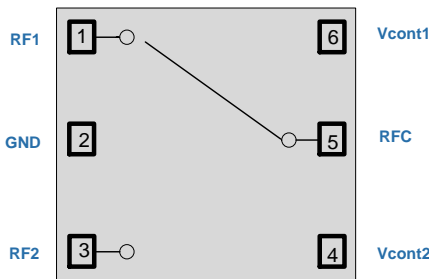


RFSW8009

11a/b/g/n/ac Wi-Fi SPDT SWITCH
0.5 to 6.0GHz

The RFSW8009 is a high power single-pole double-throw (SPDT) switch designed for high performance wireless applications. This wideband switch has been designed for use from 0.5 to 6GHz, where high linearity, high isolation, low insertion loss, and small package size are required. Switching for the RFSW8009 is controlled via two control voltage inputs. The RFSW8009 is manufactured in a pHEMT GaAs process and packaged in a 6-pin, 1.5 x 1.86mm Laminate package.



Functional Block Diagram (Top View)

Ordering Information

| | |
|-----------------|--------------------------------------|
| RFSW8009SB | Standard 5 piece bag |
| RFSW8009SQ | Standard 25 piece bag |
| RFSW8009SR | Standard 100 piece reel |
| RFSW8009TR7 | Standard 2500 piece reel |
| RFSW8009PCK-410 | Evaluation board sample 0.5 – 2.5GHz |
| RFSW8009PCK-411 | Evaluation board sample 2.5 – 6GHz |



Package: Laminate 6-pin
1.5mm x 1.86mm x 0.59mm

Features

- Control Voltage: 2.7V to 5.3V
- Insertion Loss:
 - 0.45dB @ 2.5GHz
 - 0.65dB @ 6.0GHz.
- Isolation:
 - 28dB @ 2.5GHz
 - 26dB @ 6.0GHz
- Input P0.1dB:
 - 32dBm @ 2.0-6.0GHz, 3V

Applications

- IEEE 802.11 Wi-Fi Systems
- IEEE 802.15.4 ZigBee Systems
- Customer Premise Equipment (CPE)
- Wireless Access Points, Gateways and Router Applications
- ISM Band Transmitter Applications

Absolute Maximum Ratings

| Parameter | Rating | Unit |
|-----------------------------------|-------------|------|
| Control Voltage | 6.0 | V |
| Operating Ambient Temperature | -45 to +85 | °C |
| Storage Temperature | -55 to +150 | °C |
| Input RF Power (VCTL High = 3.0V) | +34 | dBm |
| Input RF Power (VCTL High = 5.0V) | +35 | dBm |



Caution! ESD sensitive device.



RFMD Green: RoHS status based on EU Directive 2011/65/EU (at time of this document revision), halogen free per IEC 61249-2-21, < 1000ppm each of antimony trioxide in polymeric materials and red phosphorus as a flame retardant, and <2% antimony in solder.

Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability. Specified typical performance or functional operation of the device under Absolute Maximum Rating conditions is not implied.

Electrical Characteristics

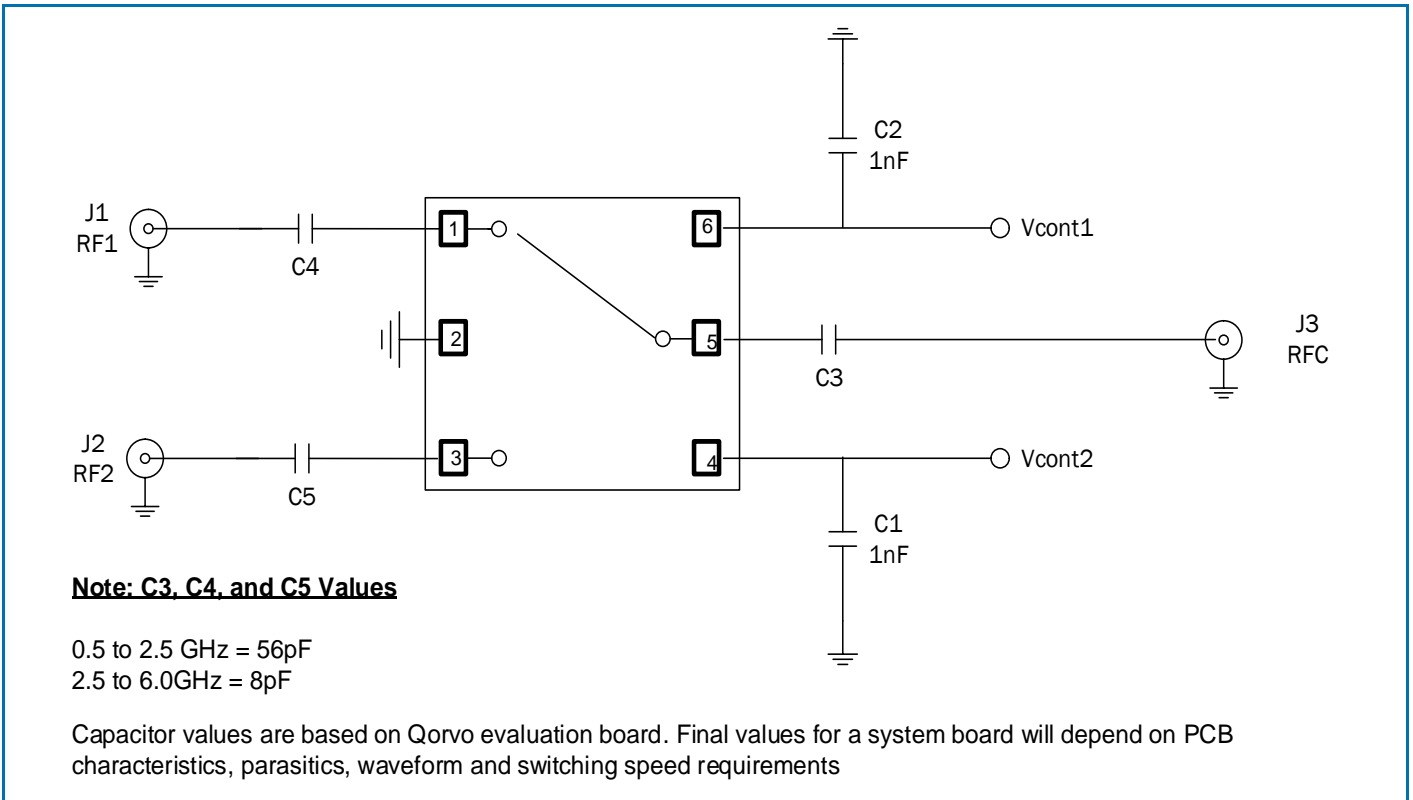
| Parameter | Specification | | | Unit | Condition |
|------------------------------|---------------|------|------|------|--|
| | Min | Typ | Max | | |
| Operating Parameters | | | | | Vcont High = 3.0V; Vcont Low = 0V; Temp = 25°C; Unless noted otherwise. |
| Frequency | 0.5 | | 6.0 | GHz | |
| Switch Control Voltage: High | 2.7 | 3.0 | 5.3 | V | |
| Switch Control Voltage: Low | -0.2 | 0 | 0.20 | V | |
| Insertion Loss | - | 0.40 | 0.65 | dB | 0.5 to 2.0GHz; DC blocking capacitors = 56pF |
| | - | 0.45 | 0.70 | dB | 2.0 to 2.5GHz; DC blocking capacitors = 56pF |
| | - | 0.55 | 0.80 | dB | 2.5 to 3.8GHz; DC blocking capacitors = 8pF |
| | - | 0.65 | 0.90 | dB | 3.8 to 6.0GHz; DC blocking capacitors = 8pF |
| Isolation | 25 | 28 | - | dB | 0.5 to 2.0GHz; DC blocking capacitors = 56pF |
| | 25 | 28 | - | dB | 2.0 to 2.5GHz; DC blocking capacitors = 56pF |
| | 25 | 28 | - | dB | 2.5 to 3.8GHz; DC blocking capacitors = 8pF |
| | 22 | 26 | - | dB | 3.8 to 6.0GHz; DC blocking capacitors = 8pF |
| Return Loss | 15 | 20 | - | dB | 0.5 to 2.0GHz; DC blocking capacitors = 56pF |
| | 15 | 20 | - | dB | 2.0 to 2.5GHz; DC blocking capacitors = 56pF |
| | 10 | 15 | - | dB | 2.5 to 6.0GHz; DC blocking capacitors = 8pF |
| Input P0.1dB | - | +32 | - | dBm | 0.5 to 2.5GHz; DC blocking capacitors = 56pF |
| | - | +32 | - | dBm | 2.5 to 6.0GHz; DC blocking capacitors = 8pF |
| | - | +35 | - | dBm | 0.5 to 6.0GHz; Vcont high = 5V. |
| Input P1dB | - | +34 | - | dBm | 0.5 to 2.5GHz; DC blocking capacitors = 56pF |
| | - | +34 | - | dBm | 2.5 to 6.0GHz; DC blocking capacitors = 8pF |
| Input IP3 | - | +60 | - | dBm | Freq=2.5GHz; Input Power = +20dBm |
| 2 nd Harmonic | - | 80 | - | dBc | Freq=2.5GHz; Input Power = +20dBm |
| 3 rd Harmonic | - | 80 | - | dBc | Freq=2.5GHz; Input Power = +20dBm |
| Switch Control Current; High | - | 0.1 | 10 | µA | No RF input ; All Modes |

| Parameter | Specification | | | Unit | Condition |
|----------------------|---------------|-----|-----|------|---|
| | Min | Typ | Max | | |
| Switch Control Speed | - | 50 | 250 | ns | 50% of control to 90/10% of RF; All Modes |

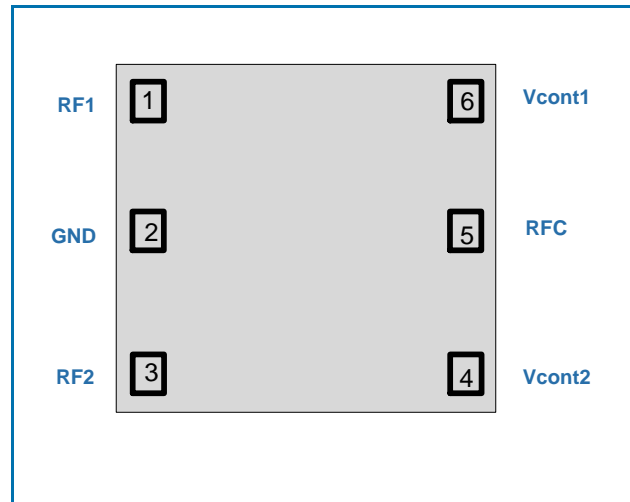
Logic Control Table

| Mode | Vcont1 | Vcont2 |
|-----------|--------|--------|
| RF1 – RFC | 1 | 0 |
| RF2 – RFC | 0 | 1 |

Application Schematic



Pin Out

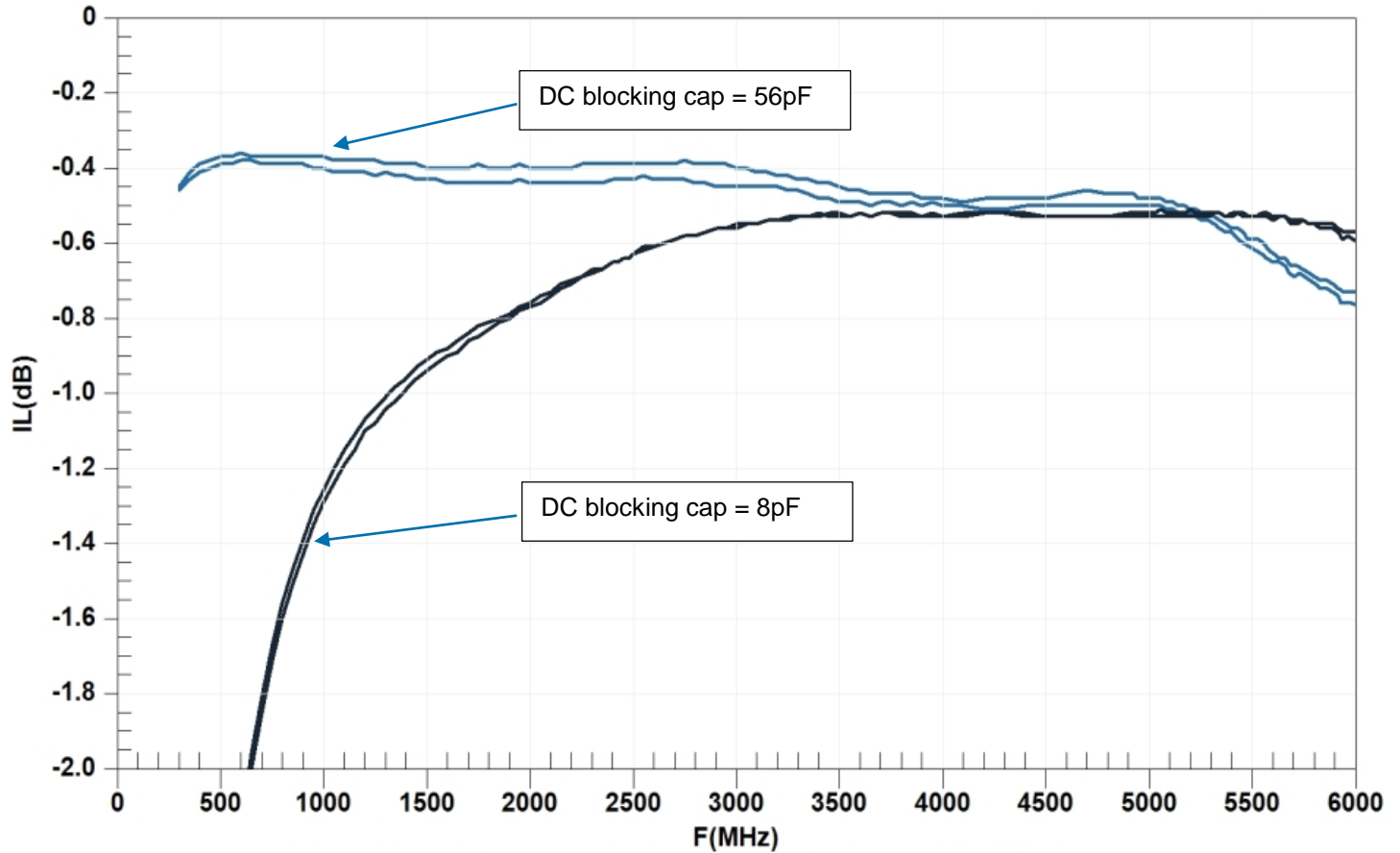


Pin Description Table

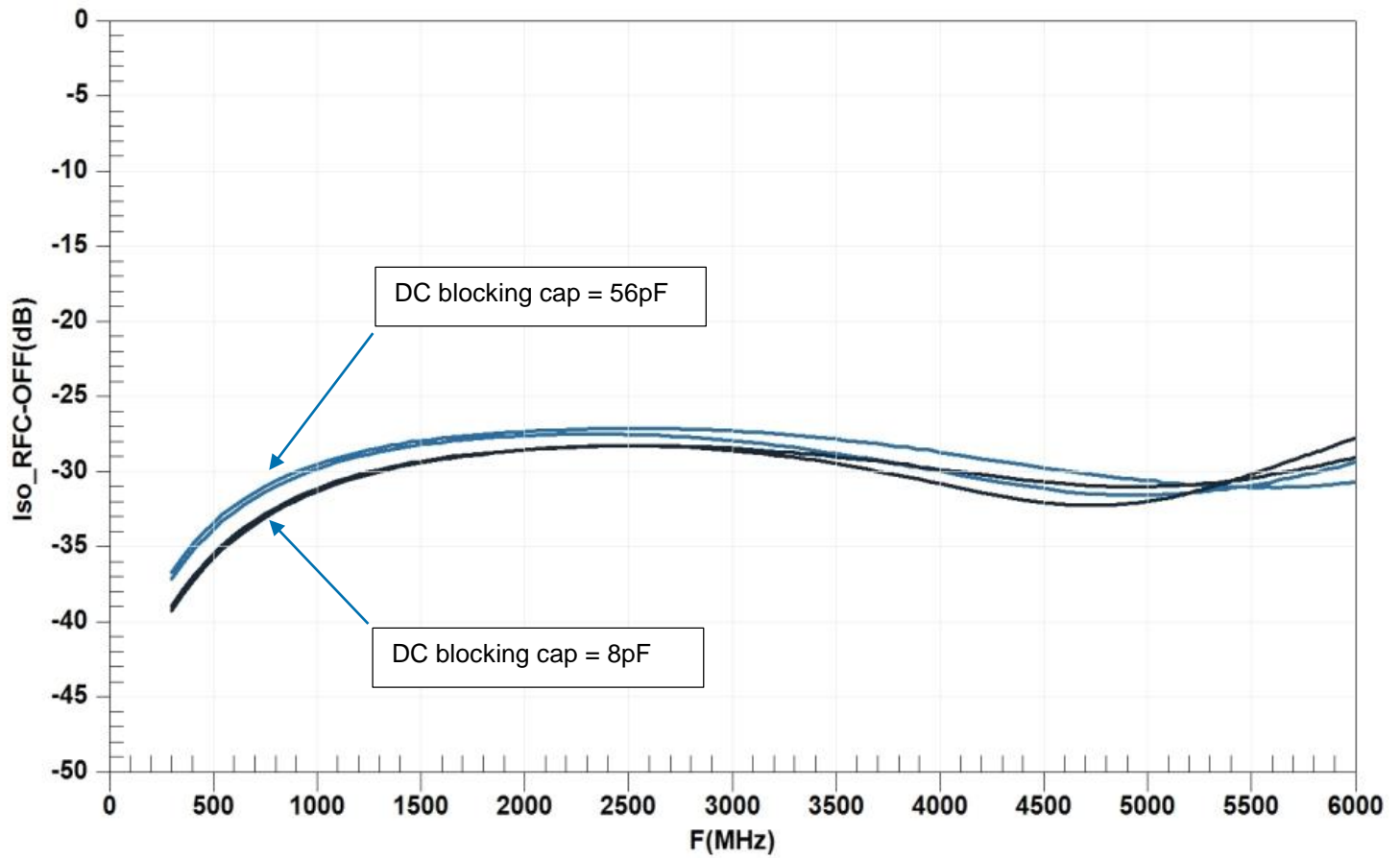
| Pin | Name | Description |
|-----|--------|--|
| 1 | RF1 | RF Port-1. External DC blocking required. |
| 2 | GND | Ground. |
| 3 | RF2 | RF Port-2. External DC blocking required. |
| 4 | Vcont2 | Control voltage to enable RF2 port (RF2-RFC). |
| 5 | RFC | Common RF Port. External DC blocking required. |
| 6 | Vcont1 | Control voltage to enable RF1 port (RF1-RFC). |

Typical Performance Plots (T=25C; Vcont High = 3V; Vcont Low = 0V; unless noted otherwise)

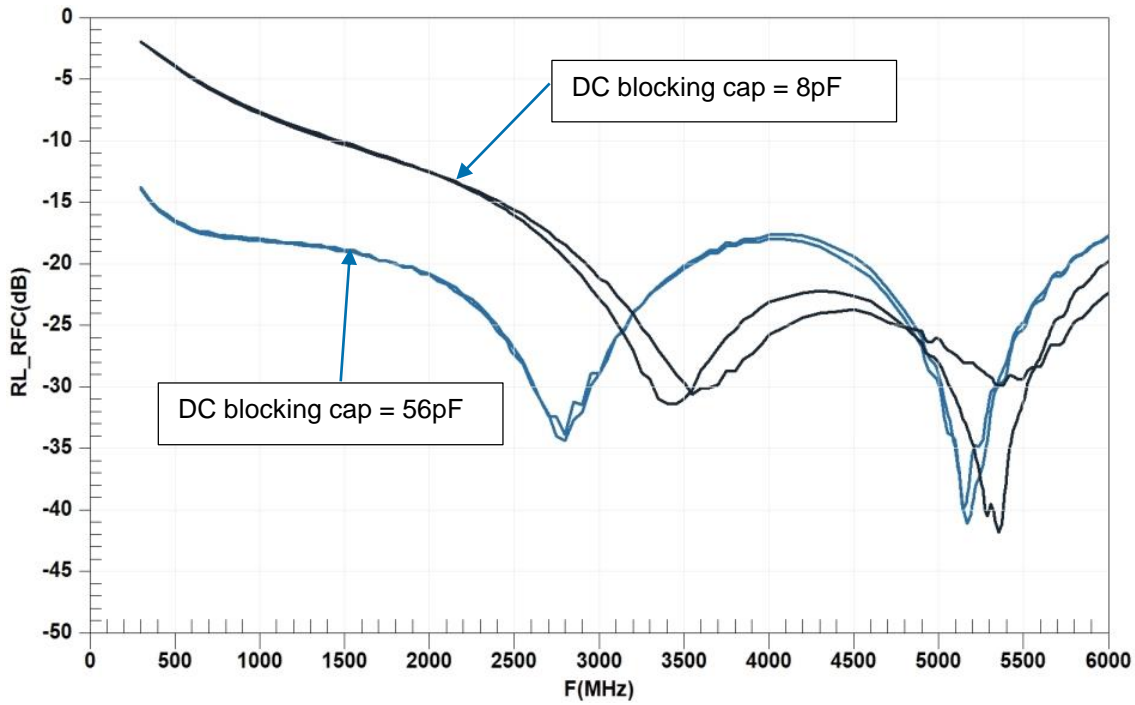
Insertion Loss vs. Frequency: RFC-RF1/RF2



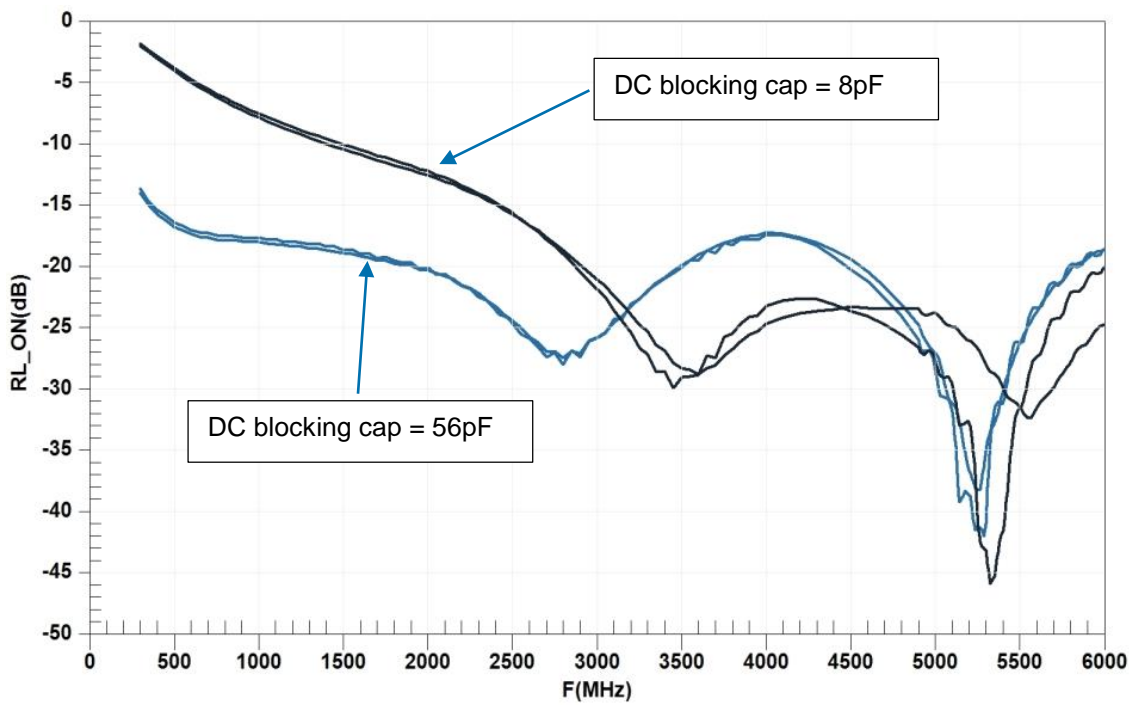
Isolation vs. Frequency: RFC-RF1/RF2



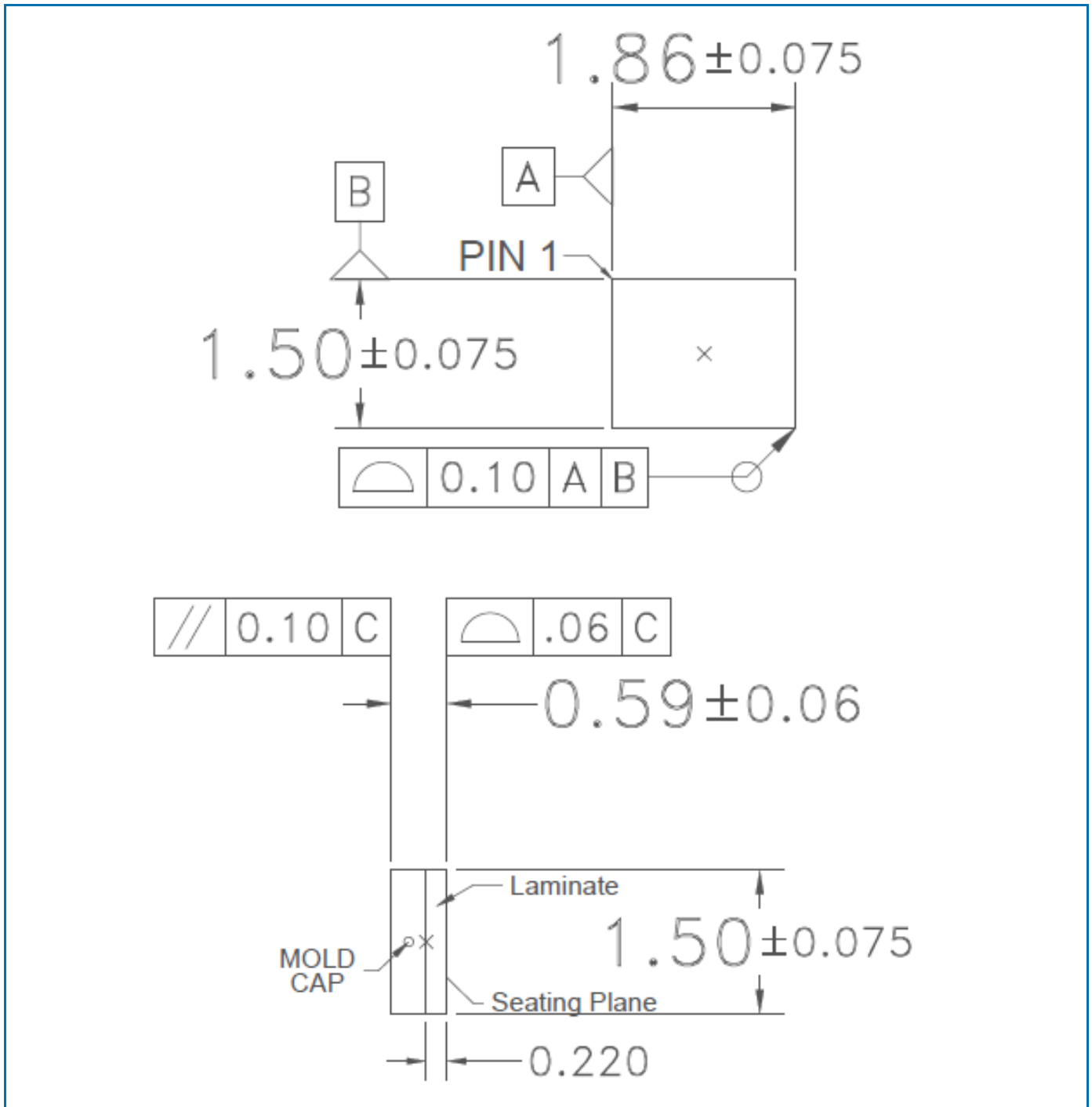
RFC return Loss vs. Frequency



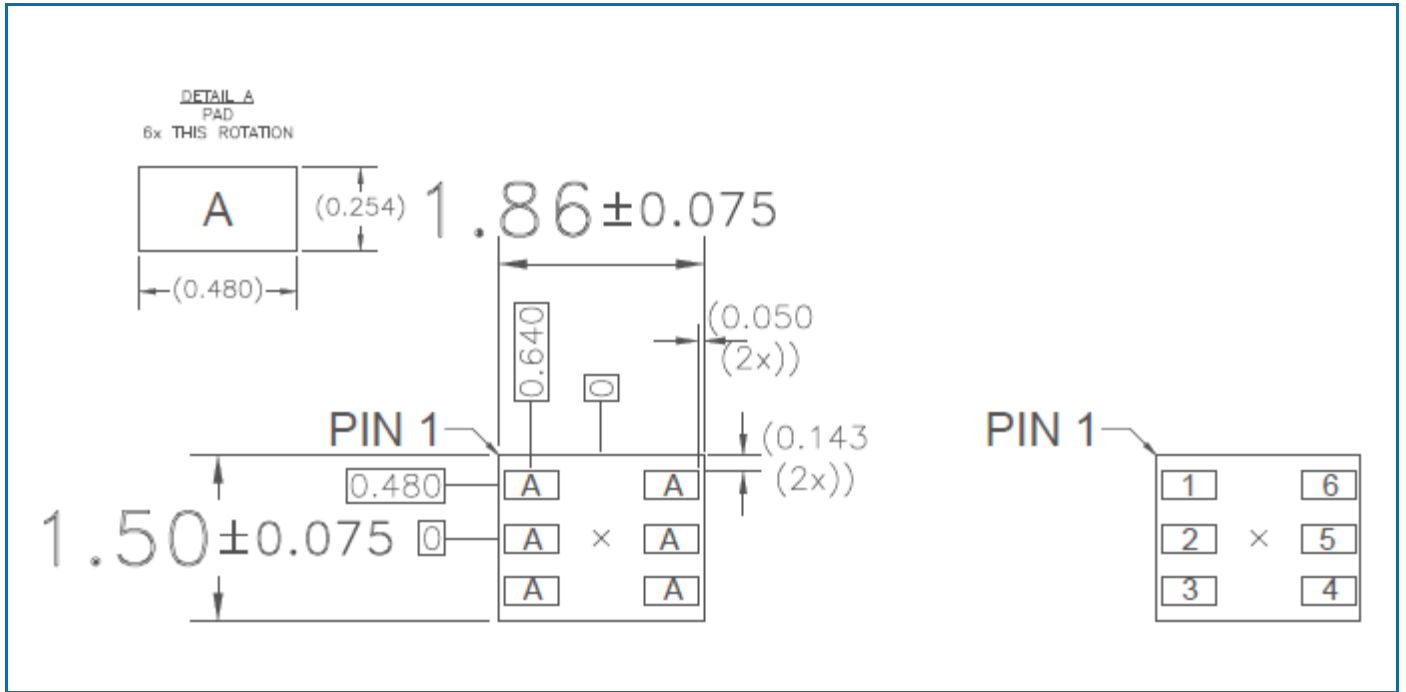
RF1/RF2 return Loss vs. Frequency



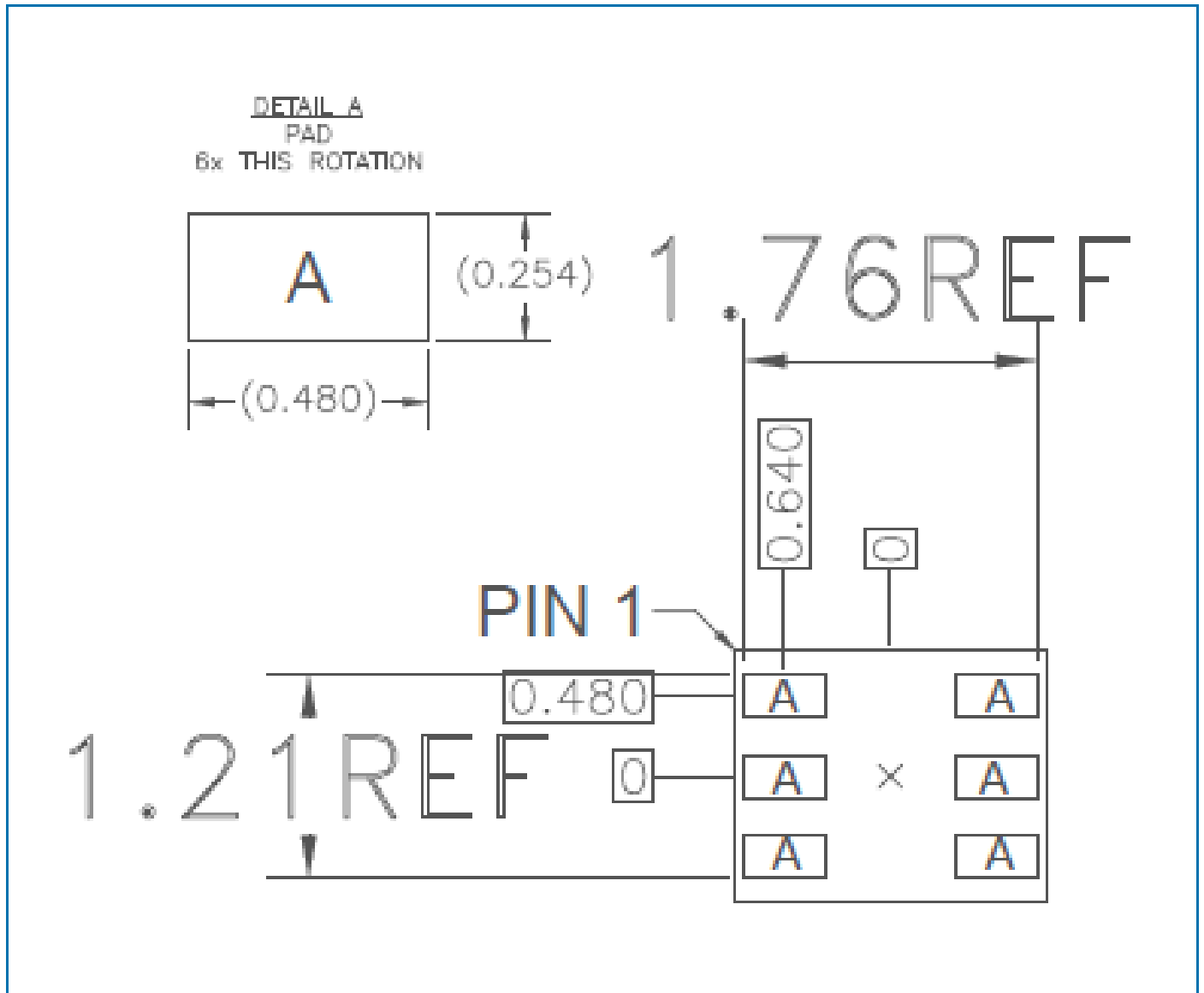
Package Outline Drawing (dimensions in mm)



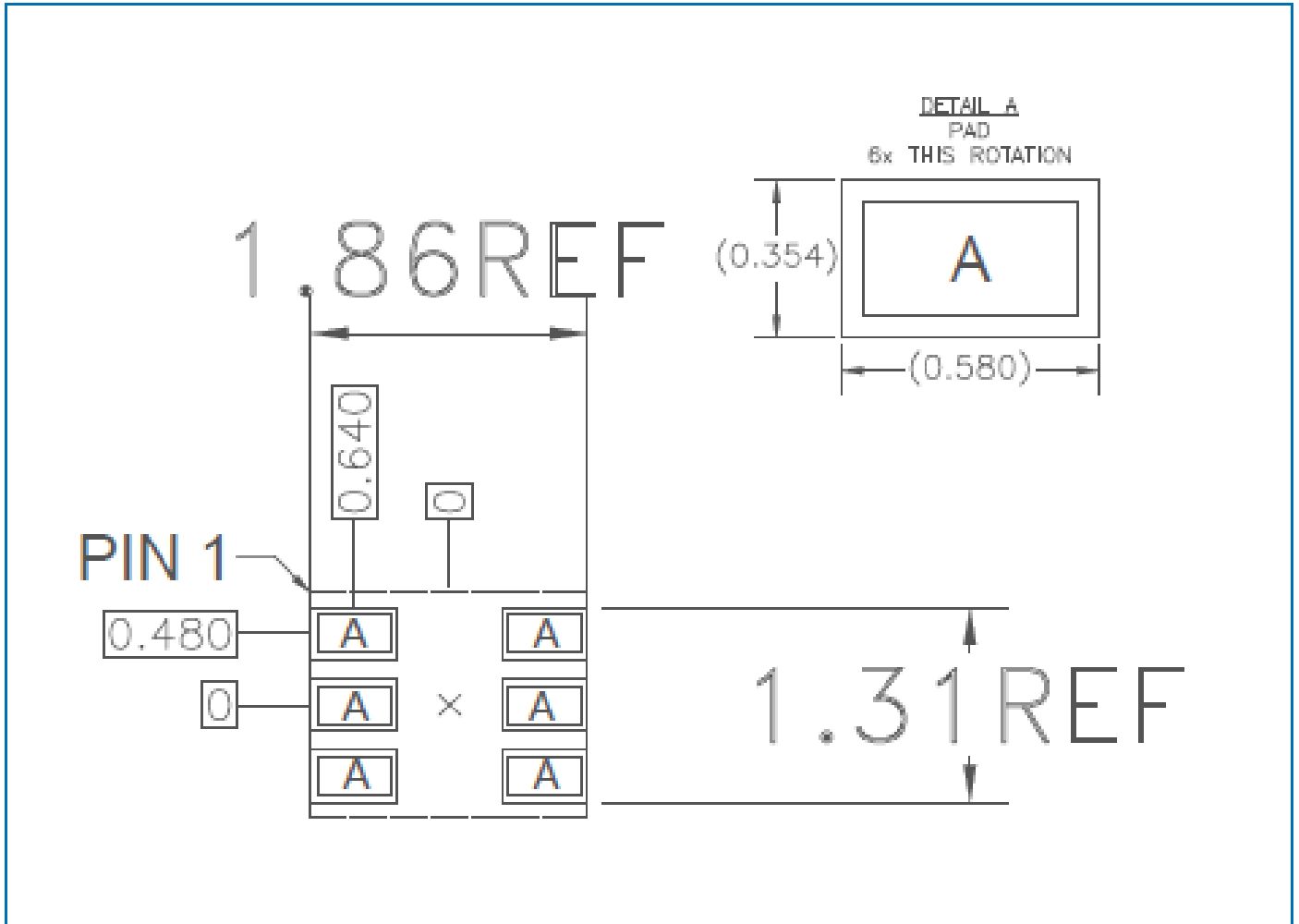
Package Outline Drawing ...continue (dimensions in mm)



Recommended Land Pattern (dimensions in mm)



Recommended Solder Mask Pattern (dimensions in mm)



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- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
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- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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