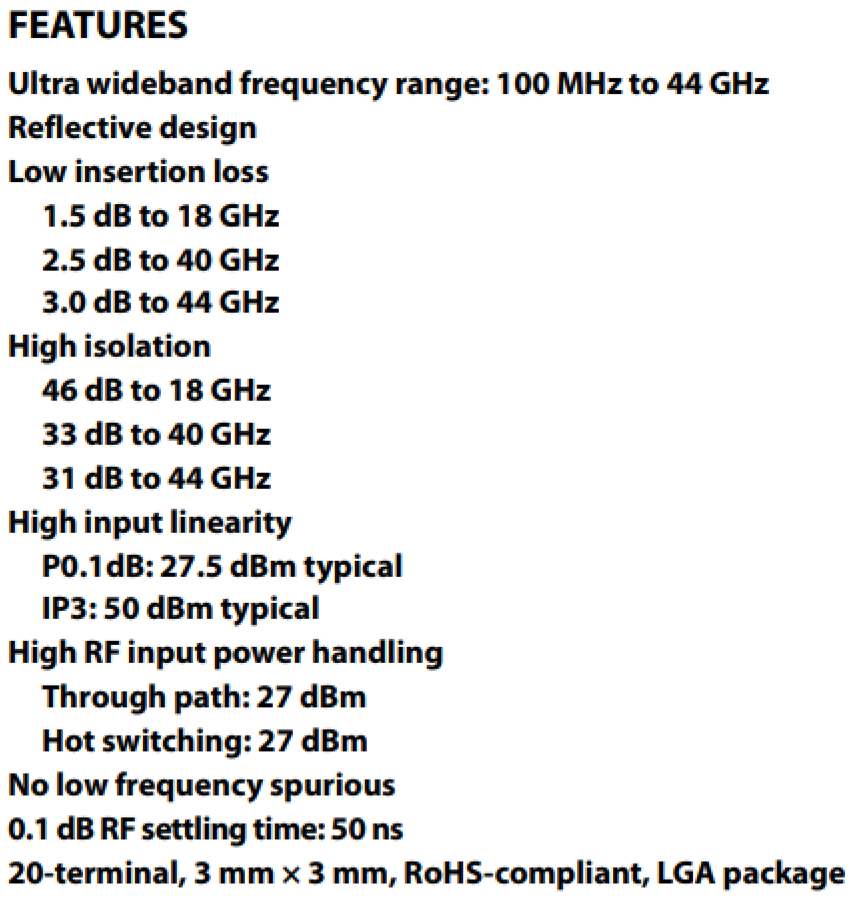
ADRF5046/47 Datasheet Changes from Rev 0 to Rev A

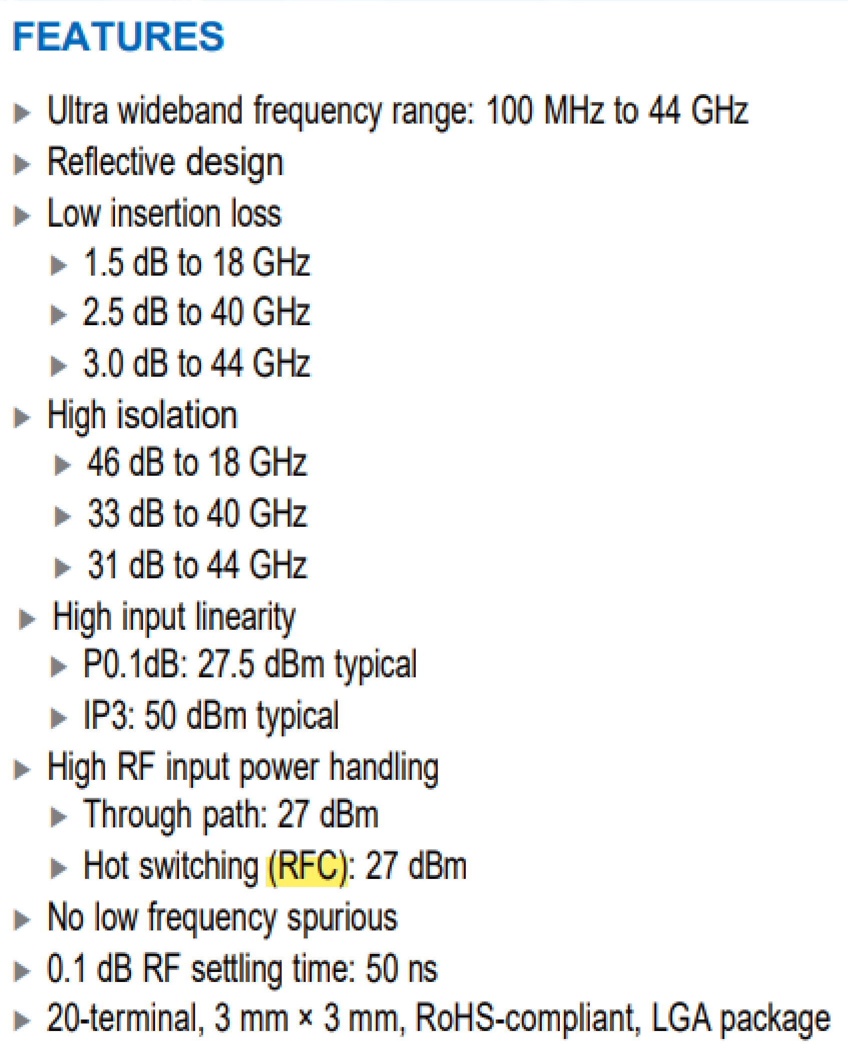
Rev 0



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



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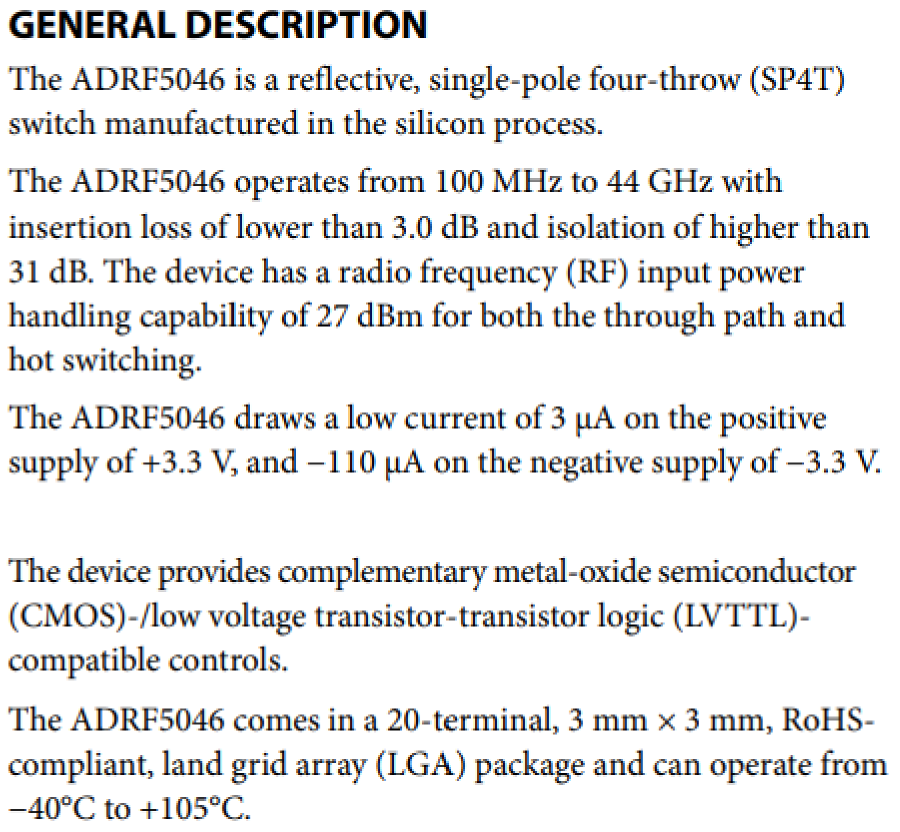


GENERAL DESCRIPTION

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

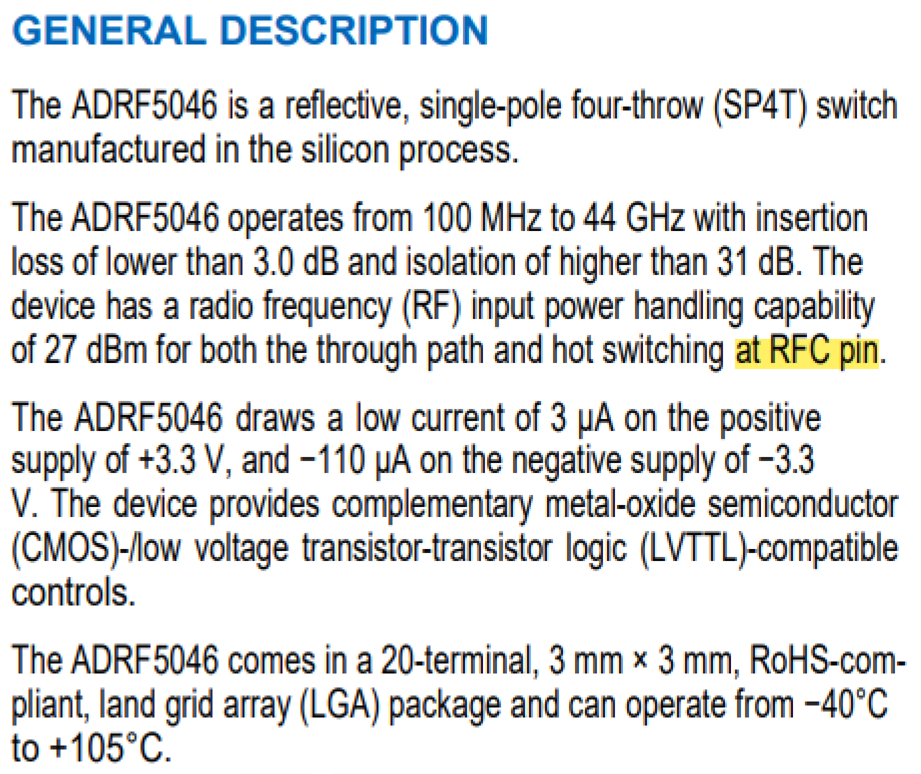
The ADRF5046 operates from 100 MHz to 44 GHz with insertion loss of lower than 3.0 dB and isolation of higher than 31 dB. The device has a radio frequency (RF) input power handling capability of 27 dBm for both the through path and hot switching.

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



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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.

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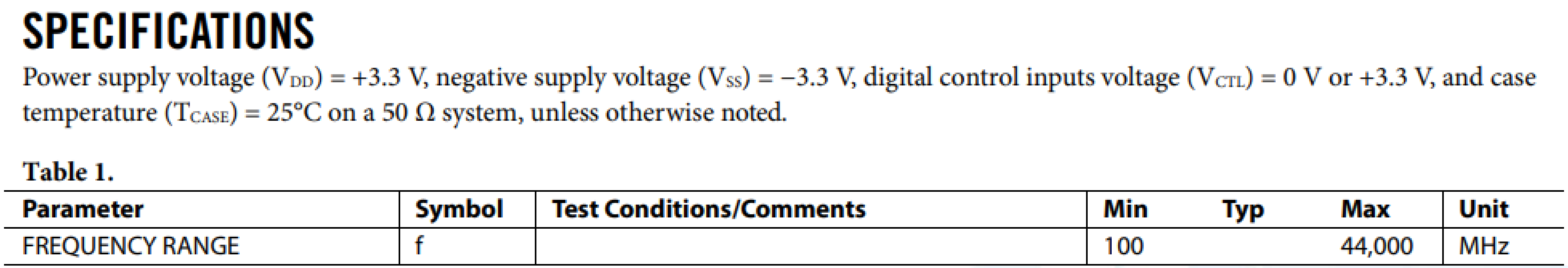
Rev 0



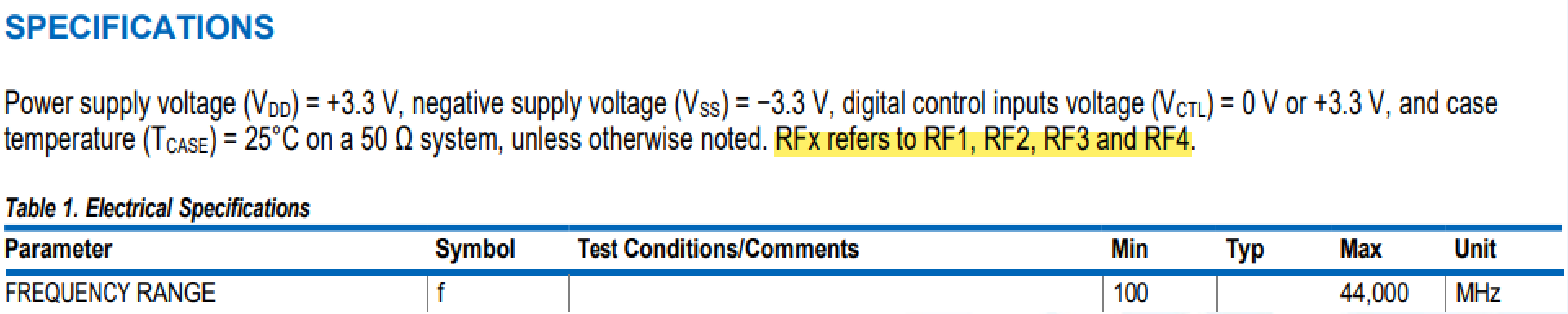
SPECIFICATIONS

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

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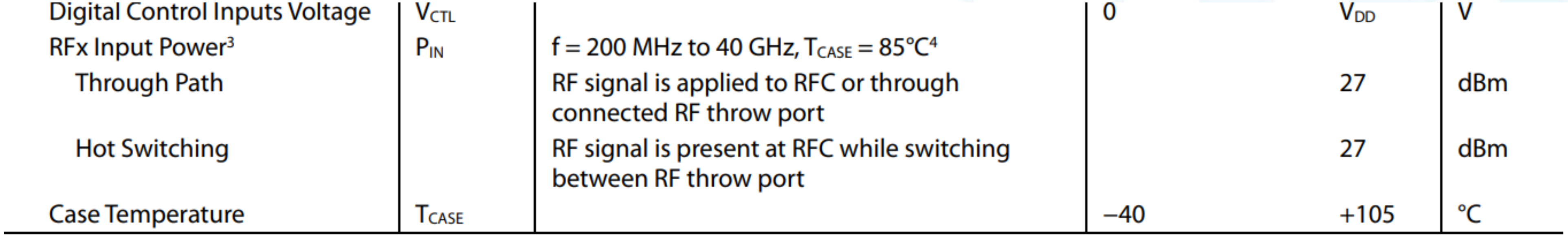
Table 1. Electrical Specifications

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

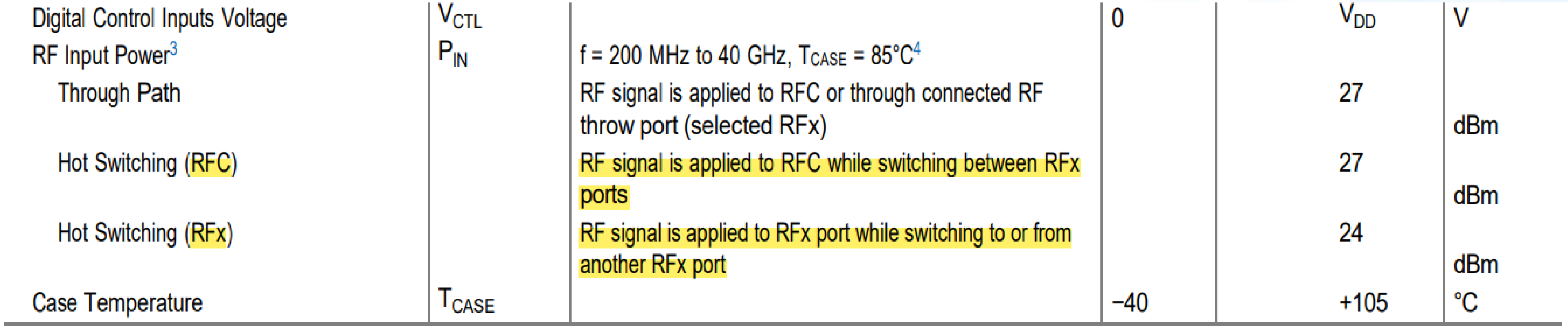
ADRF5046/47 Datasheet Changes from Rev 0 to Rev A

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

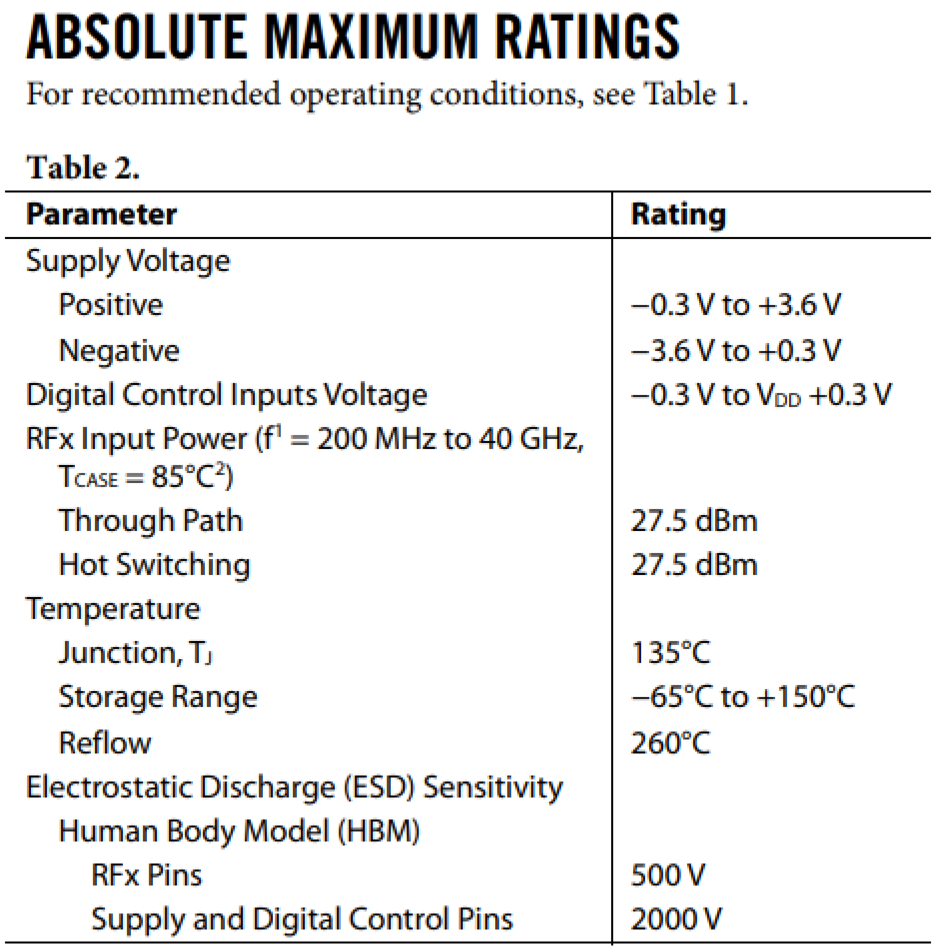
Rev A



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



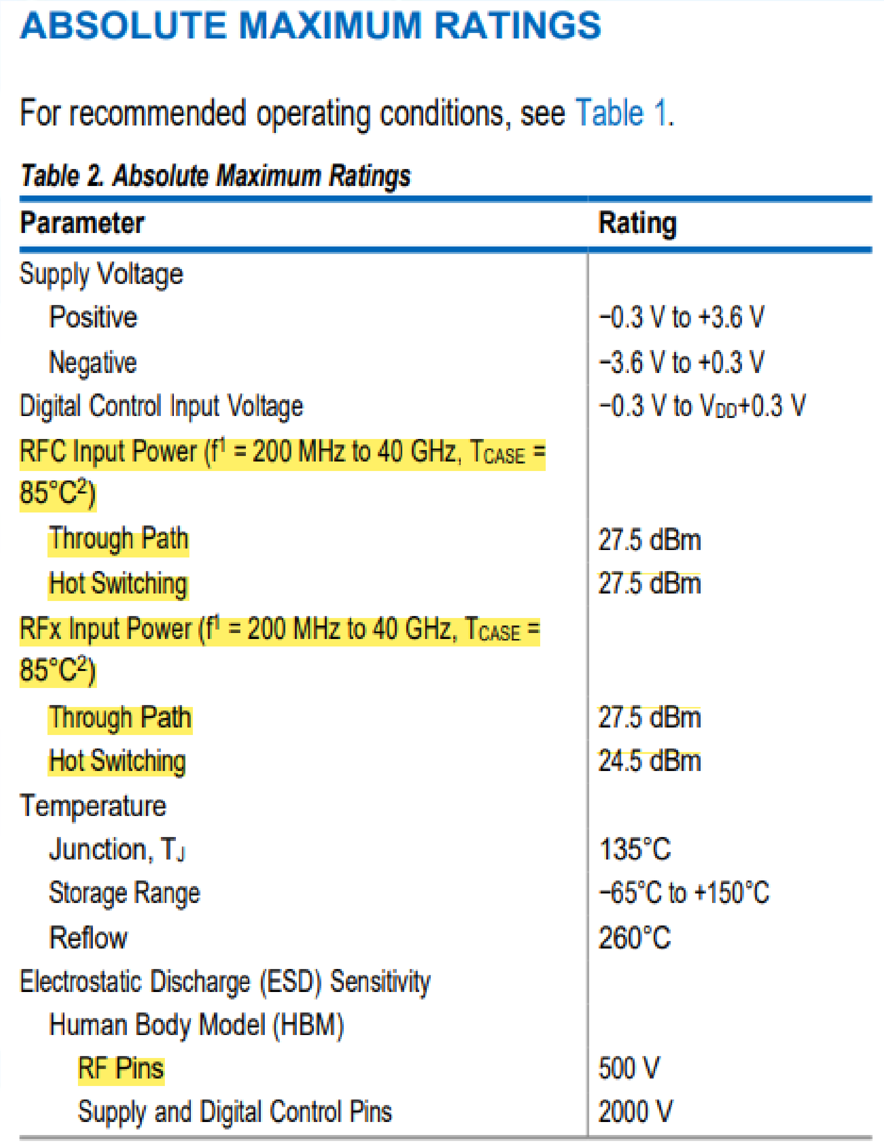
ABSOLUTE MAXIMUM RATINGS

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