

GaAs MMIC SPDT Absorptive Switch Chip, 0.1 - 18 GHz

Performance characteristics

- Frequency range: 0.1 - 18 GHz
- Insertion loss : 2.0 dB
- Isolation: 50 dB
- On/off standing wave ratio : 1.4
- Fully positive power, control integrated logic
- 50Ohm input/output
- QFN4X4mm

Product Introduction

GSW-0018DT-P-PD-CQ4 is a GaAs MMIC absorptive single-pole double-throw switch chip, with 50Ω matching at the input/output end, a frequency range of 0.1~18 GHz , integrated logic control circuit, +5V power supply, 0V/+5V positive level control (compatible with +3.3V) , and a switching speed of 20ns. The **switch** adopts a 4X4mm surface-mount leadless ceramic tube shell, and the surface of the pin pad is gold-plated, which is suitable for reflow soldering installation process.

Use restriction parameter ¹

Control voltage range	-0.5V ~ + 6V
Supply voltage range	+6V
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, VD = +5V, VC = 0/+5V)

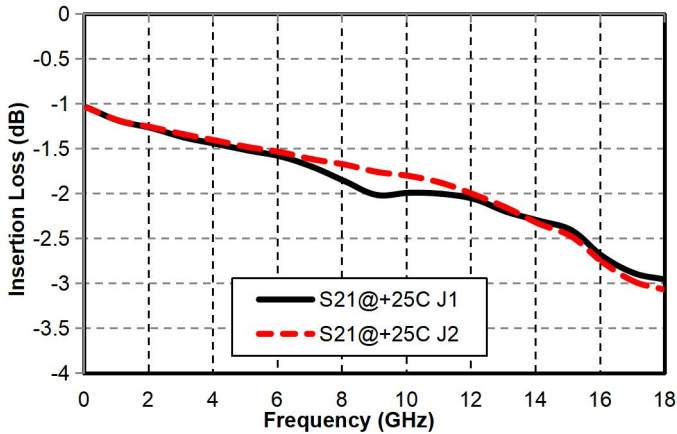
Index	Minimum	Typical Value	Maximum	Unit
Frequency Range	0.1-18			GHz
Insertion loss	-	2.0	-	dB
Isolation	-	50	-	dB
Input return loss (on, off)	-	17	-	dB
Output return loss (on, off)	-	17	-	dB
P-1dB	-	23	-	dBm
Switching speed	-	20	-	ns
Control voltage	-	0/+5	-	V
Control current	-	600	-	uA
Input high level voltage	3	-	5	V
Input low level voltage	0	-	0.8	V

voltage		+5		V
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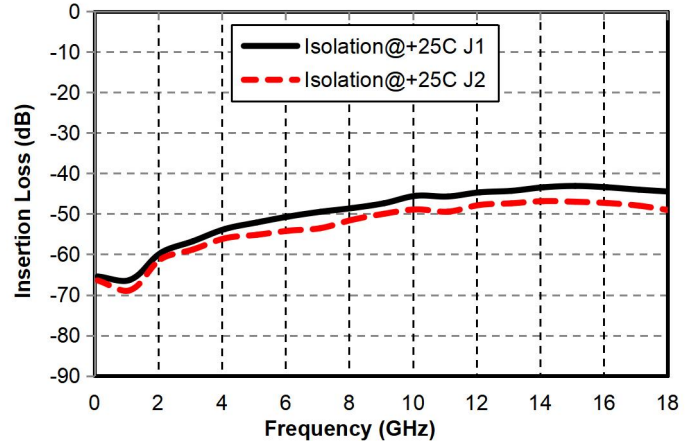
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Main index test curve

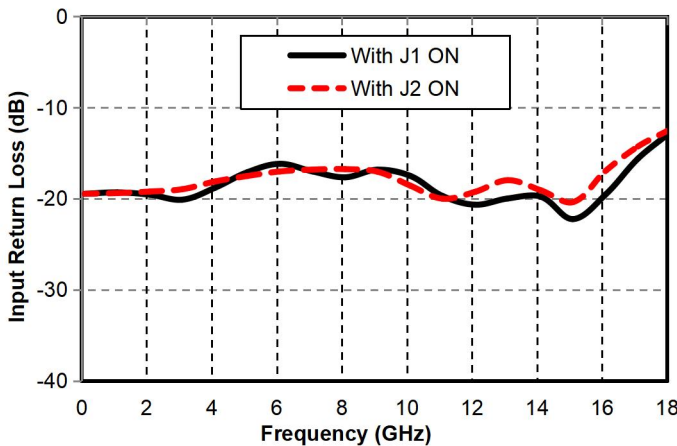
Insertion Loss vs. Operating Frequency



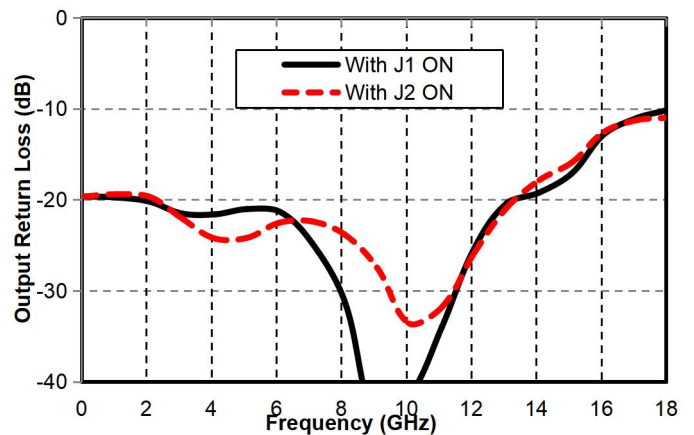
Isolation vs. Operating Frequency



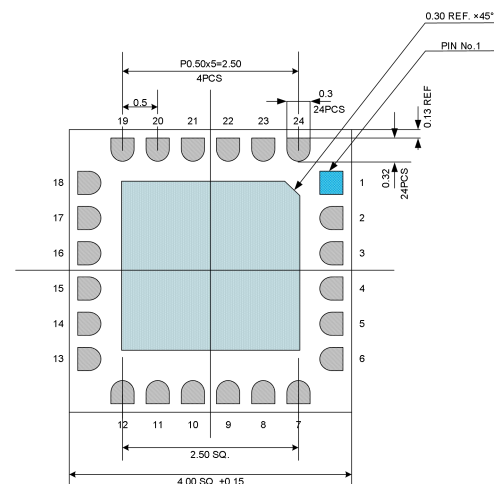
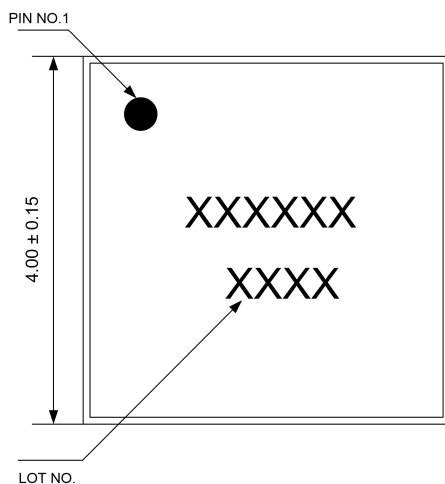
Input Wave Loss vs. Operating Frequency



Output Return Loss vs. Operating Frequency



Appearance structure

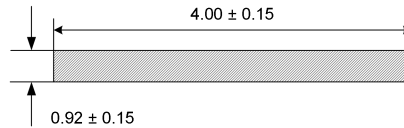


Top view

Bottom view

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Appearance structure



Side View

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

Truth table

V D	VC	path
+ 5V	+ 5V (compatible with +3.3V)	RFC - RF1
+ 5V	0V	RFC - RF2

Pin Definition

Pin number	Function Symbol	Functional Description
4	RFIN	RF signal input terminal, does not contain DC blocking capacitors .
9 , 22	RF 1, RF 2	RF signal output terminal, does not contain DC blocking capacitors inside .
15	V D	voltage
16	VC	Positive level control port
3 , 5 , 8 , 10 , 21 , 23	GND	The pins need to be in good contact with the RF and DC grounds.
other	N C	The pin is left floating and can be grounded
Chip bottom	GND	needs to be in good contact with the RF and DC grounds

Application Circuit

