Standard Circuit

GaAs MMIC Absorptive SPST Switch Chip, DC- 19 GHz

Performance characteristics

- Frequency range: DC-19GHz
- Insertion loss: 1.4dB
- Isolation degree: 45dB
- Open state standing wave ratio: 1.2
- 50Ohm input/output
- QFN4X4mm

Product Introduction

GSW-0019ST is a GaAs MMIC absorption single pole single throw switching chip with input/output 50 Ω matching, frequency range covering DC~19GHz, and powered by 0V/-5V. Switching speed of 10ns. This chip adopts a 3x3mm plastic surface mount packaging, and the surface of the pin solder pads is treated with a gold plating process, suitable for reflow soldering installation process.

| Use restriction parameters[1]	
Control voltage range	-8V～+0.5V
Maximum input power	+30dBm
Working temperature	-55 ~ +85°C
Storage temperature	-65 ~ +150°C

【1】 Exceeding any of the above maximum limits may result in permanent damage.

| Electrical performance parameters(T_A= +25°C)				
Index	Minimum value	Typical value	Maximum value	Unit
Frequency range	DC-19			GHz
Insertion loss	-	1.4	1.6	dB
Isolation degree	36	45	-	dB
Input return loss	-	16	-	dB
Output Return Loss	-	15	-	dB
P-1dB	-	23	-	dBm
Switching speed	-	10	-	ns

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## Main indicator testing curve

### Insertion loss vs. operating frequency
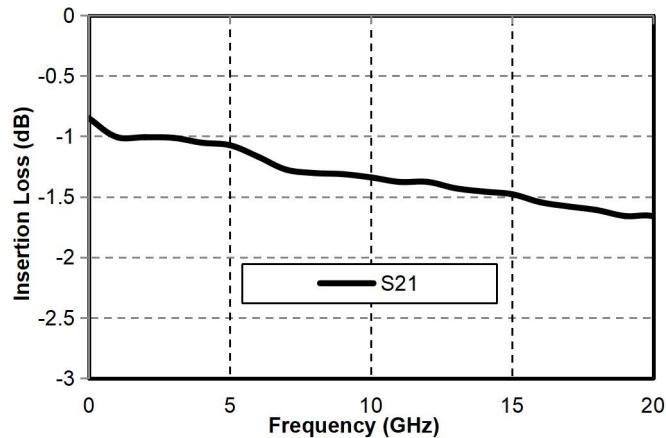

Isolation degree vs. operating frequency
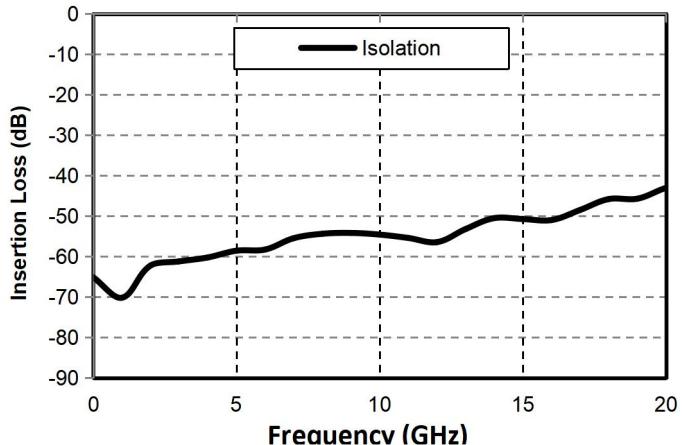
Input wave loss vs. operating frequency
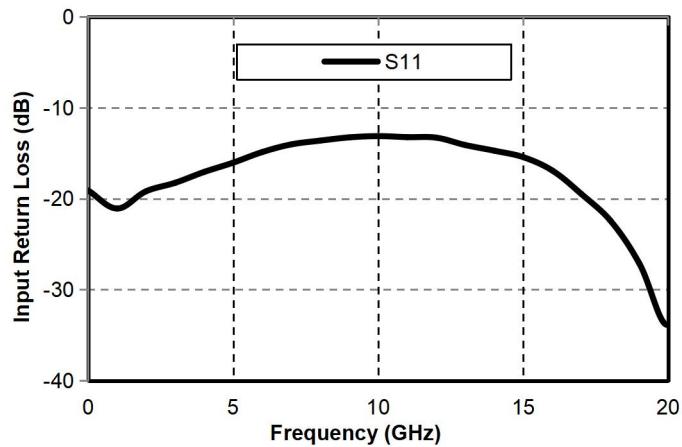
Output return loss vs. operating frequency

External structure

PIN1 DOT BY MARKING

3.000±0.050

3.000±0.050

16L TSLP (3x3mm)

1.650±0.050 Exp.DAP

0.250±0.050

0.400±0.050

PIN1 IDENTIFICATION CHAMFER 0.300 x 45°

1.650±0.050 Exp.DAP

0.500 Bsc

1.500 Ref.
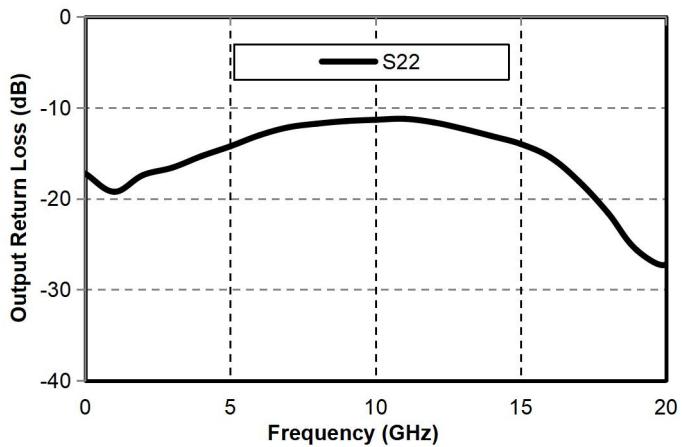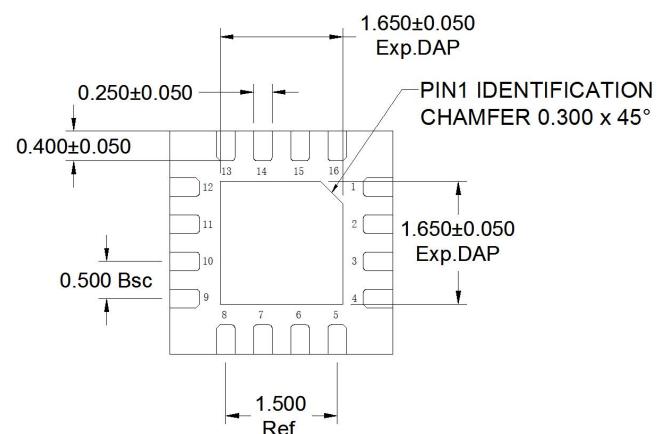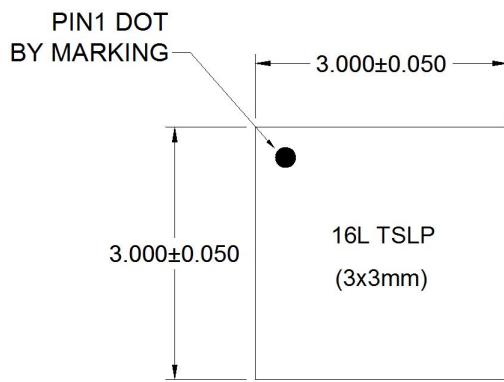
GaAs MMIC Absorbing single pole single throw switch chip,DC-19GHz

```
            ┌── 0.750±0.050 ──┐
                                        
0.000-0.050 ─┘          0.203
                         Ref.
```

Side view
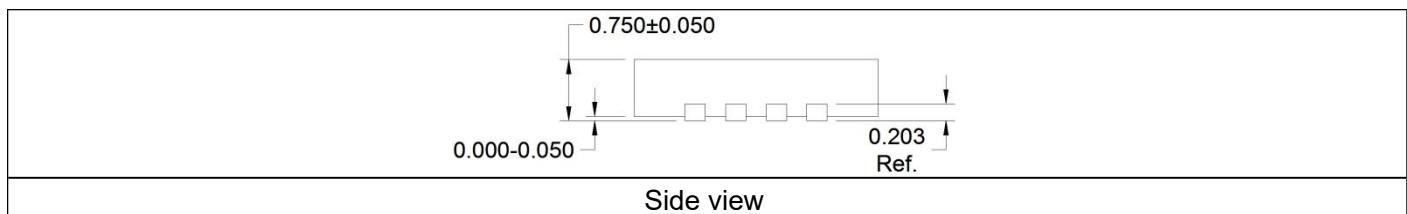
The units in the figure are all millimeters, with a tolerance of ± 0.05mm

Pin Definition

Bond point number	Functional symbols	Function Description
3	RFIN	RF signal input terminal requires external DC isolation capacitor
10	RFOUT	RF signal output terminal requires external DC isolation capacitor
2、4、9、11	VDD	The bottom of the chip needs to be well grounded with RF and DC
14、15	VR、VL	Conduction and shutdown control
other	NC	No welding required

True Table

VL	VR	state
0V	-5V	RF1-RF2 conduction
-5V	0V	RF1-RF2 shutdown

Application circuit