

**Performance Characteristics:**

- Frequency range: 2-20GHz
- Insertion loss: 3.4dB
- Isolation: 39dB
- Input/output standing wave: 1.7
- Chip size: 2.05mm x 2.0mm x 0.1mm

**Product Description:**

The CW-SW40220 is a single-pole four-throw switch chip that provides less than 3.4dB of insertion loss and greater than 39dB of isolation in the 2-20GHz frequency range.

**Electrical parameters:** ( $T_A=25^{\circ}\text{C}$ )

Indicators	Minimum	Typical value	Maximum value	Units
Frequency range	2-20			GHz
Insertion loss	-	-	3.4	dB
isolation	39	-	-	dB
Input standing wave (open state)	-	-	1.7	dB
Output standing wave (open	-	-	1.7	dB

**Use limiting parameters:**

Maximum input power	27dBm
Storage temperature	-65°C-150°C
Service temperature	-55°C-125°C

**Truth table:****Non-mirrored version truth table:**

VEE	A1	A2	RF2	RF3	RF4	RF5
-5	0	0	ON	OFF	OFF	OFF
-5	0	5	OFF	ON	OFF	OFF
-5	5	0	OFF	OFF	ON	OFF
-5	5	5	OFF	OFF	OFF	ON

**Mirrored version truth table:**

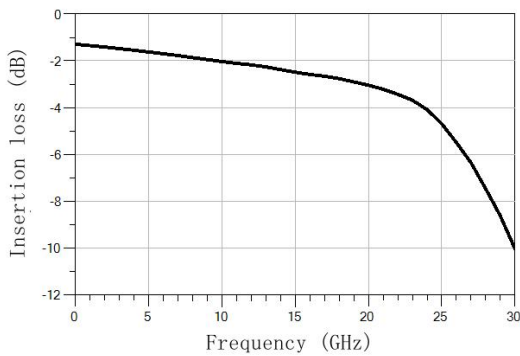
VEE	B1	B2	RF2	RF3	RF4	RF5
-5	5	5	ON	OFF	OFF	OFF
-5	5	0	OFF	ON	OFF	OFF
-5	0	5	OFF	OFF	ON	OFF
-5	0	0	OFF	OFF	OFF	ON

**Typical curves:**

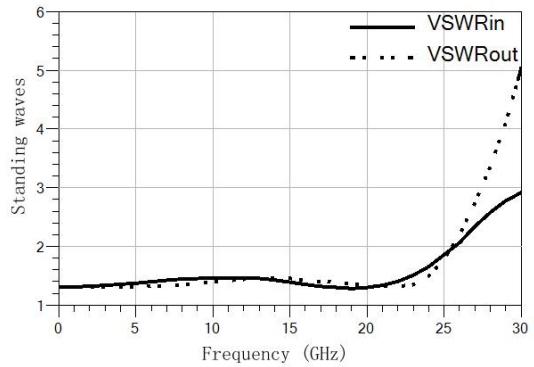
**Non-mirrored version curves:**

**First way**

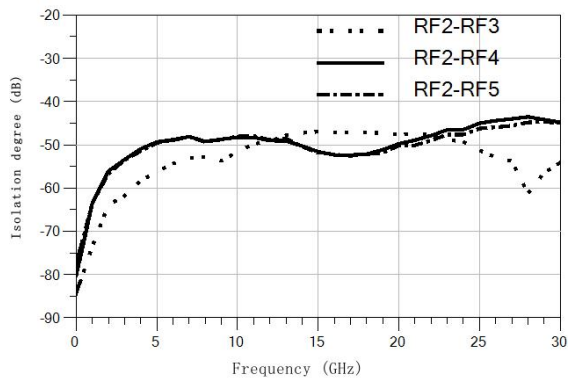
Insertion loss



I/O standing wave

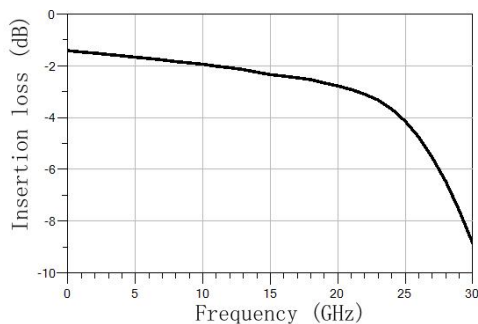


isolation

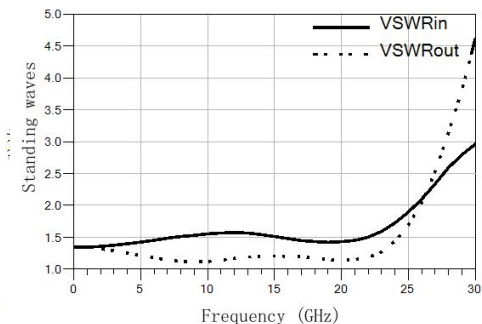


**Second way**

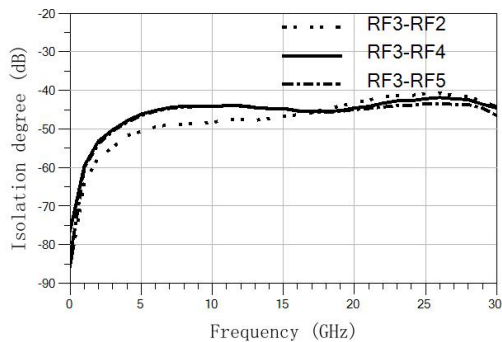
Insertion loss



input-output standing wave

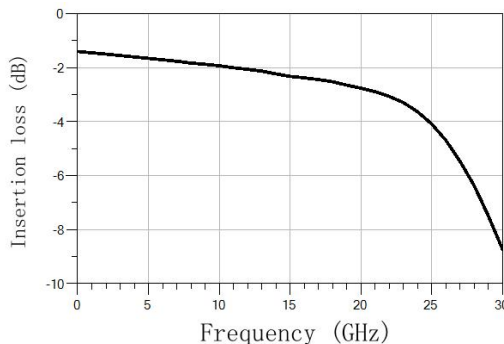


isolation

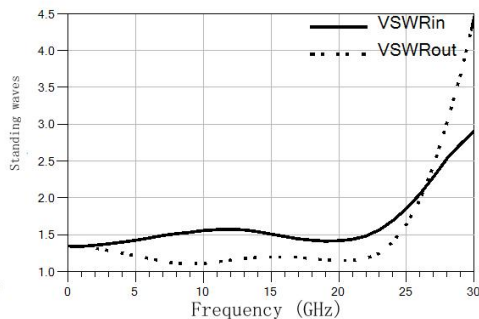


**Third way**

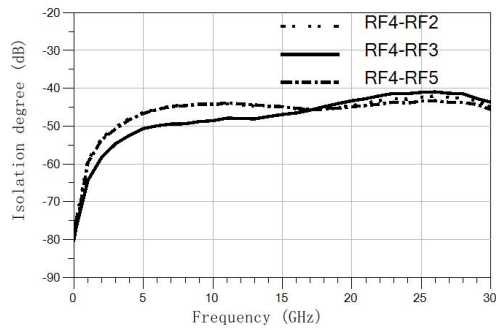
Insertion loss



input-output standing wave

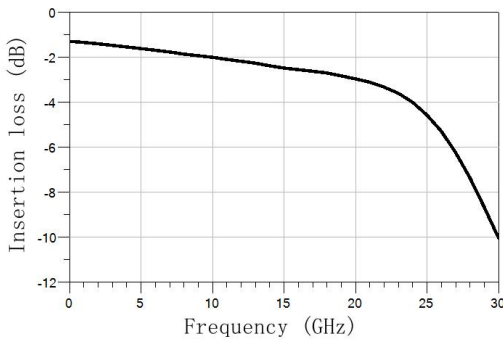


Isolation degree

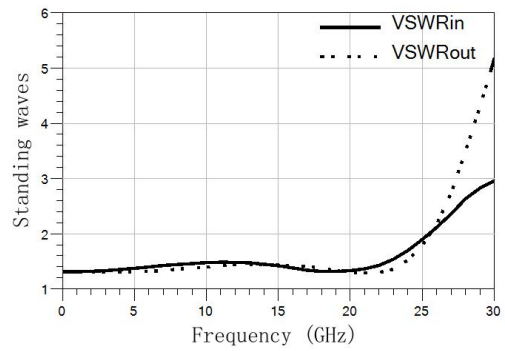


Fourth way

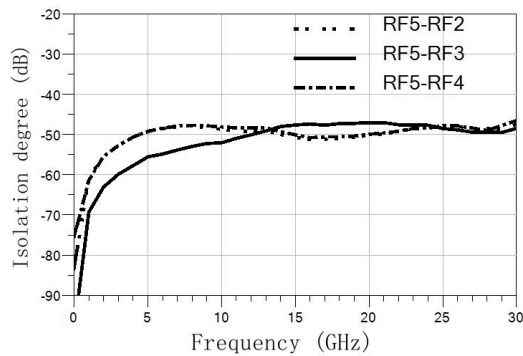
Insertion loss



input-output standing wave



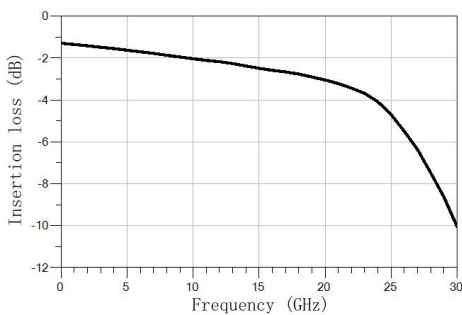
isolation



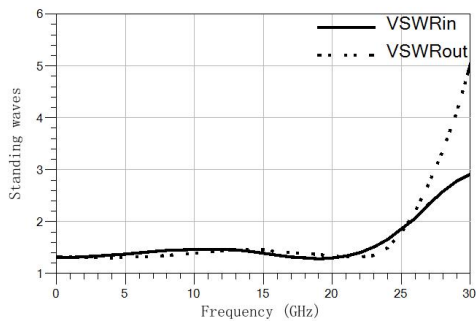
**Mirrored version curve:**

**First way**

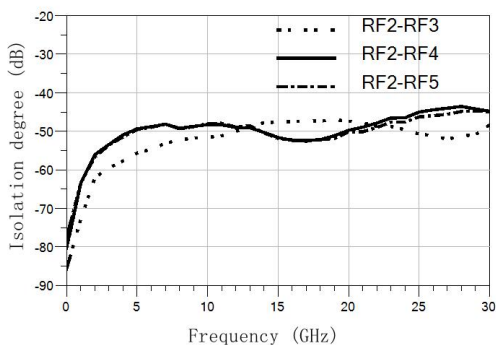
Insertion loss



I/O standing wave

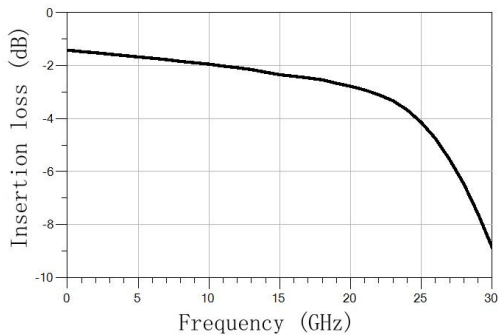


isolation

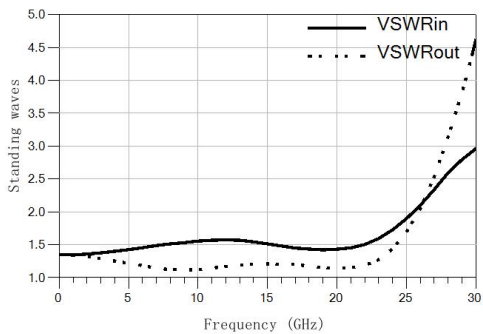


**Second way**

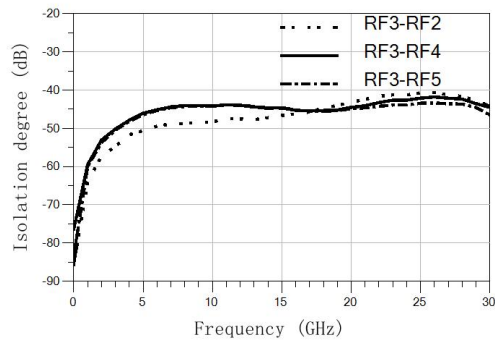
Insertion loss



input-output standing wave

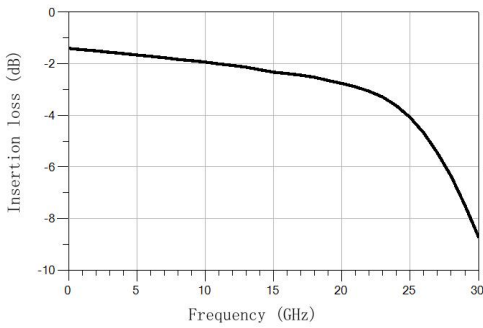


isolation

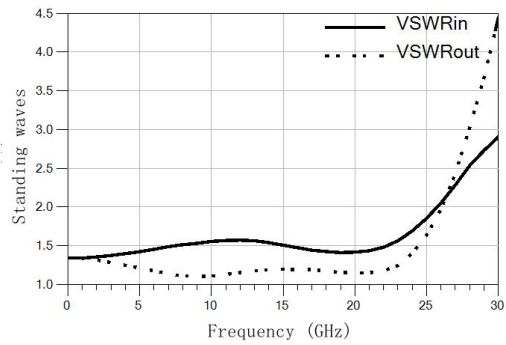


Third way

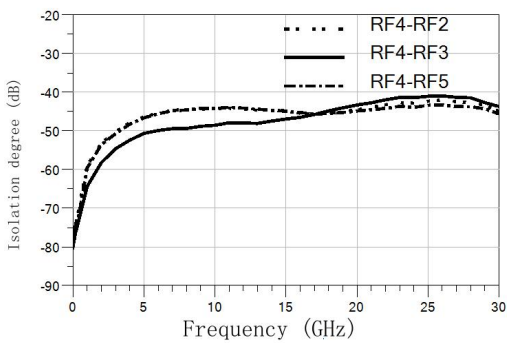
Insertion loss



input-output standing waves

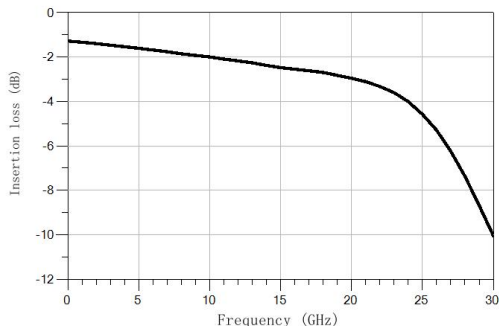


isolation

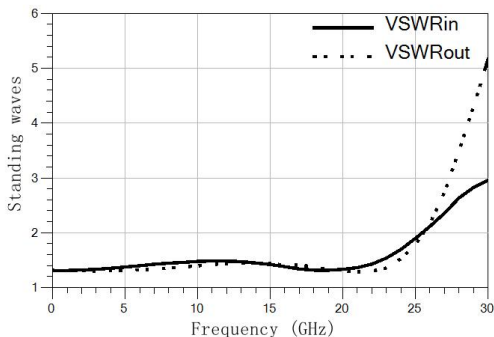


**Fourth way**

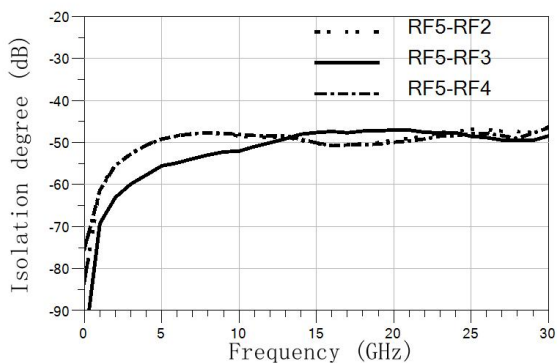
Insertion loss



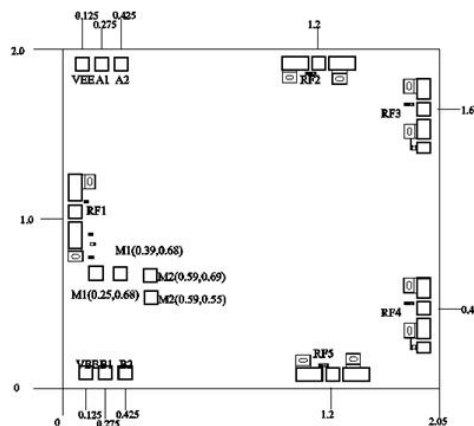
input-output standing wave



isolation

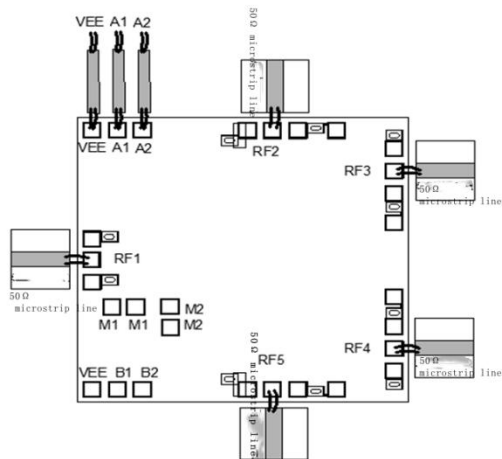


**Size drawing:** (unit mm)



**Suggested assembly drawing:**

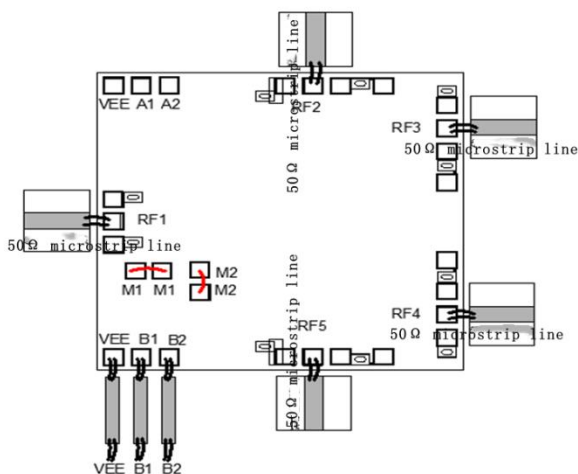
**Non-mirrored version assembly drawing**



**When not mirrored, the chip instructions:**

1. IN and OUT port gold wire diameter 25um, the best length is 300um;
2. VEE plus -5V voltage;A1/A2 different power supply switching channel;
3. Pay attention to ESD protection of all ports during use.

**Mirror version assembly drawing**





**Mirrored version, chip instructions:**

1. IN and OUT port gold wire diameter 25um, the best length is 300um;
2. Add -5V voltage when mirroring;B1/B2 different power supply switching switches, which need to connect M1 to M1, M2 to M2 with gold wire connection.

**Instructions for use:**

**Note:** I/O no straight capacitance

**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 with 2 (recommended diameter of 25um gold wire) bonding wire, bonding wire length less than 250um 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).