

**Performance Characteristics:**

- Frequency band: DC~20GHz
- Insertion loss: $\leq 2.0\text{dB}@20\text{GHz}$
- Type: Absorption single pole triple throw
- Open input/output return loss: $\geq 13/\geq 17\text{dB}$
- Chip size: $1.50\text{mm}\times 1.50\text{mm}\times 0.1\text{mm}$

Product Description:

CW-SW30020 is a GaAs single-pole three-throw absorption switch chip. The chip has the characteristics of small insertion loss, small size and easy integration. Its frequency range covers DC~20GHz and the insertion loss is less than 2.3dB.

Electrical parameters: (TA=25°C)

Parameter name	Frequency (GHz)	Min	Typ	Max	Units
Insertion damage	DC~20		1.5	2.0	dB
isolation	DC~20		50		dB
Return loss (ON)	DC~20 (RF_IN)	13	20		dB
	DC~20 (RF1/RF2/RF3)	17	22		dB
Return loss (OFF)	DC~20	-	20		dB
Enter the 1dB	DC~20	-	25		dBm
Switching time	-	-	10		ns

Use limiting parameters:

Input power	+27dBm
Storage temperature	-65°C~175°C
Service temperature	-55°C~+85°C

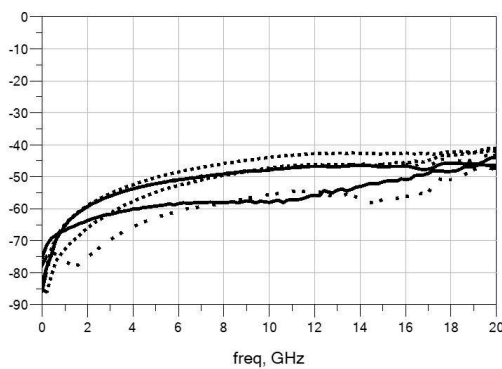
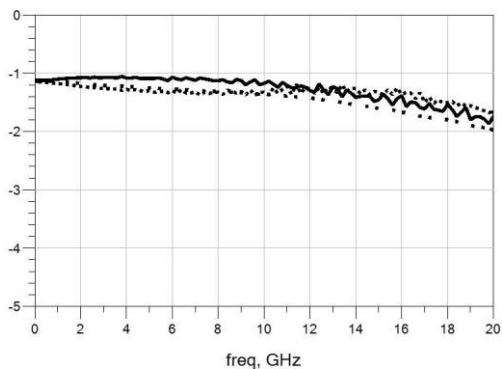
Truth table:

V1	V2	V3	V4	V5	V6	ON
0	-5	-5	-5	0	0	RF_in to RFOUT1
-5	0	0	-5	-5	0	RF_in to RFOUT2
-5	-5	0	0	0	-5	RF_in to RFOUT3

Insertion loss

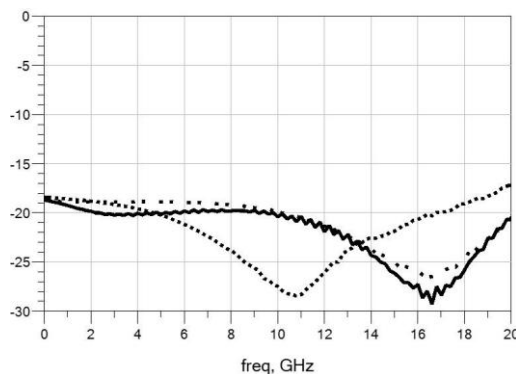
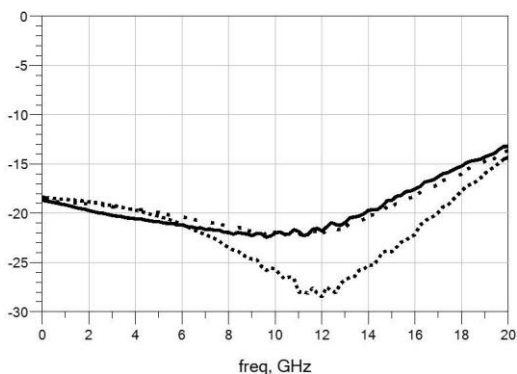
isolation

Typical curves:

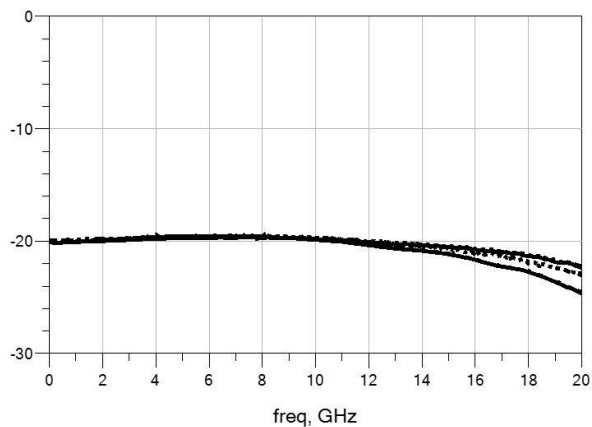


Open input return loss

open output return loss



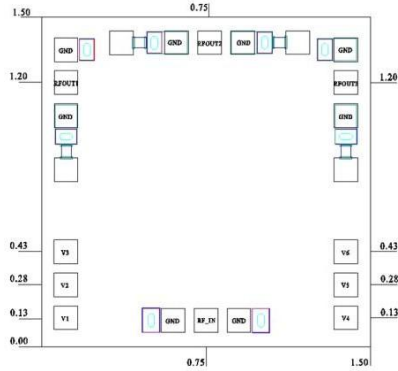
Off state output return loss



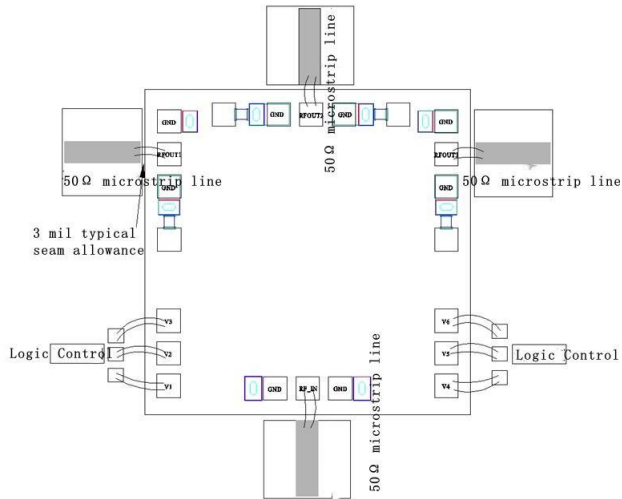


CW-SW30020

Size diagram: (unit mm)



Suggested assembly drawing:





CW-SW30020

Instructions:

Storage: The chip must be placed in a container with electrostatic protection and stored in a nitrogen environment. **Cleaning treatment:** The bare chip must be operated and used in a purified environment. It is forbidden to use liquid cleaning agent to clean the chip.

Electrostatic protection: Strictly comply with the ESD protection requirements to avoid electrostatic damage to the components.

General operation: Use vacuum chuck or precision pointed tweezers to pick up the chip. Avoid touching the surface of the chip with tools or fingers during handling.

Mounting operation: The chip can be installed using AuSn solder eutectic welding or conductive adhesive bonding process. The mounting surface must be clean and flat.

Bonding operation: Input and output each with 1 (recommended diameter of 25um gold wire) bonding wire, bonding wire length of 300um is optimal. It is recommended to use the smallest possible ultrasonic energy. Bonding begins at the pressure point on the chip and ends at the package (or substrate).