V1.0.0

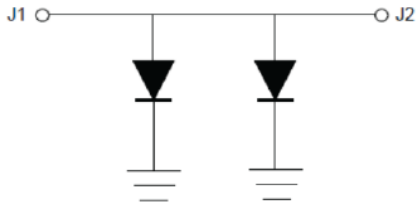
*GaAs PIN Reflective Single-Pole Single-Throw Switch 0.1-40GHz*



## Features

- Frequency: 0.1-40GHz
- Insertion Loss: 0.4dB typ.
- Isolation: 40dB typ.
- P-1dB: 32dBm
- Input/Output: 50Ω
- Die Size: 1.4x 0.58 x 0.1 mm

## Functional Block Diagram




## Typical Applications

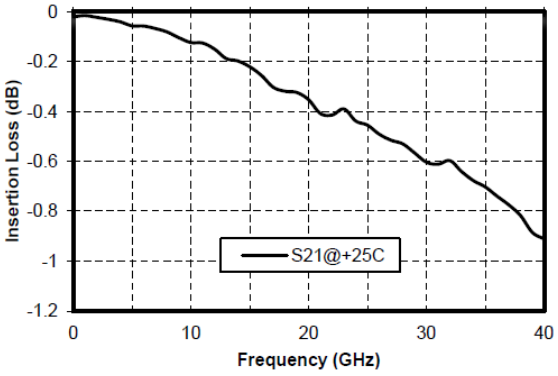
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

## Electrical Specifications

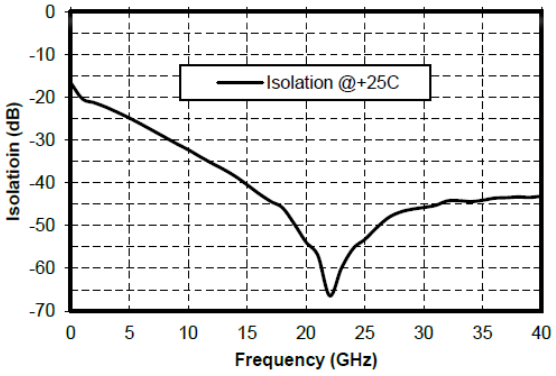
**TA = +25ºC**

| Parameters | Min. | Typ. | Max. | Units |
|---|---|---|---|---|
| **Frequency Range** | | **0.1-18** | | **GHz** |
| **Insertion Loss** | **-** | **0.15** | **0.3** | **dB** |
| **Isolation** | **16** | **31** | **-** | **dB** |
| **Input Return Loss** | **24** | **37** | **-** | **dB** |
| **Output Return Loss** | **24** | **36** | **-** | **dB** |
| | | | | |
| **Frequency Range** | | **18-40** | | **GHz** |
| **Insertion Loss** | **-** | **0.6** | **0.9** | **dB** |
| **Isolation** | **43** | **48** | **-** | **dB** |
| **Input Return Loss** | **15** | **18** | **-** | **dB** |
| **Output Return Loss** | **15** | **18** | **-** | **dB** |
| | | | | |
| **P-1dB** | **-** | **32** | **-** | **dBm** |
| **Switching Speed** | **-** | **10** | **-** | **ns** |

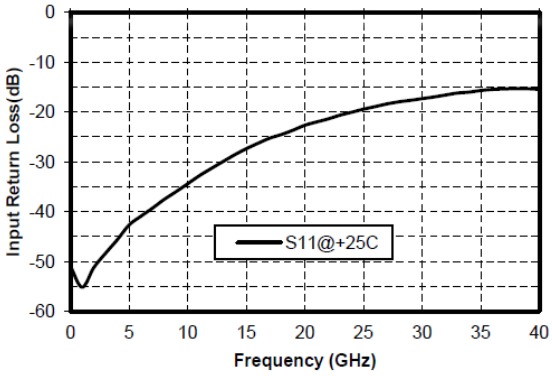
### Insertion Loss vs. Operating Frequency



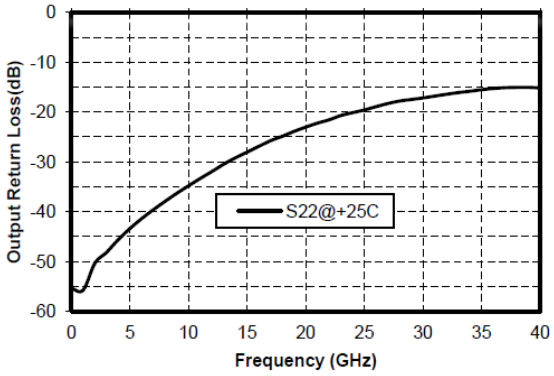

### Isolation vs. Operating Frerquency




### Input Return Loss vs. Operating Frequency




### Output Return Loss vs. Operating Frequency




## Typical Driver Connections

| CONTROL LEVEL (DC CURRENT) | RF OUTPUT STATE |
|---|---|
| IN(J1) or OUT(J2) | IN(J1)-OUT(J2) |
| -5V | Low Loss |
| +10mA | Isolation |

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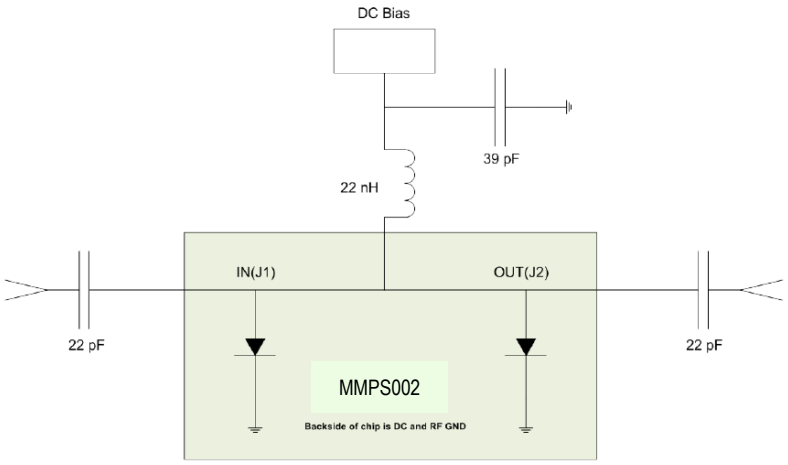
## Outline Drawing

All Dimensions in μm


## Pad Description

| Pad | Function | Description |
|---|---|---|
| 1 | J1 (IN) | RF signal port, DC blocking capacitor needed. |
| 2 | J2 (OUT) | RF signal port, DC blocking capacitor needed. |
| Die bottom | GND | Die bottom must be connected to RF/DC ground. |

## Assembly Drawing




**Notes:**

1. Die thickness: 100um
2. Typical bond pad is 100*100 μm²
3. Bond pad metalization: Gold
4. Backside metalization: Gold
5. Backside of the die (GND)
6. No connection required for unlabeled bond pads

**Maximum Ratings:**

1. Maximum input voltage: 25V
2. Maximum input power: +36dBm CW
3. Operating temperature: -55℃ to +85℃
4. Storage temperature: -65℃ to +150℃