



Product/Process Change Notice - PCN 24_0146 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:	ADRF5025 Data Sheet Revision
Publication Date:	03-Jul-2024
Effectivity Date:	03-Jul-2024 <i>(the earliest date that a customer could expect to receive changed material)</i>
Revision Description:	Initial Release.

Description Of Change:

Data Sheet Revision from Rev-C to Rev-D for ADRF5025:

1. Features and general description sections are updated for hot-switching capability description.
2. Electrical table changed for hot-switching specification from 26dBm to 23dBm for RF1 and RF2 ports.
3. Power derating curve for low frequency (Figure 2) updated and reverted back to Rev-B datasheet plots.

Reason For Change:

To accurately reflect device capabilities.

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

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

Summary of Supporting Information:

Data Sheet changes will be reflected in Rev-D of the Product Data Sheet. See attached document for comparison detail.

Supporting Documents

Attachment 1: Type: Datasheet Specification Comparison

[ADI_PCN_24_0146_Rev_-ADRF5025DataSheetComparison.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)

ADRF5025 / ADRF5025BCCZN

ADRF5025 / ADRF5025BCCZN-R7

Appendix B - Revision History:

Rev	Publish Date	Effectivity Date	Rev Description
Rev. -	03-Jul-2024	03-Jul-2024	Initial Release.

ADRF5025 Datasheet Changes from Rev C to Rev D

Rev C

FEATURES

- ▶ Ultrawideband frequency range: 9 kHz to 44 GHz
- ▶ Reflective design
- ▶ Low insertion loss with impedance match
 - ▶ 0.9 dB typical to 18 GHz
 - ▶ 1.4 dB typical to 40 GHz
 - ▶ 1.6 dB typical to 44 GHz
- ▶ Low insertion loss without impedance match
 - ▶ 0.9 dB typical to 18 GHz
 - ▶ 1.7 dB typical to 40 GHz
 - ▶ 2.2 dB typical to 44 GHz
- ▶ High input linearity
 - ▶ P1dB: 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
- ▶ RF settling time (50% V_{CTRL} to 0.1 dB final RF output): 3.4 μ s
- ▶ 12-terminal, 2.25 mm \times 2.25 mm LGA package
- ▶ Pin compatible with the [ADRF5024](#) fast switching version

Rev D

FEATURES

- ▶ Ultrawideband frequency range: 9 kHz to 44 GHz
- ▶ Reflective design
- ▶ Low insertion loss with impedance match
 - ▶ 0.9 dB typical to 18 GHz
 - ▶ 1.4 dB typical to 40 GHz
 - ▶ 1.6 dB typical to 44 GHz
- ▶ Low insertion loss without impedance match
 - ▶ 0.9 dB typical to 18 GHz
 - ▶ 1.7 dB typical to 40 GHz
 - ▶ 2.2 dB typical to 44 GHz
- ▶ High input linearity
 - ▶ P1dB: 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
- ▶ RF settling time (50% V_{CTRL} to 0.1 dB final RF output): 3.4 μ s
- ▶ 12-terminal, 2.25 mm \times 2.25 mm LGA package
- ▶ Pin compatible with the [ADRF5024](#) fast switching version

ADRF5025 Datasheet Changes from Rev C to Rev D

Rev C

GENERAL DESCRIPTION

The ADRF5025 is a reflective single-pole double-throw (SPDT) switch, manufactured in silicon process.

This switch operates from 9 kHz to 44 GHz with better than 1.6 dB of insertion loss and 35 dB of isolation. The ADRF5025 has a radio frequency (RF) input power handling capability of 27 dBm for both the through path and hot switching.

Rev D

GENERAL DESCRIPTION

The ADRF5025 is a reflective single-pole double-throw (SPDT) switch, manufactured in silicon process.

This switch operates from 9 kHz to 44 GHz with better than 1.6 dB of insertion loss and 35 dB of isolation. The ADRF5025 has a radio frequency (RF) input power handling capability of 27 dBm for both the through path and hot switching **at RFC pin.**

ADRF5025 Datasheet Changes from Rev C to Rev D

Rev C

SPECIFICATIONS

ELECTRICAL SPECIFICATIONS

VDD = 3.3 V, VSS = -3.3 V, VCTRL = 0 V or 3.3 V, and case temperature (T_{CASE}) = 25°C for a 50 Ω system, unless otherwise noted.

RECOMMENDED OPERATING CONDITIONS					
Supply Voltage					
Positive	V _{DD}	3.15	3.45	V	
Negative	V _{SS}	-3.45	-3.15	V	
Digital Control Voltage	V _{CTRL}	0	V _{DD}	V	
RF Input Power ²	P _{IN}	f = 10 MHz to 40 GHz, T _{CASE} = 85°C ³			
Input at RFC					
Through Path			27	dBm	
Hot Switching			27	dBm	
Input at RFx					
Through Path			26	dBm	
Hot Switching			26	dBm	
Case Temperature	T _{CASE}	-40	+105	°C	

Rev D

SPECIFICATIONS

ELECTRICAL SPECIFICATIONS

VDD = 3.3 V, VSS = -3.3 V, VCTRL = 0 V or 3.3 V, and T_{CASE} = 25°C on a 50 Ω system, unless otherwise noted. RFx refers to RF1 and RF2.

RECOMMENDED OPERATING CONDITIONS					
Supply Voltage					
Positive	V _{DD}	3.15	3.45	V	
Negative	V _{SS}	-3.45	-3.15	V	
Digital Control Voltage	V _{CTRL}	0	V _{DD}	V	
RF Input Power ²	P _{IN}	f = 10 MHz to 40 GHz, T _{CASE} = 85°C ³			
Input at RFC					
Through Path			27	dBm	
Hot Switching			27	dBm	
Input at RFx					
Through Path			26	dBm	
Hot Switching			23	dBm	
Case Temperature	T _{CASE}	-40	+105	°C	

ADRF5025 Datasheet Changes from Rev C to Rev D

Rev C

ABSOLUTE MAXIMUM RATINGS

For the recommended operating conditions, see Table 1.

Table 2.

Parameter	Rating
Positive Supply Voltage	-0.3 V to +3.6 V
Negative Supply Voltage	-3.6 V to +0.3 V
Digital Control Input Voltage	
Voltage	-0.3 V to VDD + 0.3 V
Current	3 mA
RF Input Power ¹ (f = 10 MHz to 40 GHz, T _{CASE} = 85°C ²)	
Input at RFC	
Through Path	27.5 dBm
Hot Switching	27.5 dBm
Input at RFx	
Through Path	26.5 dBm
Hot Switching	26.5 dBm
RF Input Power Under Unbiased Condition ¹ (V _{DD} , V _{SS} = 0 V)	21 dBm

POWER DERATING CURVES

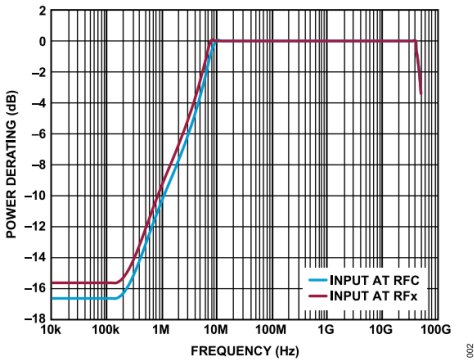
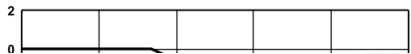


Figure 2. Power Derating vs. Frequency, Low Frequency Detail, T_{CASE} = 85°C



Rev D

ABSOLUTE MAXIMUM RATINGS

For the recommended operating conditions, see Table 1.

Table 2.

Parameter	Rating
Positive Supply Voltage	-0.3 V to +3.6 V
Negative Supply Voltage	-3.6 V to +0.3 V
Digital Control Input Voltage	
Voltage	-0.3 V to VDD + 0.3 V
Current	3 mA
RF Input Power ¹ (f = 10 MHz to 40 GHz, T _{CASE} = 85°C ²)	
Input at RFC	
Through Path	27.5 dBm
Hot Switching	27.5 dBm
Input at RFx	
Through Path	26.5 dBm
Hot Switching	23.5 dBm
RF Input Power Under Unbiased Condition ¹ (V _{DD} , V _{SS} = 0 V)	21 dBm

POWER DERATING CURVES

Power derating data shown in Figure 2 and Figure 3 applies to both RFC and RFx pins.

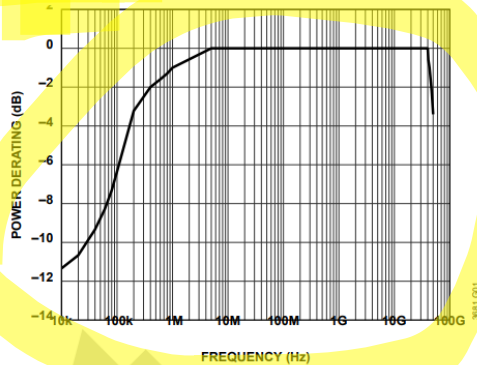


Figure 2. Power Derating vs. Frequency, Low Frequency Detail, T_{CASE} = 85°C

► Plot data is from RevB