

GaAs MMIC Absorptive SPST Switch Chip, DC-18GHz

Performance characteristics

- Frequency range: DC - 18 GHz
- Insertion loss : 1.4 dB
- Isolation: 65 dB
- On-state input / output standing wave ratio: 1.2
- Off-state input /output standing wave ratio : 1.2
- 50Ohm input / output
- 100% on-wafer testing
- Chip size: 1.6 x 0.8 x 0.1mm

Product Introduction

GSW-0018AST is a GaAs MMIC absorptive single-pole single-throw switch chip with 50Ω matching at the input/output ends , a frequency range covering DC ~ 18 GHz , and 0V/-5V power supply. The switching speed is 10ns. The chip uses on-chip through-hole metallization technology to ensure good grounding, no additional grounding measures are required, and it is simple and convenient to use. The back of the chip is metallized and is suitable for eutectic sintering or conductive adhesive bonding processes.

Use restriction parameter ¹	
Control voltage range	-8V ~ +0.5V
Maximum input power	+30dBm
Operating temperature	-55 ~ + 125 °C
storage temperature	-65 ~ +150°C

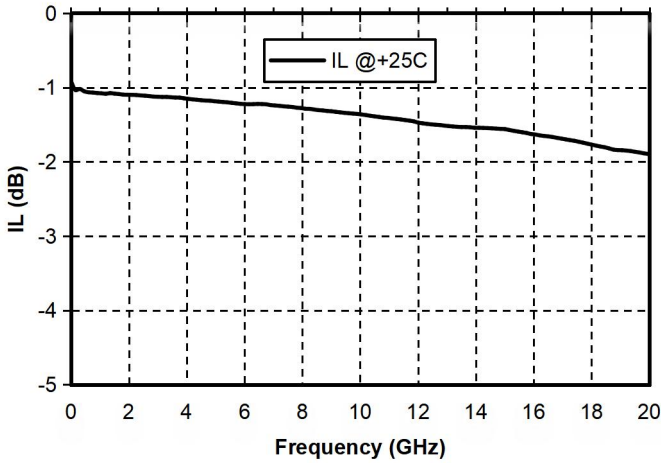
【1】 Exceeding any of these maximum limits may cause permanent damage.

Electrical Parameters (TA = +25°C)				
index	Minimum	Typical Value	Maximum	unit
Frequency Range	DC-18			G Hz
Insertion loss	-	1.4	-	dB
Isolation	-	65	-	dB
On-state input /output return loss (ON)	-	22/22	-	dB
OFF state input /output return loss (OFF)	-	20/20	-	dB
P-1dB@1-18GHz		26		dBm
Switching speed		10		ns

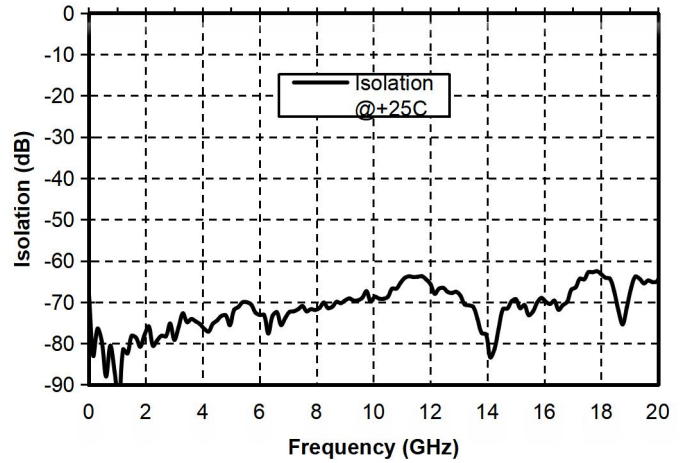
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Main index test curve

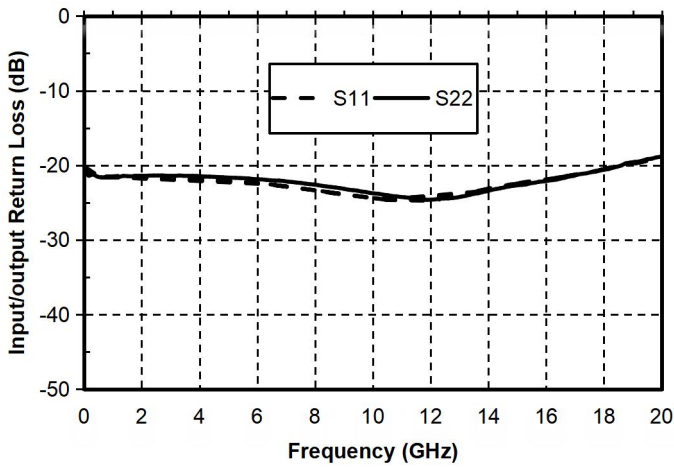
Insertion Loss vs. Operating Frequency



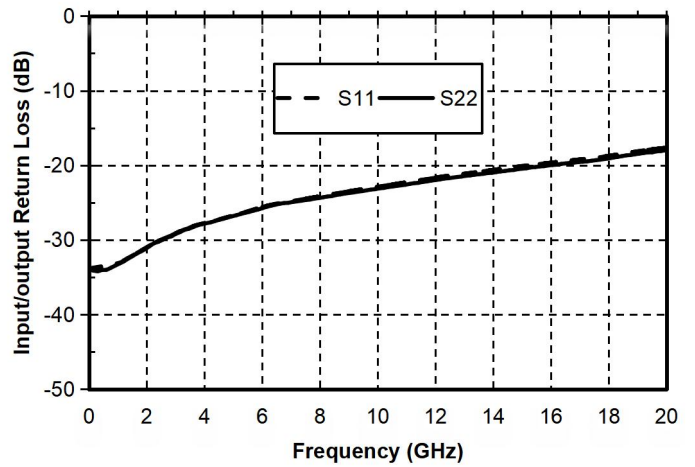
Isolation vs. Operating Frequency



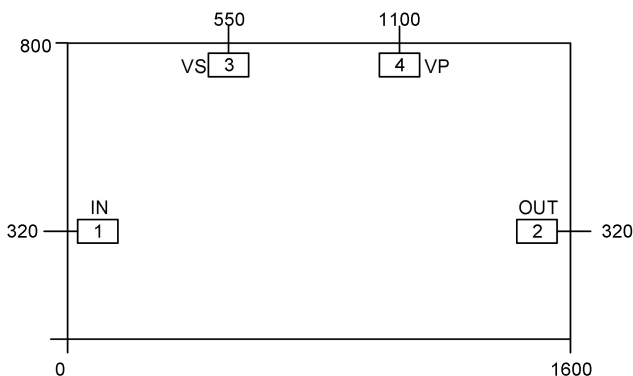
Input /Output Return Loss vs. Operating Frequency (On State)



Input /Output Return Loss vs. Operating Frequency (Off State)



Appearance structure ²



【 2 】 All units in the figure are micrometers

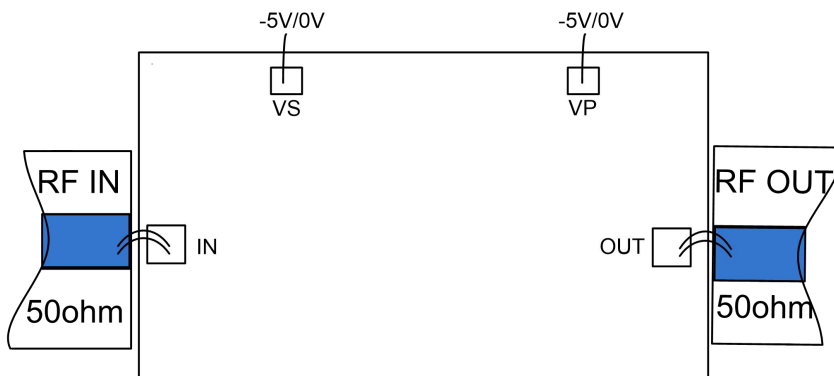
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Bonding point definition		
Bonding point number	Function Symbol	Functional Description
1	RF IN	The signal input terminal is connected to a 50 ohm circuit, and there is no DC blocking capacitor integrated into the chip.
2	RF OUT	The signal output terminal is connected to a 50 ohm circuit, and there is no DC blocking capacitor integrated into the chip.
3.4	Voltage Control	On/off control
Chip bottom	GND	The bottom of the chip needs to be well grounded to RF and DC

Truth table :

V S	VP	IN-OUT
0 V	-5 V	Continuity
-5 V	0 V	Shutdown

Recommended assembly drawing



- 1、 No external resistor is required for the control pad .
- 2、 It is recommended to bond two gold wires with a length of 300um and a diameter of 25um at each input and output port.