

RFS Series

1 – 8000MHz 4W SPDT RF Switch

Features

- Frequency Range: 1 - 8000MHz
- Insertion Loss: 2.5dB
- Isolation: 72dB
- Maximum Input P_{in}: +36dBm
- Switching Time: 1μs
- DC Power: 5V/<1mA
- SMA Connector

Description

RFS-4 is a 4W Single Pole Double Throw (SPDT) RF Switch operates in frequency range from 1 to 8000MHz.

Picture



Electrical Specifications @ +25 °C, 50 Ω System, DC Supply = +5V

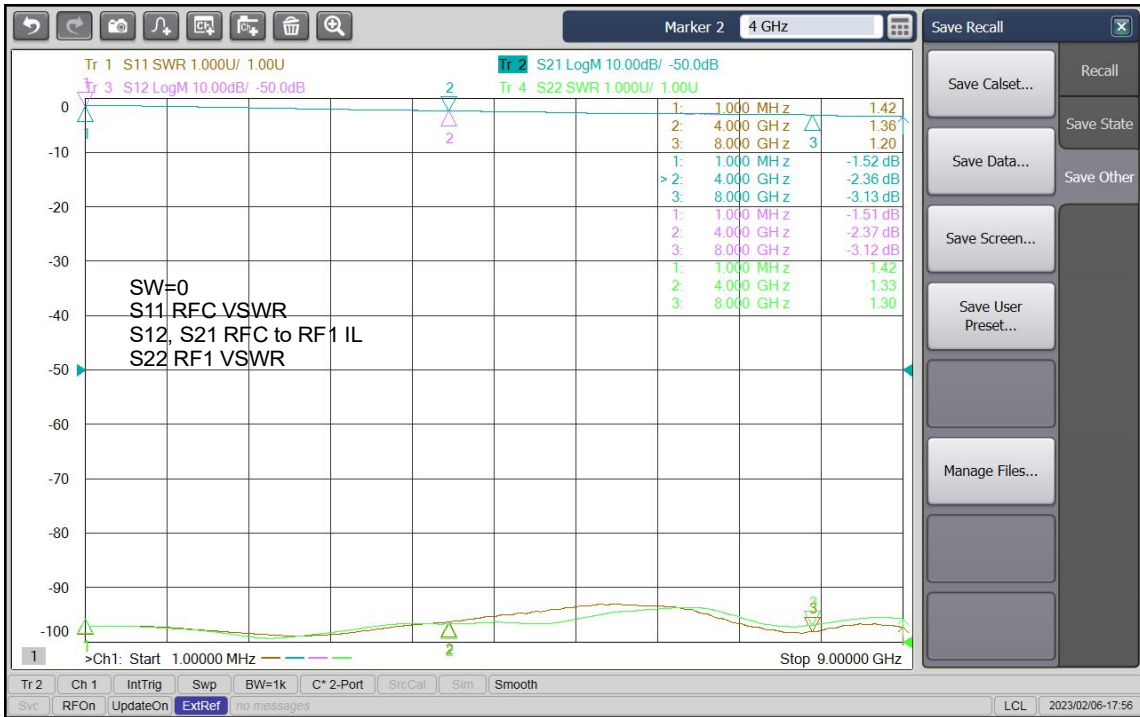
| Parameter | Unit | Minimum | Typical | Maximum |
|--|---------|-----------------------------------|---------|---------|
| Frequency Range | MHz | 1 | | 8000 |
| Insertion Loss (RFC to RF1, RF2) | 1MHz | | 1.5 | 1.8 |
| | 4000MHz | | 2.5 | 2.8 |
| | 8000MHz | | 3.0 | 3.5 |
| Isolation (RFC to RF1, RF2) | 1MHz | 105 | 110 | |
| | 4000MHz | 67 | 72 | |
| | 8000MHz | 52 | 57 | |
| Isolation (RF1 to RF2) | 1MHz | 105 | 110 | |
| | 4000MHz | 67 | 72 | |
| | 8000MHz | 57 | 62 | |
| VSWR (1 – 8000MHz) | | | 1.5:1 | 2.2:1 |
| Maximum Input P _{in} * (50-8000MHz) | dBm | +36 | | |
| Switching Time | μs | | 1 | 2 |
| Control Voltage V _{sw} (TTL/HCMOS) | V | SW=Low (0-0.6V), SW=High (1.2-5V) | | |
| DC Power Supply | V | 4.5 | 5 | 15 |
| Supply Current | mA | | | 1 |

* P_{in} Power De-rating from 1-50MHz.

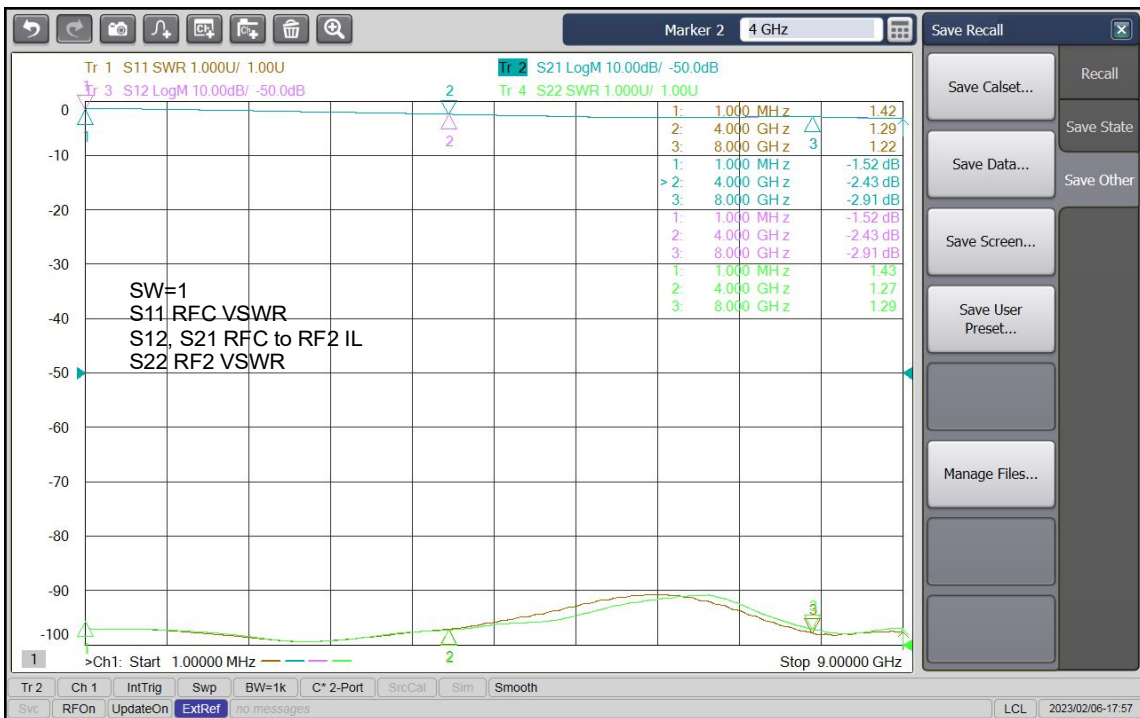
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Low Loss Path RFC-RF1, SW=0



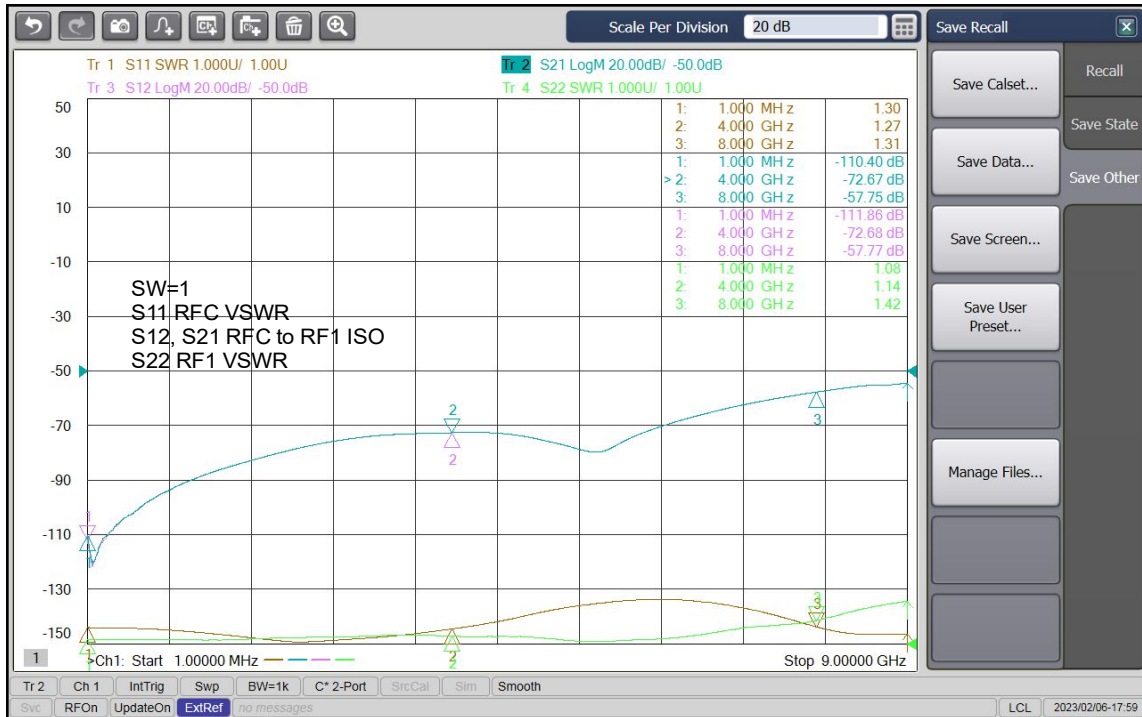
Low Loss Path RFC-RF2, SW=1



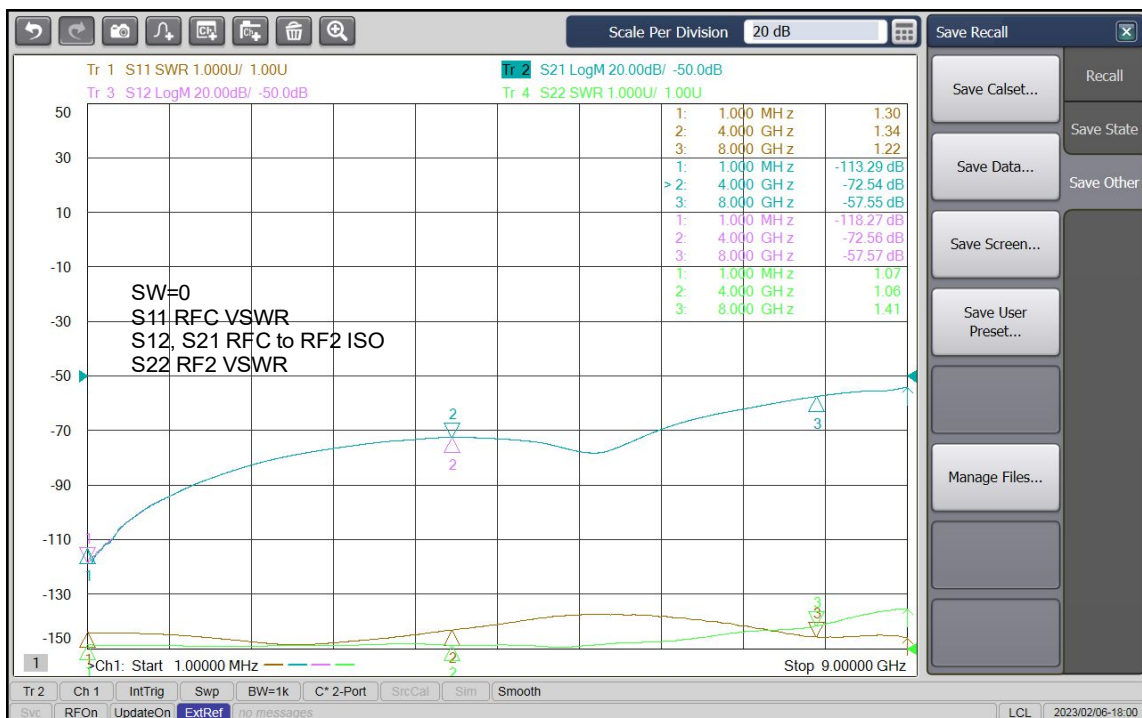
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Isolation Path RFC-RF1, SW=1



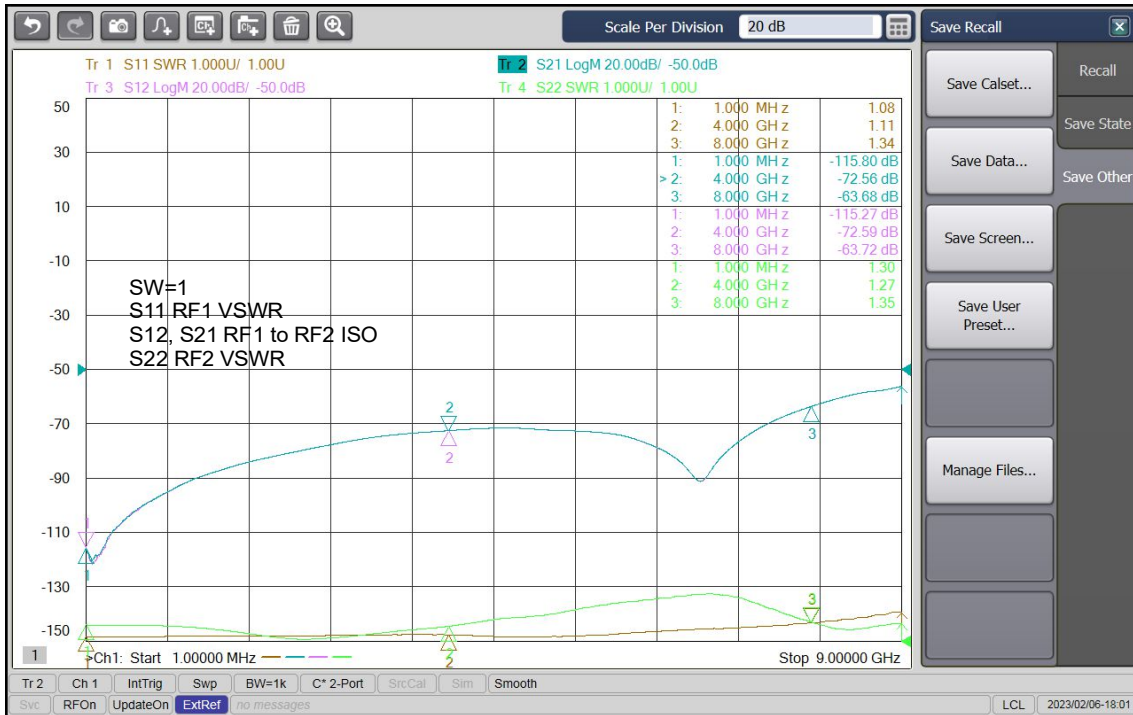
Isolation Path RFC-RF2, SW=0



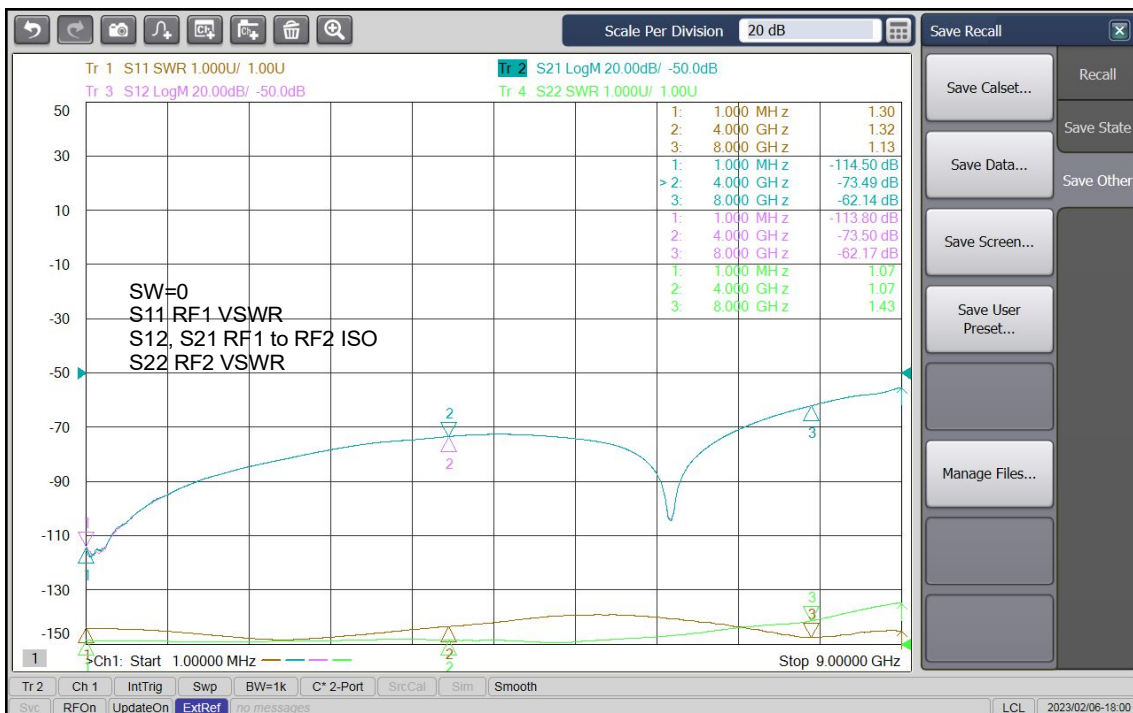
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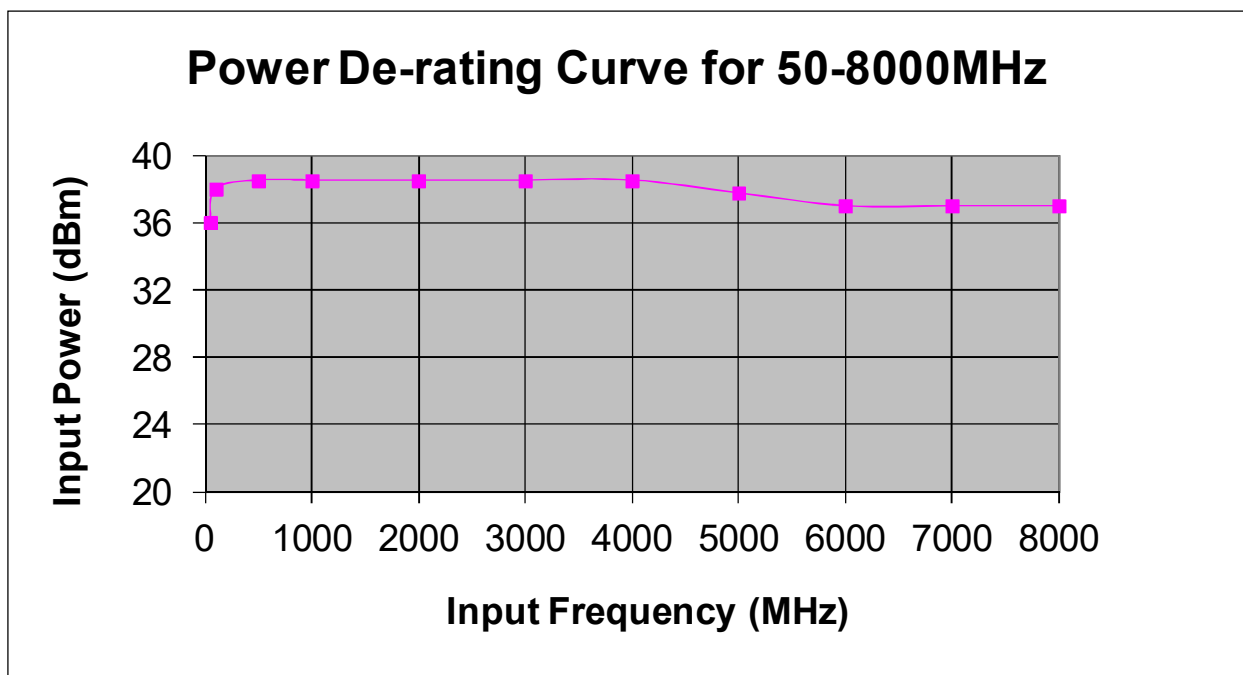
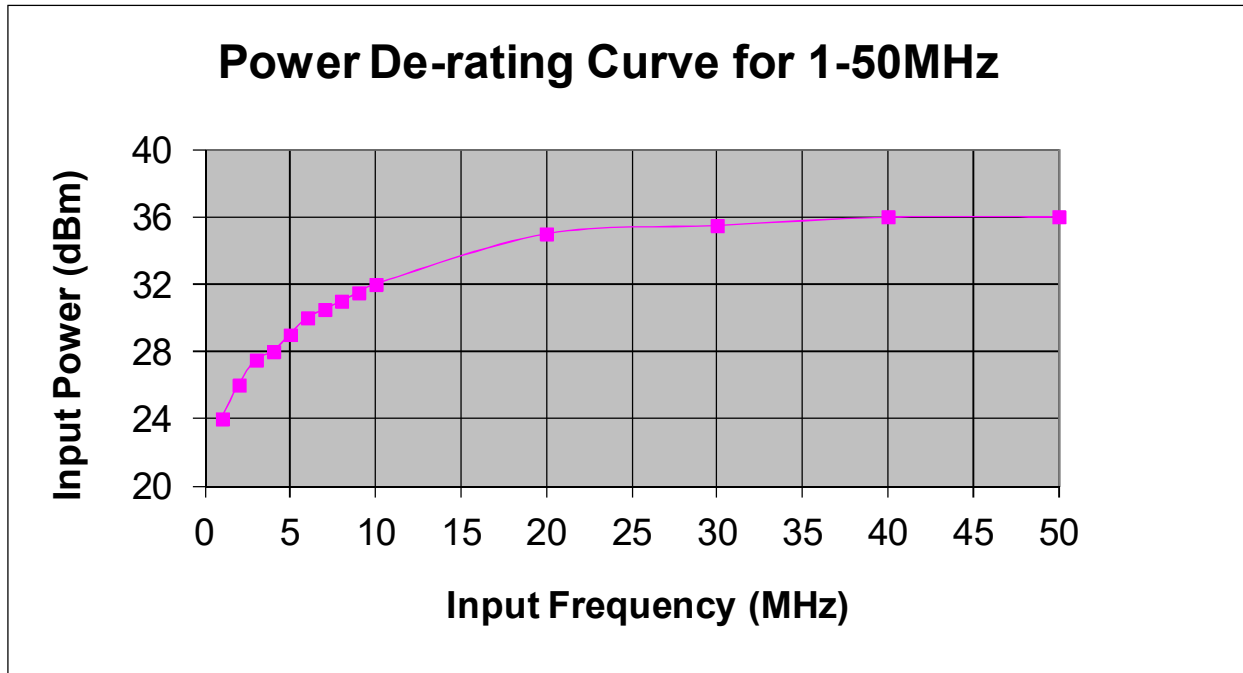
Isolation Path RF1-RF2, SW=1



Isolation Path RF1-RF2, SW=0



Typical Performance at 25°C



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Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|-----------------------|-------------------|
| Supply Voltage | +16V |
| RF Input Power | +38dBm |
| Operating Temperature | -40 °C to +85 °C |
| Storage Temperature | -55 °C to +125 °C |

Truth Table

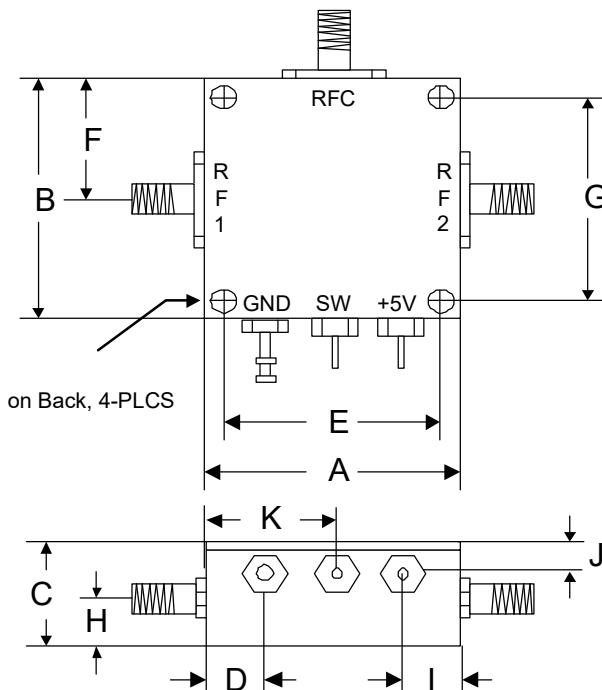
| Control Input V _{sw} | Signal Path State |
|-------------------------------|-------------------|
| SW=0, Logic Low | RFC to RF1 |
| SW=1, Logic High | RFC to RF2 |

SW Port Internal Pull-Down Resistor 10KΩ

ESD Sensitive Material



Outline



| | A | B | C | D | E | F | G | H | I | J | K |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Inch | 1.250 | 1.250 | 0.563 | 0.325 | 1.000 | 0.625 | 1.000 | 0.250 | 0.325 | 0.187 | 0.625 |
| mm | 31.75 | 31.75 | 14.29 | 8.26 | 25.40 | 15.88 | 25.40 | 6.35 | 8.26 | 4.75 | 15.88 |