

## RFS Series

## 0.3 – 4000MHz 4W SPDT RF Switch

### Features

- Frequency Range: 0.3 - 4000MHz
- Insertion Loss: 1.8dB
- Isolation: 80dB
- Maximum Input  $P_{in}$ : +36dBm
- Switching Time: 6 $\mu$ s
- DC Power: 5V/<1mA
- SMA Connector

### Picture



### Description

RFS-3 is a 4W Single Pole Double Throw (SPDT) RF Switch operates in frequency range from 0.3 to 4000MHz.

### Electrical Specifications @ +25 °C, 50 $\Omega$ System, DC Supply = +5V

| Parameter                             | Unit                         | Minimum                           | Typical           | Maximum           |
|---------------------------------------|------------------------------|-----------------------------------|-------------------|-------------------|
| Frequency Range                       | MHz                          | 0.3                               |                   | 4000              |
| Insertion Loss (RFC to RF1, RF2)      | 0.3MHz<br>2000MHz<br>4000MHz | dB<br>dB<br>dB                    | 1.3<br>1.8<br>2.5 | 1.5<br>2.0<br>2.8 |
| Isolation (RFC to RF1, RF2)           | 0.3MHz<br>2000MHz<br>4000MHz | dB<br>dB<br>dB                    | 100<br>75<br>67   | 105<br>80<br>72   |
| Isolation (RF1 to RF2)                | 0.3MHz<br>2000MHz<br>4000MHz | dB<br>dB<br>dB                    | 100<br>75<br>67   | 105<br>80<br>72   |
| VSWR (0.3 – 4000MHz)                  |                              |                                   | 1.5:1             | 2.0:1             |
| Maximum Input $P_{in}^*$ (10-4000MHz) | dBm                          | +36                               |                   |                   |
| Switching Time                        | $\mu$ s                      |                                   | 6                 | 10                |
| 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 0.3-10MHz.

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### Low Loss Path RFC-RF1, SW=0



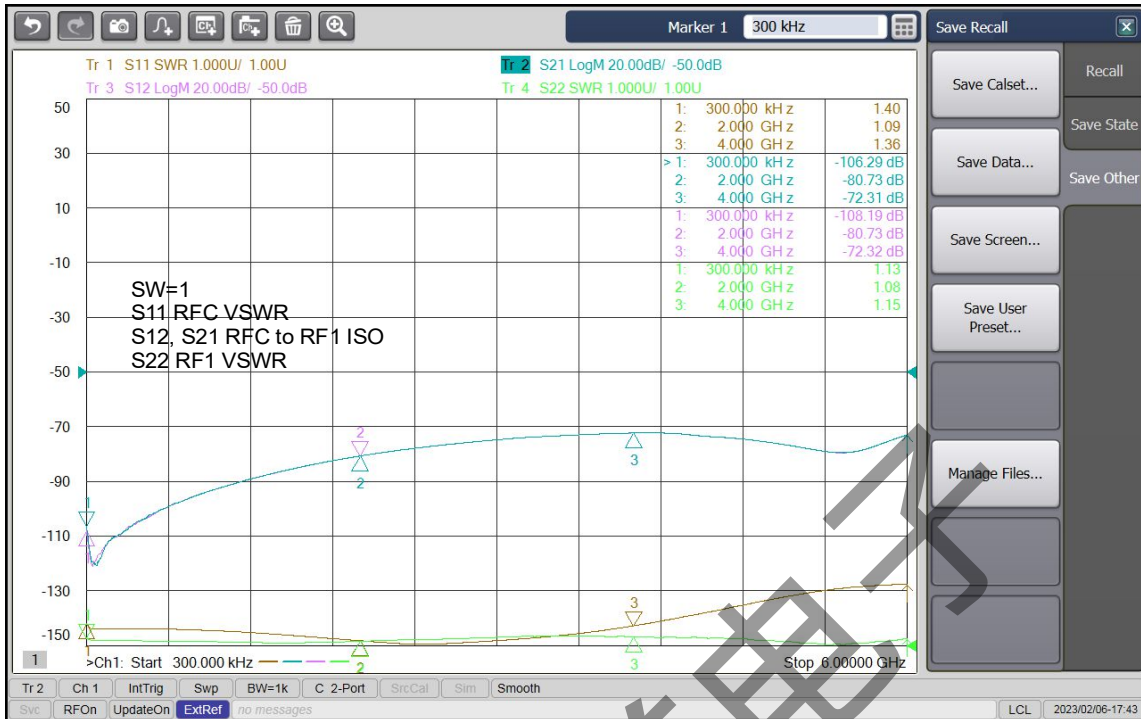
### Low Loss Path RFC-RF2, SW=1



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### Isolation Path RFC-RF1, SW=1



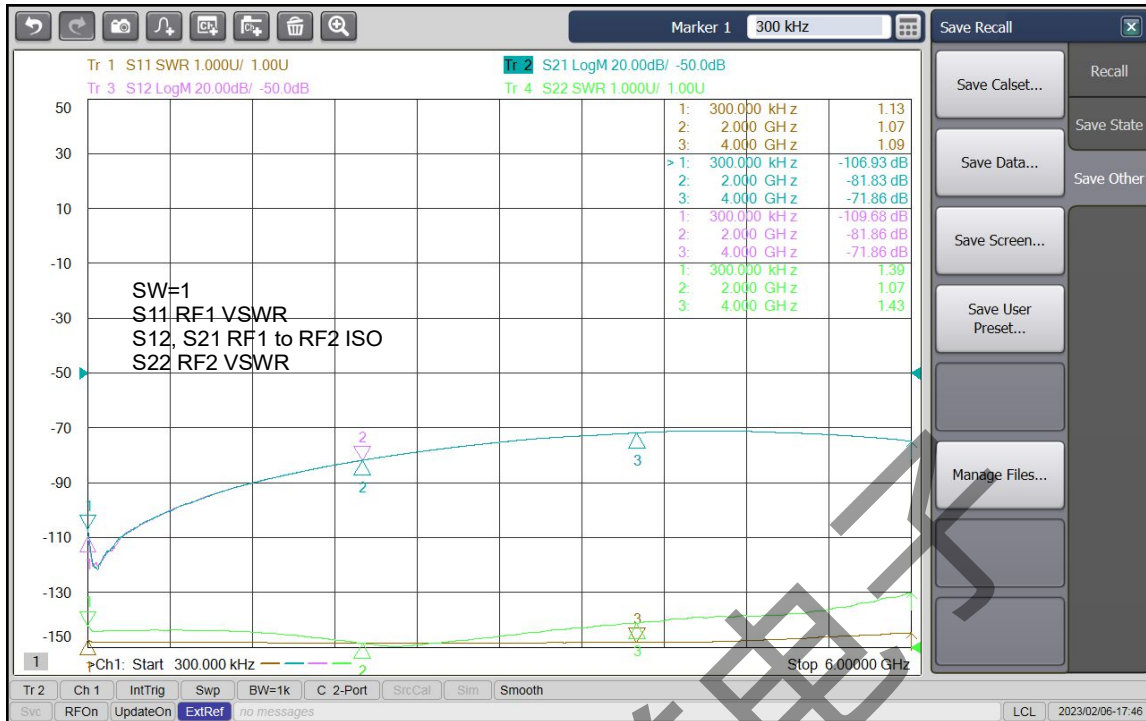
### Isolation Path RFC-RF2, SW=0



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### Isolation Path RF1-RF2, SW=1



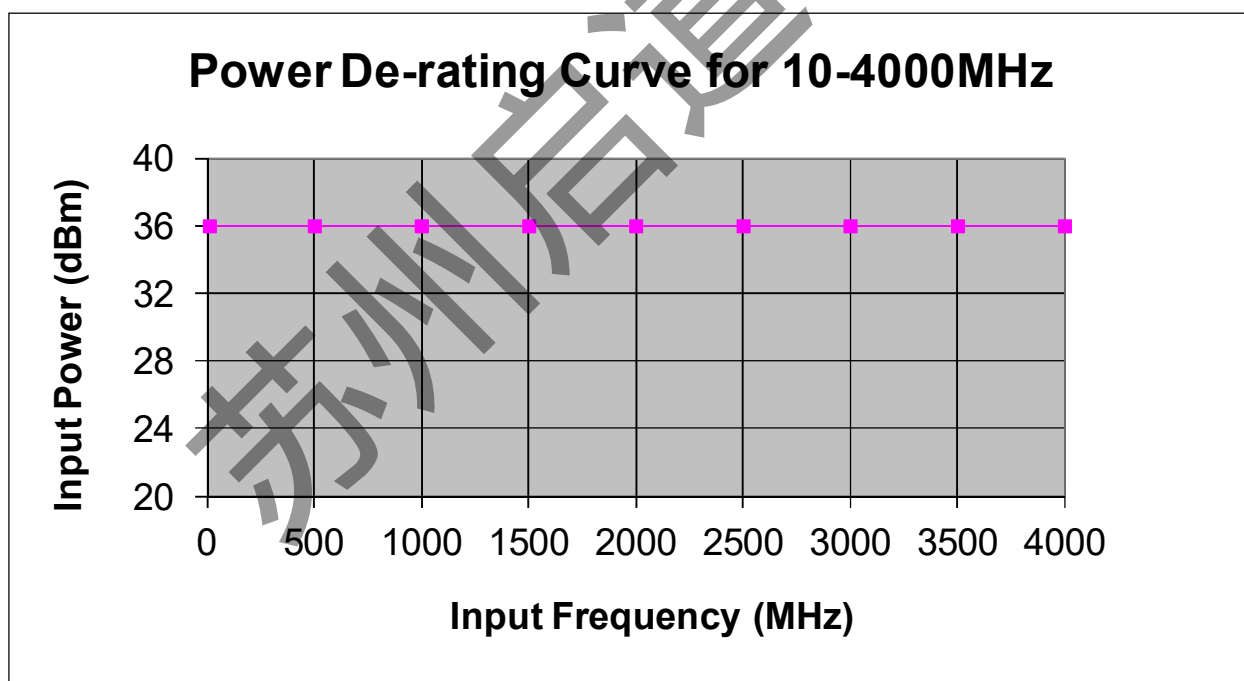
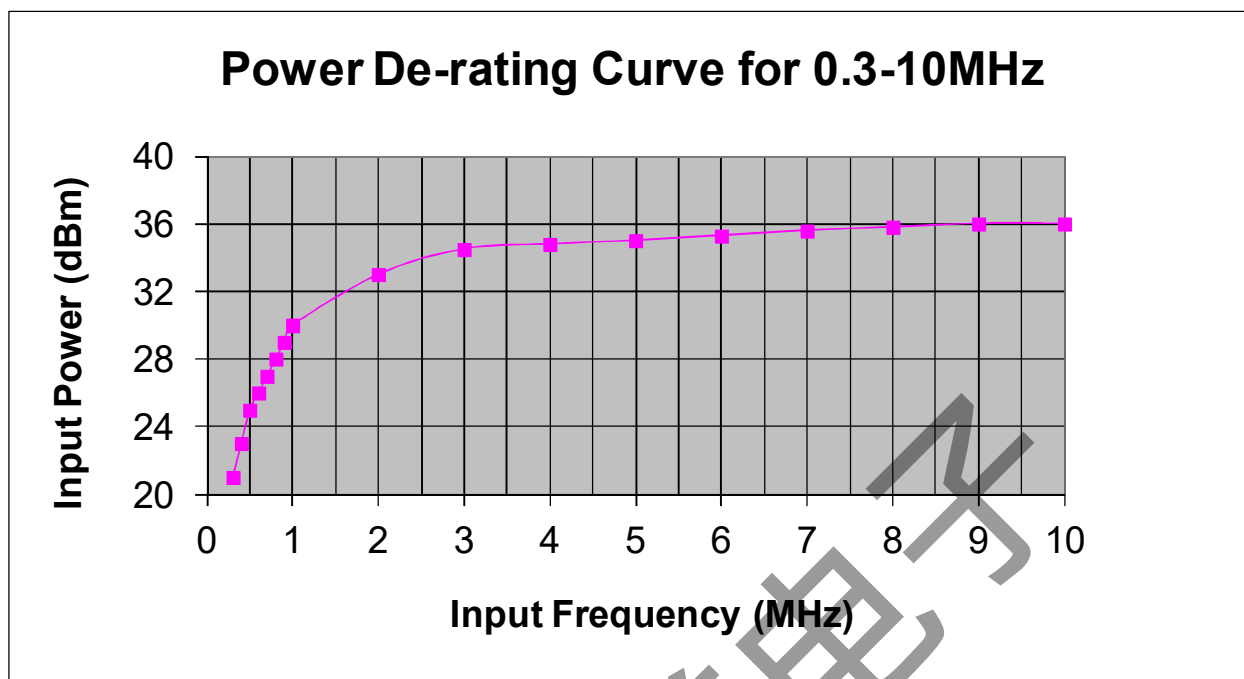
### Isolation Path RF1-RF2, SW=0



**RFS Series**

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**Typical Performance at 25°C**



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### Absolute Maximum Ratings

| Parameter             | Absolute Maximum  |
|-----------------------|-------------------|
| Supply Voltage        | +16V              |
| RF Input Power        | +37dBm            |
| Operating Temperature | -40 °C to +85 °C  |
| Storage Temperature   | -55 °C to +125 °C |

### Truth Table

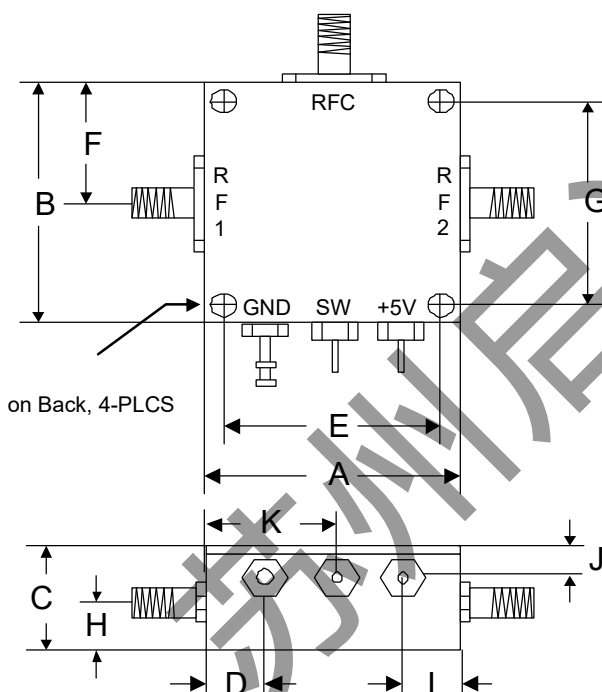
| Control Input V <sub>sw</sub> | Signal Path State |
|-------------------------------|-------------------|
| SW=0, Logic Low               | RFC to RF1        |
| SW=1, Logic High              | RFC to RF2        |

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 |