

## GaAs MMIC single-pole six-throw switch chip , 0.01-6 GHz

### Performance characteristics

- Frequency range: 0.01 - 6 GHz
- Insertion loss : 1.5 dB
- Isolation: 45dB
- - state VSWR : 1.2
- Integrated logic control
- 50Ohm input / output
- Chip size: QFN 5X5

### Product Introduction

GSW-00066T-PD-CQ5 is a GaAs MMIC single-pole six-throw switch chip with 50Ω matching at the input/output end, a frequency range of 0.01~6 GHz , a +5V power supply, 0 V /+5V positive level control , a switching speed of 30 ns, and a 1dB compression input power of +25 dBm . This chip uses a 5 x 5 mm ceramic surface mount package to achieve airtight packaging, and the surface of the pin pad is gold-plated, which is suitable for reflow soldering installation.

### Use restriction parameter <sup>1</sup>

Control voltage range	-0.5V ~ + 6V
Supply voltage range	+6V
Maximum input power	+30dBm
Operating temperature	-55 ~ +85°C
Storage temperature	-65 ~ +150°C

Exceeding any of these maximum limits may cause permanent damage.

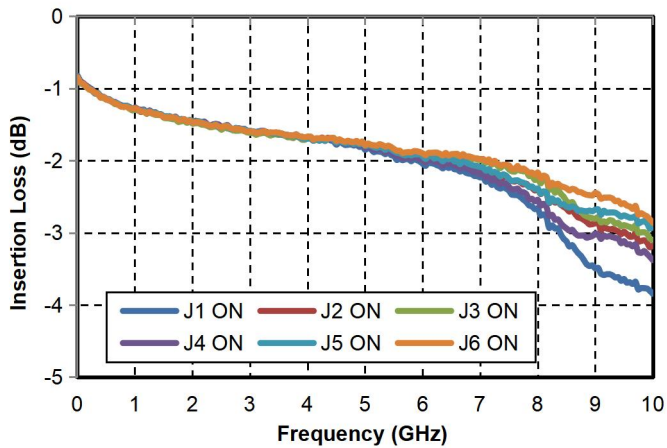
### Electrical performance parameters ( TA = +25°C , VDD = +5V, VC = 0/+5V )

Index	Minimum	Typical Value	Maximum	Unit
Frequency Range	DC-6			GHz
Insertion loss	-	1.5	-	dB
Isolation	-	45	-	dB
On-state input return loss	-	20	-	dB
On-state output return loss	-	20	-	dB
P-1dB	-	25	-	dBm
IIP3	-	40	-	dBm
Switching speed	-	100	-	ns
Control voltage	-	0/+5 (compatible with +3.3)	-	V
Control current	-	1	-	mA
Voltage	-	+5	-	V
Quiescent Current	-	20	-	mA

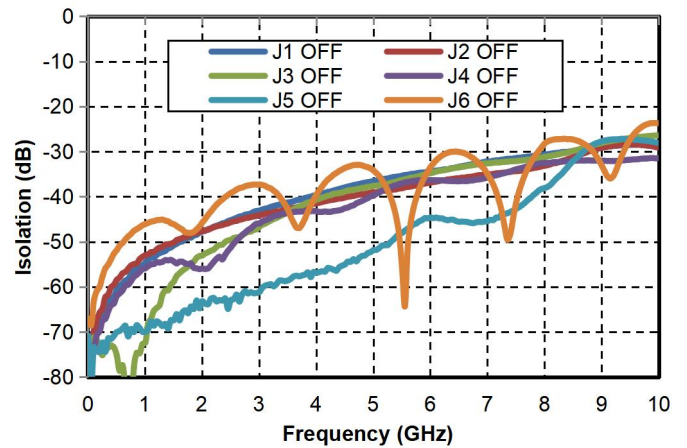
## GaAs MMIC Single Pole Six Throw Switch Chip, DC- 6 GHz

Main index test curve

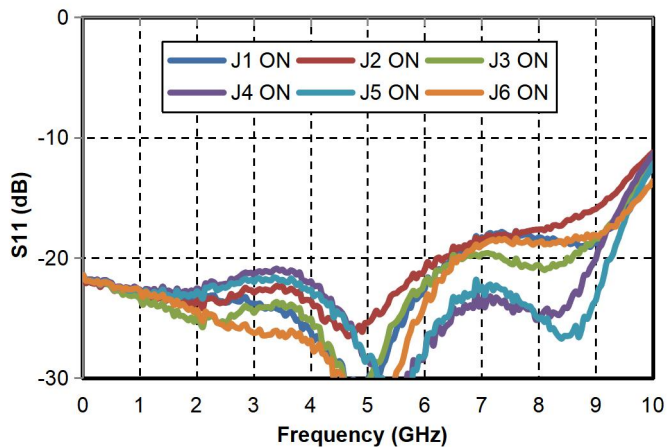
Insertion Loss vs. Operating Frequency



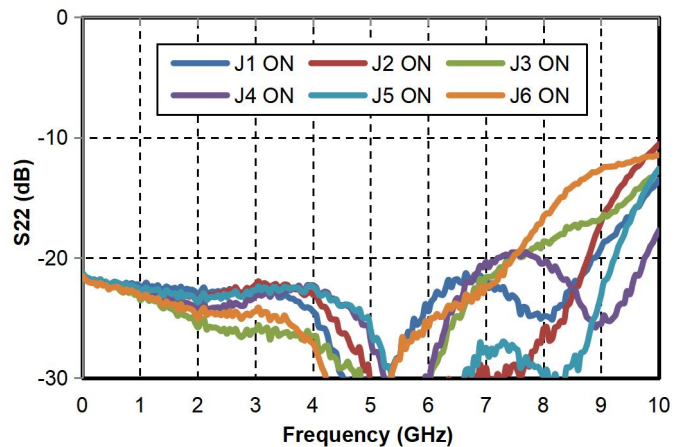
Isolation vs. Operating Frequency



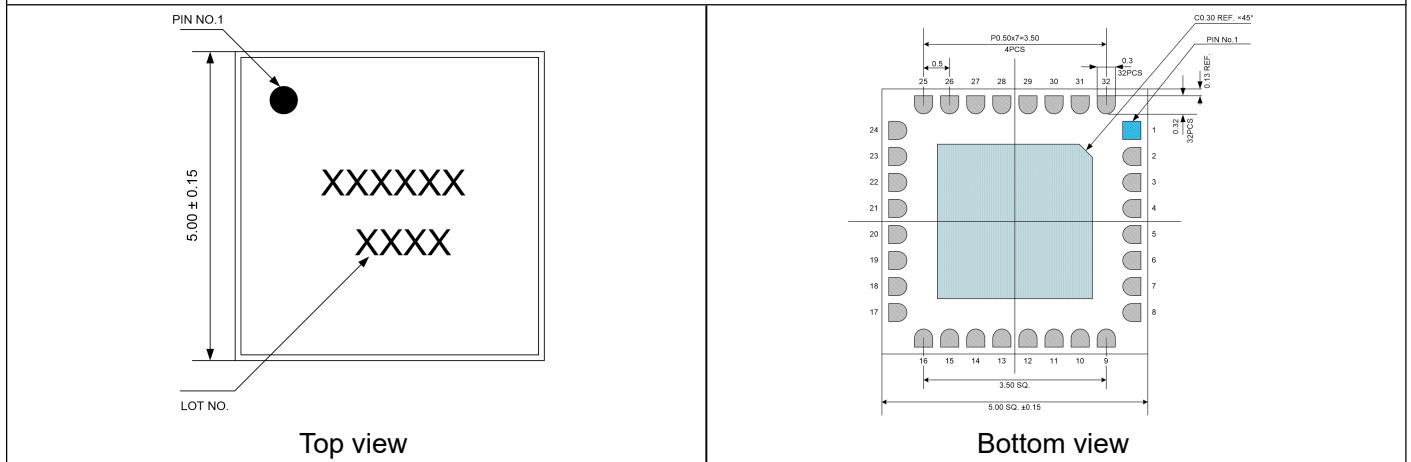
Input Return Loss vs. Operating Frequency  
( On State )



Output Return Loss vs. Operating Frequency  
( On State )

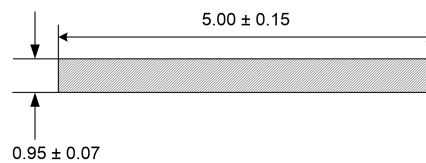


## Appearance structure



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## Appearance structure



**Side View**

All units in the figures are millimeters .

## Pin Definition

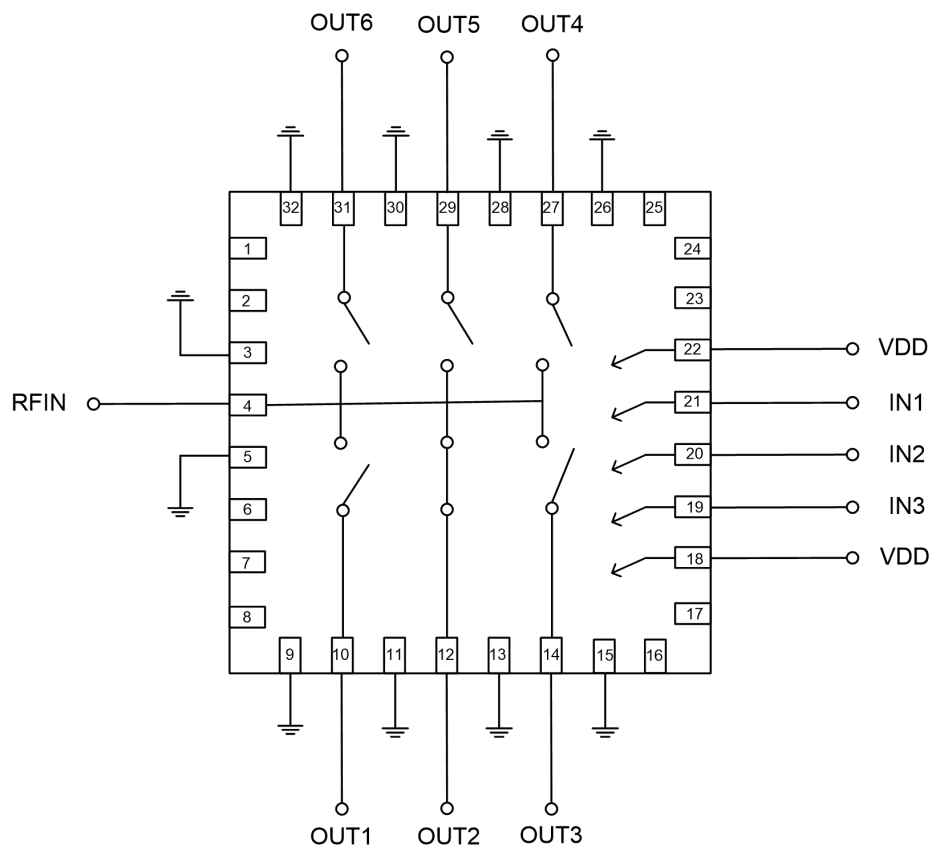
Pin number	Function Symbol	Functional Description
4	RFIN	RF signal input terminal, no DC blocking capacitor inside , external DC blocking capacitor is required
10, 12, 14, 27, 29, 31	OUT1-OUT6	RF signal output terminal, no DC blocking capacitor inside , external DC blocking capacitor is required
18, 22	VD	Power supply voltage (used for positive level control), just connect any end to VDD
19, 20, 21	IN1, IN2, IN3	Positive level control port
3, 5, 9, 11, 13, 15, 26, 28, 30, 32	GND	need to be in good contact with the RF and DC grounds.
other	NC	The pin is left floating and can be grounded
Chip bottom	GND	needs to be in good contact with the RF and DC grounds

Truth table:

VD	3	IN2	IN1	IN-OUT1	IN-OUT2	IN-OUT3	IN-OUT4	IN-OUT5	IN-OUT6
+ 5V	0V	0V	0V	Pass	Break	Break	Break	Break	Break
+ 5V	0V	0V	+ 5V	Break	Pass	Break	Break	Break	Break
+ 5V	0V	+ 5V	0V	Break	Break	Pass	Break	Break	Break
+ 5V	0V	+ 5V	+ 5V	Break	Break	Break	Pass	Break	Break
+ 5V	+ 5V	0V	0V	Break	Break	Break	Break	Pass	Break
+ 5V	+ 5V	0V	+ 5V	Break	Break	Break	Break	Break	Pass

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Recommended Circuit



### Precautions for use

- Sealing material : Ceramic material that meets ROHS standards
- Lead frame material: copper alloy
- Lead surface plating: gold, gold layer thickness 0.3um MIN
- Maximum reflow peak temperature: 260 °C