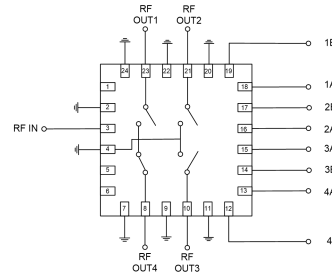


GaAs MMIC absorptive SP4T switch chip, DC- 20G Hz

Performance characteristics

- Frequency range: DC - 20 GHz
- Insertion loss : 3.0 dB
- Isolation: 54 dB
- Wave ratio : 1.5
- Control voltage: 0/-5V
- 50Ohm input/output
- QFN4X4mm

Block Diagram



Product Introduction

GSW-00 204 DT-PD-CQ4 is a GaAs MMIC single-pole four -throw switch chip, with 50Ω matching at the input / output end , a frequency range covering DC ~ 20 GHz , and a chip using 0V/-5V positive level control, a switching speed of 3 0ns , and a P-1dB input power of +2 3 dBm . The switch uses a 4X4mm surface-mount leadless ceramic tube shell to achieve airtight packaging. The surface of the pin pad is gold-plated and is suitable for reflow soldering installation.

Use restriction parameter ¹

| | |
|-----------------------|--------------|
| Control voltage range | -8V ~ +0.5V |
| Maximum input power | +30dBm |
| Operating temperature | -55 ~ +85°C |
| Storage temperature | -65 ~ +150°C |

【1】 Exceeding any of these maximum limits may cause permanent damage.

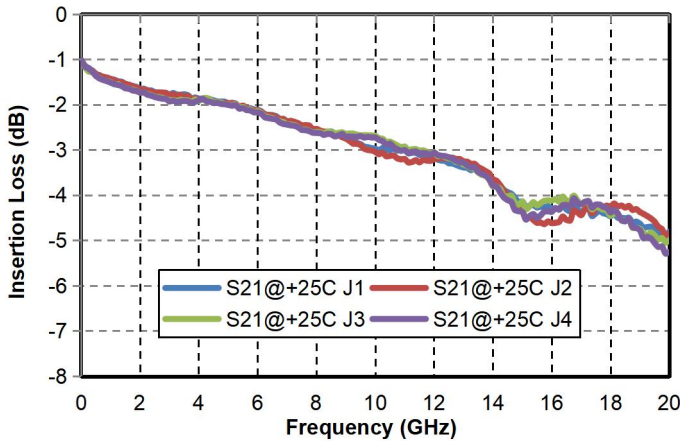
Electrical performance parameters (TA = +25°C, VC = 0/-5V)

| index | Minimum | Typical Value | Maximum | Unit |
|--------------------|---------|---------------|---------|------|
| Frequency Range | DC-20 | | | G Hz |
| Insertion loss | - | 3.0 | - | dB |
| Isolation | - | 54 | - | dB |
| Input return loss | - | 14 | - | dB |
| Output return loss | - | 17 | - | dB |
| P-1dB | - | 23 | - | dBm |
| Switching speed | - | 30 | - | ns |

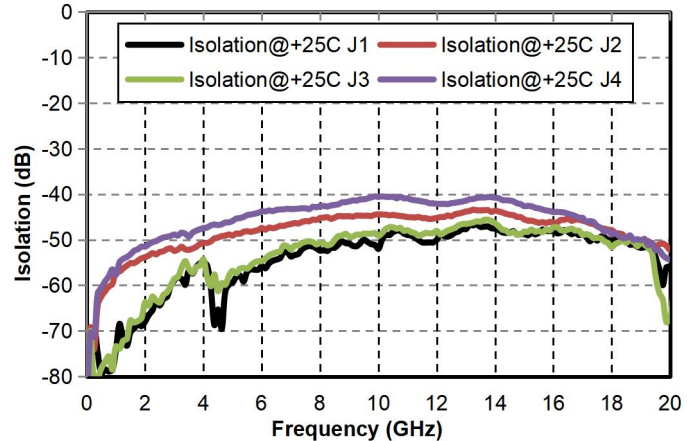
GaAs MMIC Absorptive SP4T Switch Chip, DC- 20 GHz

Main index test curve

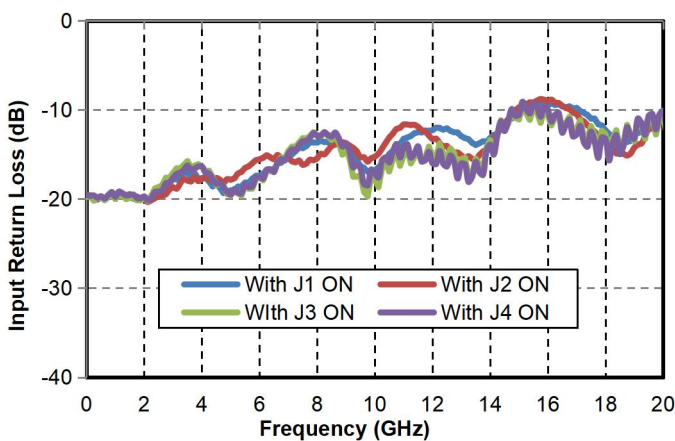
Insertion Loss vs. Operating Frequency



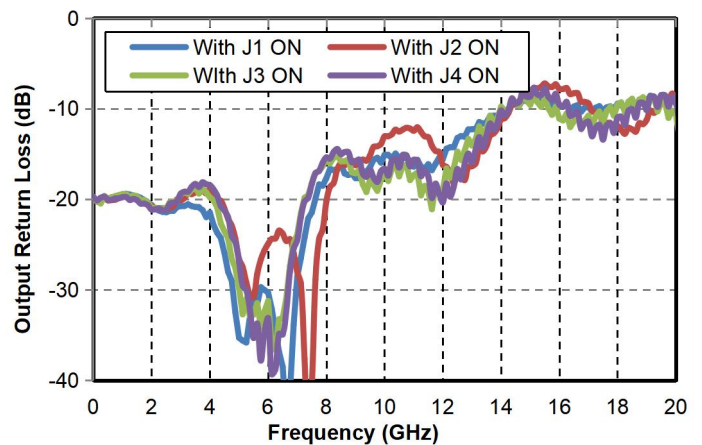
Isolation vs. Operating Frequency



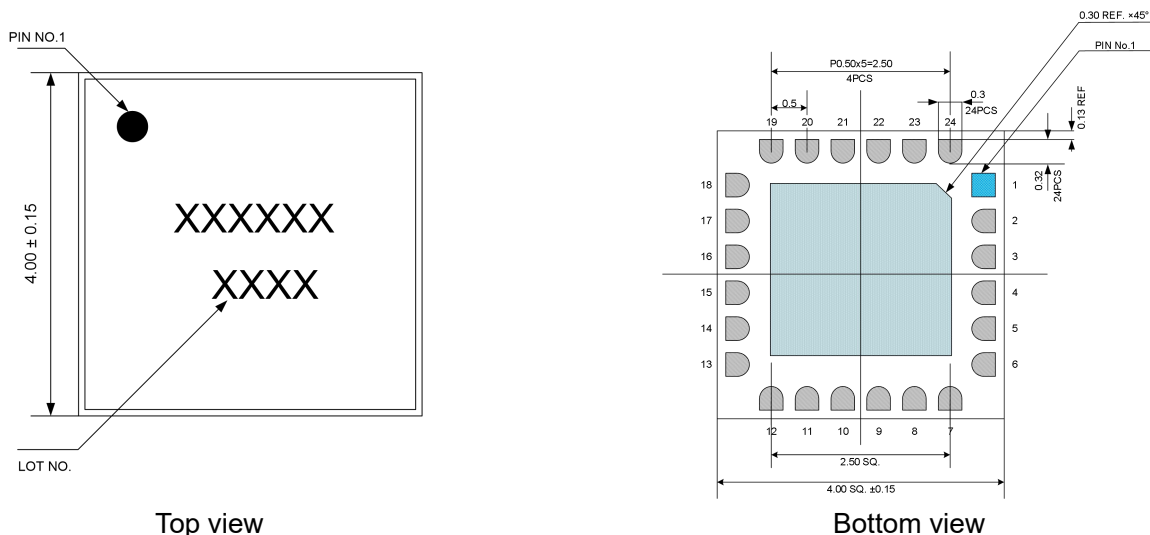
Input Return Loss vs. Operating Frequency



Output Return Loss vs. Operating Frequency

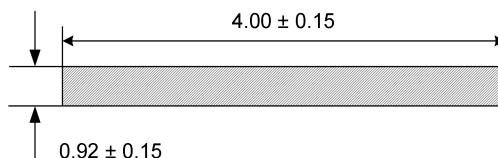


Appearance structure



GaAs MMIC Absorptive SP4T Switch Chip, DC- 20 GHz

Appearance structure



Side View

The units in the figures are all millimeters , and the tolerance is ± 0.15 mm.

Truth table :

| 1A | 1B | 2A | 2B | 3A | 3B | 4A | 4B | RF1 | RF2 | RF 3 | RF 4 |
|-----|-----|-----|-----|-----|-----|-----|-----|------------|--------------|--------------|------------|
| 0 V | -5V | -5V | 0V | -5V | 0V | -5V | 0V | Continuity | closure | closure | closure |
| -5V | 0V | 0 V | -5V | -5V | 0V | -5V | 0V | closure | Conductivity | closure | closure |
| -5V | 0V | -5V | 0V | 0 V | -5V | -5V | 0V | closure | closure | Conductivity | closure |
| -5V | 0V | -5V | 0V | -5V | 0V | 0 V | -5V | closure | closure | closure | Continuity |

Pin Definition

| Pin number | Function Symbol | Functional Description |
|-------------------------------------|-----------------|--|
| 3 | RF IN | Signal input terminal , external DC blocking capacitor is required |
| 8, 10, 21, 23 | RF OUT4/3/2/1 | Signal output terminal, external DC blocking capacitor is required |
| 2, 4, 7 , 9, 11, 20, 22 , 24 | GND | The pins need to be well grounded to the RF and DC grounds |
| 12 , 13 , 14 , 15, 16, 17 , 18 , 19 | Voltage Control | On/off control |
| Chip bottom | GND | The bottom of the chip needs to be well grounded to RF and DC |
| other | NC | The pin is left floating and can be grounded |

Application Circuit

