135°C
Storage Range	−65°C to +150°C
Reflow	260°C
Electrostatic Discharge (ESD) Sensitivity	
Human Body Model (HBM)	
RFx Pins	500 V
Supply and Digital Control Pins	2000 V

Rev A

ABSOLUTE MAXIMUM RATINGS

For recommended operating conditions, see Table 1.

Table 2. Absolute Maximum Ratings

Parameter	Rating
Supply Voltage	
Positive	−0.3 V to +3.6 V
Negative	−3.6 V to +0.3 V
Digital Control Input Voltage	−0.3 V to V_{DD}+0.3 V
RFC Input Power (f^1 = 200 MHz to 40 GHz, T_{CASE} = 85°C[2])	
Through Path	27.5 dBm
Hot Switching	27.5 dBm
RFx Input Power (f^1 = 200 MHz to 40 GHz, T_{CASE} = 85°C[2])	
Through Path	27.5 dBm
Hot Switching	24.5 dBm
Temperature	
Junction, T_J	135°C
Storage Range	−65°C to +150°C
Reflow	260°C
Electrostatic Discharge (ESD) Sensitivity	
Human Body Model (HBM)	
RF Pins	500 V
Supply and Digital Control Pins	2000 V