

GaAs MMIC Absorptive SPST Switch Chip, DC- 18 GHz

Performance characteristics

- Frequency range: DC-18GHz
- Insertion loss: 2.0dB
- Isolation degree: 63dB
- Open state standing wave ratio: 1.4
- Off state standing wave ratio: 1.4
- 50Ohm input/output
- QFN4X4mm

Product Introduction

GSW-0018AST-CQ4 is a GaAs MMIC absorption single pole single throw switching chip with input/output 50 Ω matching, frequency range covering DC~18GHz, and powered by 0V/-5V. Switching speed of 10ns. This switch adopts a 4X4mm surface mount lead-free ceramic casing, which can achieve airtight packaging. The surface of the pin solder pads is treated with gold plating technology, suitable for reflow soldering installation process.

Use restriction parameters¹

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.

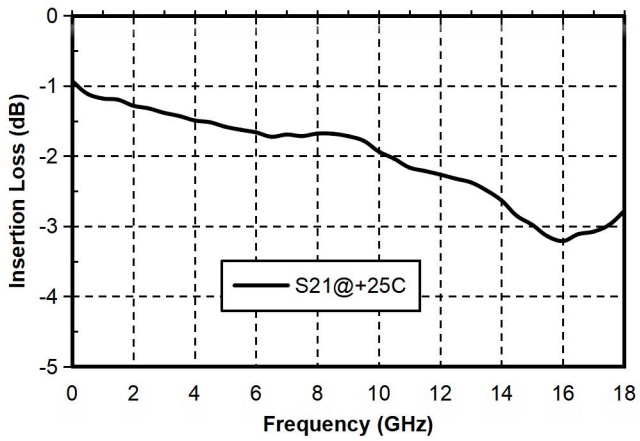
Electrical performance parameters($T_A = +25^\circ\text{C}$)

Index	Minimum value	Typical value	Maximum value	Unit
Frequency range	DC-18			GHz
Insertion loss	-	2.0	-	dB
Isolation degree	-	63	-	dB
Input return loss	-	15	-	dB
Output Return Loss	-	16	-	dB
Off state echo	-	15	-	dB
P-1dB	-	23	-	dBm
Switching speed	-	10	-	ns

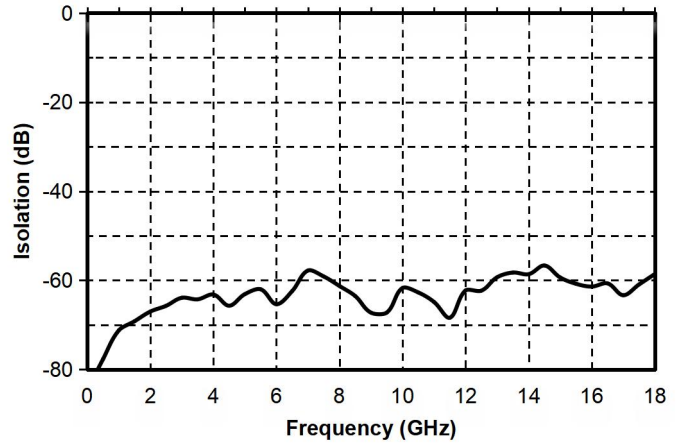
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Main indicator testing curve

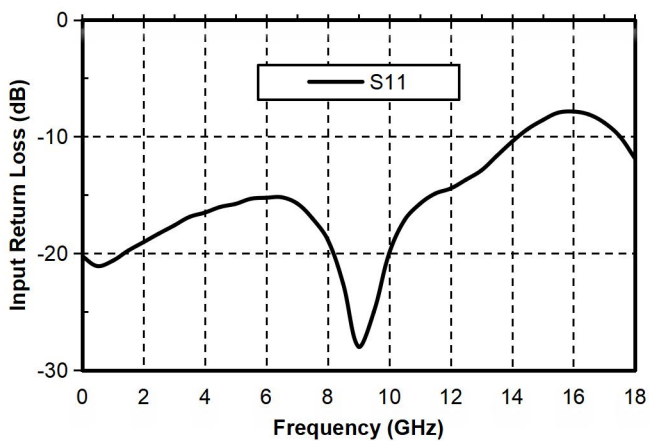
Insertion loss vs. operating frequency



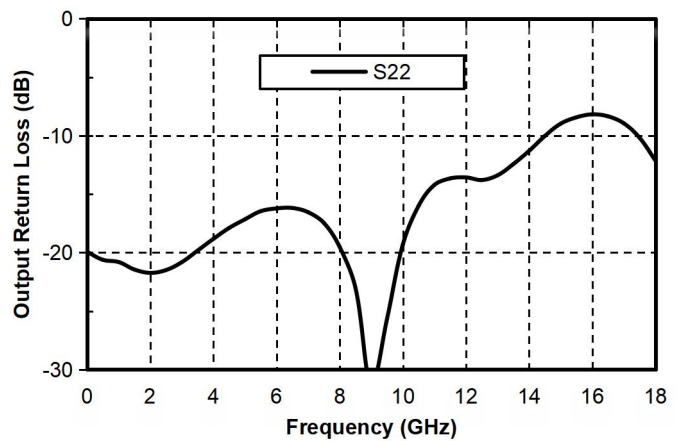
Isolation degree vs. operating frequency



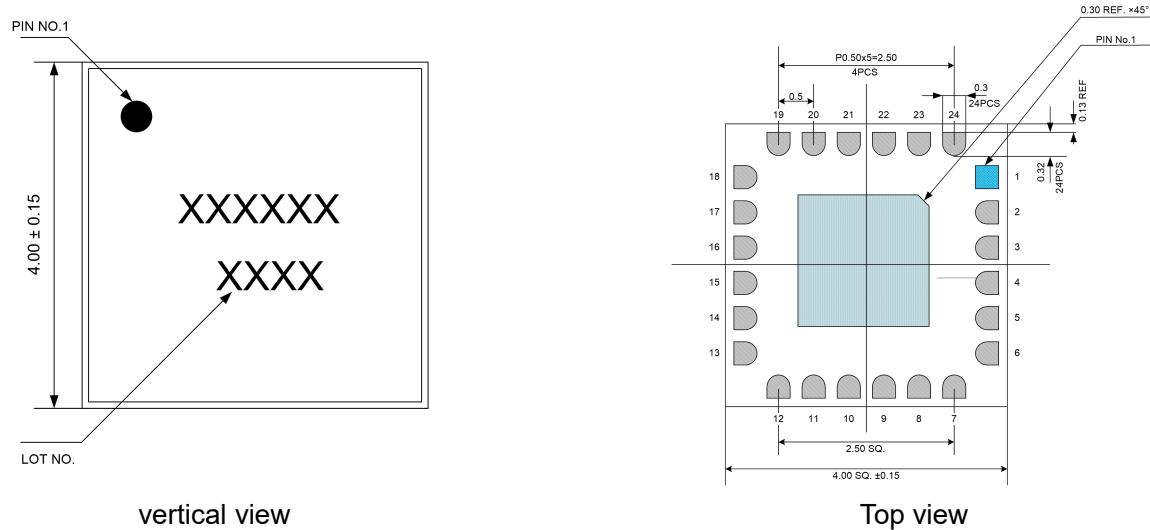
Input wave loss vs. operating frequency



Output return loss vs. operating frequency



External structure

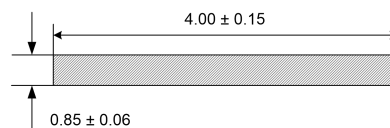


vertical view

Top view

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External structure



Side view

The units in the figure are all millimeters.

True Table

VS	VP	IN-OUT
0V	-5V	Conduction
-5V	0V	Turn off

Pin Definition

Pin number	Functional symbols	Function Description
3	RFIN	RF signal input terminal, without DC isolation capacitor inside, external DC isolation capacitor needs to be added
16	RFOUT	RF signal output terminal, without DC isolation capacitor inside, external DC isolation capacitor needs to be added
20、23	Voltage Control	Conduction and shutdown control
2、4、15、17	GND	The pins should have sufficient and good contact with the RF and DC ground
Chip bottom	GND	The bottom of the chip needs to have sufficient and good contact with RF and DC ground
other	NC	Pin suspended, can be grounded

Application circuit

