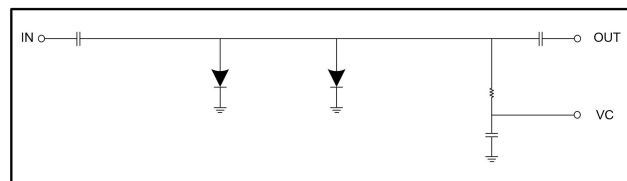


## GaAs PIN Reflective single-pole single-throw switch chip, 10-40GHz

### Performance characteristics

- Frequency range: 10-40GHz
- Insertion loss: 0.4dB typ.
- Isolation: 40dB typ.
- P-1dB: 30dBm@17GHz
- 50Ohm Input/output
- 100% on film test
- Chip size: 1.61 x 0.8 x 0.1mm
- Silicon nitride passivation, scratch protection

### Functional block diagram



### Product Introduction

GSW1B2 is a GaAs PIN reflective single-pole single-throw switch chip with 50Ω matching input/output, frequency range covering 10 ~ 40GHz, and -5V/+5V control. Built-in bias network and isolation capacitor, easy to use. With excellent switching characteristics and port standing wave over the entire operating frequency range, it is ideal for microwave hybrid integrated circuits and multi-chip modules as well as low-power systems. The switch chip adopts on-chip through hole metallization process to ensure good grounding, does not require additional grounding measures, and is simple and convenient to use. The back of the chip is metallized and suitable for eutectic sintering or conductive adhesive bonding processes.

#### Usage limit parameter<sup>1</sup>

Maximum input voltage	25V
Maximum input power	+36dBm CW
Operating temperature	-55 ~ +85°C
Storage temperature	-65 ~ +150°C

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

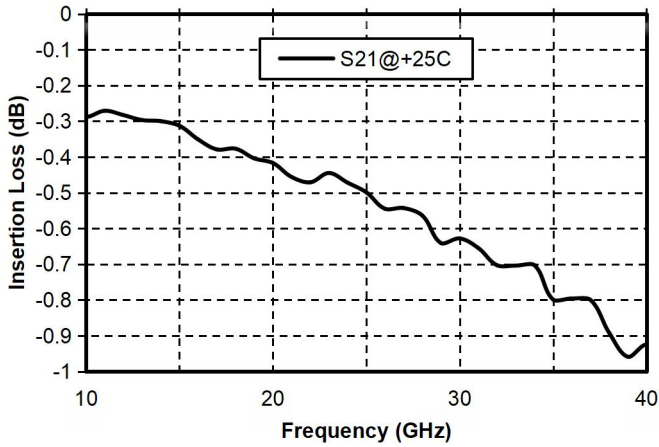
#### Electrical property parameter(T<sub>A</sub> = +25°C)

Index	Minimum value	Typical value	Maximum value	Unit
Frequency range	10-40			GHz
Insertion loss	-	0.6	1.0	dB
isolation	32	46	-	dB
Input return loss	17	20	-	dB
Output return loss	18	22	-	dB
P-1dB@17GHz	-	30	-	dBm
Switching speed	-	20	-	ns

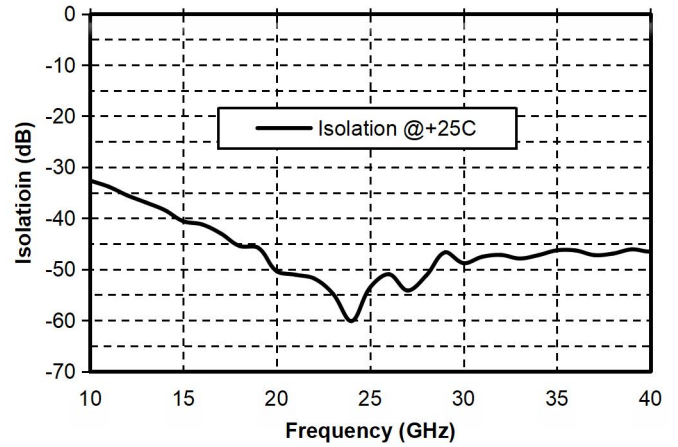
## GaAs PIN Reflective single-pole single-throw switch chip, 10-40GHz

Main index test curve

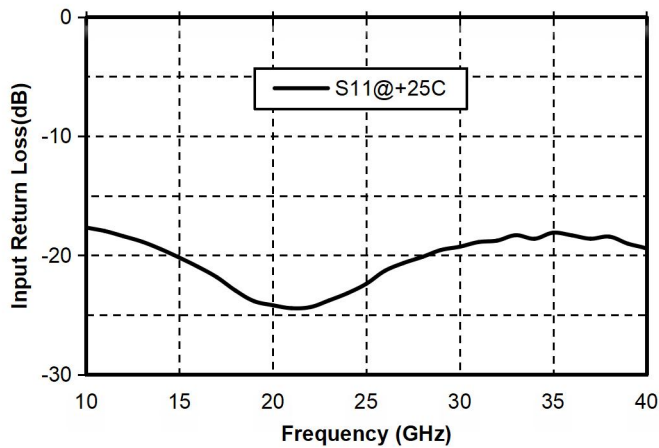
Insertion loss vs. operating frequency



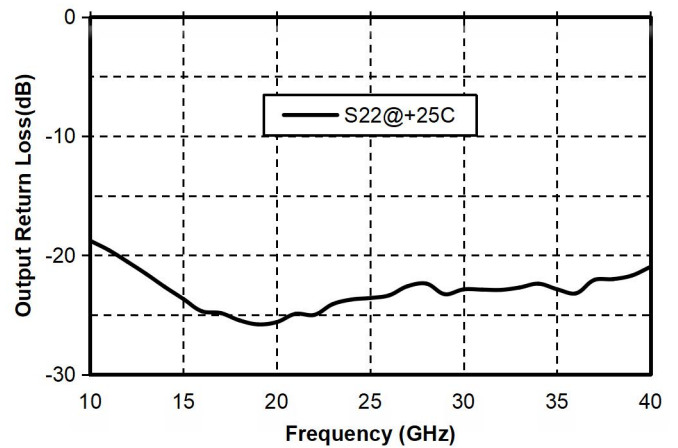
Isolation vs. operating frequency



Input return loss vs. frequency



Output return loss vs. frequency



### Typical Driver Connections

CONTROL LEVEL (DC CURRENT)	RF OUTPUT STATE
VC1	OUT1(J2)-IN(J1)
-5V	Low Loss
+10 mA	Isolation

## GaAs PIN Reflective single-pole single-throw switch chip, 10-40GHz

### External structure



Unit: micron

### Close pressure point definition

Bonding point serial number	Functional symbol	Function description
1	J1 (IN)	Rf input signal terminal
2	J2 (OUT)	Rf output signal terminal
3	VC	Signal control terminal
Chip bottom	GND	Rf input signal terminal

### Recommended circuit diagram

