



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 - ADRF5025 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 (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 × 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 × 2.25 mm LGA package**
- Pin compatible with the [ADRF5024](#) fast switching version

ADRF5025 Datasheet Changes from Rev C to 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.

Rev C

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

SPECIFICATIONS

ELECTRICAL SPECIFICATIONS

V_{DD} = 3.3 V, V_{SS} = -3.3 V, V_{CTRL} = 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		RF signal is applied to RFC	27	dBm		
Through Path		RF signal is present at RFC while switching between RF1 and RF2	27	dBm		
Hot Switching						
Input at RFx		RF signal is applied through connected RFx	26	dBm		
Through Path		RF signal is present at RFx while switching between RF1 and RF2	26	dBm		
Hot Switching						
Case Temperature	T _{CASE}		-40	+105	°C	

Rev C

SPECIFICATIONS

ELECTRICAL SPECIFICATIONS

V_{DD} = 3.3 V, V_{SS} = -3.3 V, V_{CTRL} = 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		RF signal is applied to RFC	27	dBm		
Through Path		RF signal is present at RFC while switching between RF1 and RF2	27	dBm		
Hot Switching						
Input at RFx		RF signal is applied through connected RFx	26	dBm		
Through Path		RF signal is present at RFx while switching between RF1 and RF2	26	dBm		
Hot Switching						
Case Temperature	T _{CASE}		-40	+105	°C	

Rev D

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	-0.3 V to VDD + 0.3 V
Voltage	-0.3 V to VDD + 0.3 V
Current	3 mA
RF Input Power ¹ (f = 10 MHz to 40 GHz, $T_{CASE} = 85^{\circ}\text{C}$)	
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 ($V_{DD} = 3.6 \text{ V}$, $V_{SS} = 0 \text{ V}$)	21 dBm

POWER DERATING CURVES

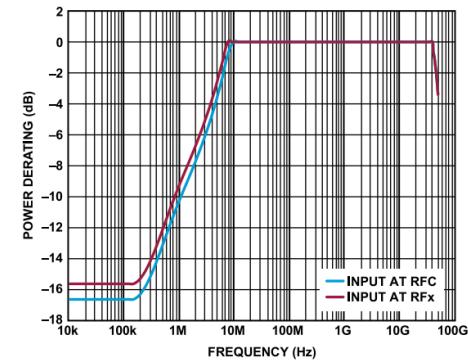


Figure 2. Power Derating vs. Frequency, Low Frequency Detail, $T_{CASE} = 85^{\circ}\text{C}$

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	-0.3 V to VDD + 0.3 V
Voltage	-0.3 V to VDD + 0.3 V
Current	3 mA
RF Input Power ¹ (f = 10 MHz to 40 GHz, $T_{CASE} = 85^{\circ}\text{C}$)	
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 ($V_{DD} = 3.6 \text{ V}$, $V_{SS} = 0 \text{ V}$)	21 dBm

POWER DERATING CURVES

Power derating data shown in [Figure 2](#) and [Figure 3](#) applies to both RFC and RFx pins.

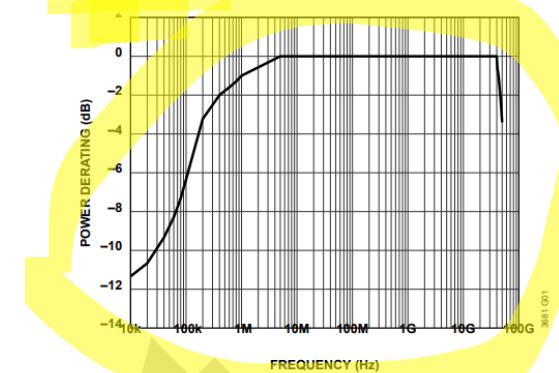


Figure 2. Power Derating vs. Frequency, Low Frequency Detail, $T_{CASE} = 85^{\circ}\text{C}$

► Plot data is from RevB