Feature

Pass Bands: 0.8GHz~1.4GHz, 1.2GHz~2.2GHz, 2GHz~3.5GHz, 3GHz~5GHz, 4.5GHz~7.5GHz, 7GHz~11.5GHz, 11~18GHz

Insertion Loss in pass bands: ≤8dB

Size: 4.5x5x0.1mm

Description

This device is a GaAs monolithic integrated FET switch filter bank chip. Adopt +5V/0V logic control, and switching speed is less than 30ns typ. It has low loss, excellent isolation, and high integration.

The metallization processing of thru-holes on the plate ensures good grounding. Extra grounding measures aren't required, which is easy for application. The back metallization is suitable for eutectic sintering or conductive adhesive sticking processes.

Numbering Rules

BW SBFX – XXX/XXX – XCX
1 2 3 4 5 6 7

1. Series BW
2. SBF means switch BPF bank
3. Channel numbers
4. Starting frequency (GHz)
5. Cut-off frequency (GHz)
6. Section numbers.
7. Insertion loss at F0 (dB)

Absolute Rating

Input Power	27dBm
Storage Temperature	-65~+150℃
Operating Temperature	-55~+125℃

Electrical Specifications 1 (T_A=+25℃)

Spec.	Pass band 1	Pass band 2	Pass band 3	Pass band 4	Unit
Freq. Range	0.8~1.4	1.2~2.2	2~3.5	3~5	GHz
Insertion Loss	≤8.0	≤8.0	≤8.0	≤8.0	dB
Ripple in BW	≤1.5	≤1.5	≤1.5	≤1.5	dB
Rejection	≥30@0.4&2GHz	≥30@0.7&3.4GHz	≥30@1.3&4.2GHz	≥30@2.1GHz ≥30@6.3GHz	dBc
VSWR	≤2				

Electrical Specifications 2 (T_A=+25℃)

Spec.	Pass band 5	Pass band 6	Pass band 7	Unit
Freq. Range	4.5~7.5	7~11.5	11~18	GHz
Insertion Loss	≤8.0	≤8.0	≤8.0	dB
Ripple in BW	≤1.5	≤1.5	≤1.5	dB
Rejection	≥30@3.4GHz ≥30@8.9GHz	≥30@5.5GHz ≥30@13.8GHz	≥30@8.8GHz ≥30@21.5GHz	dBc
VSWR	≤2			

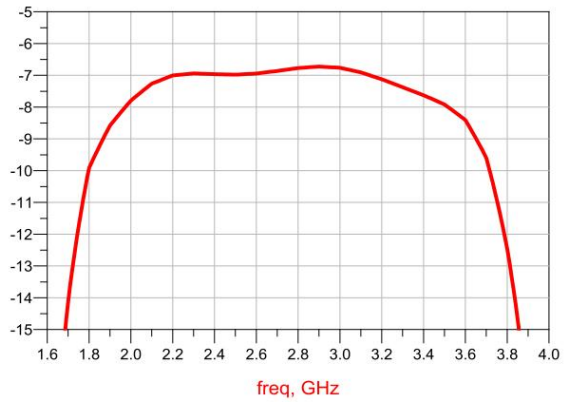
S2P file name: BWSBF7-R8_18-7C7.s2p

Typical Test Curves

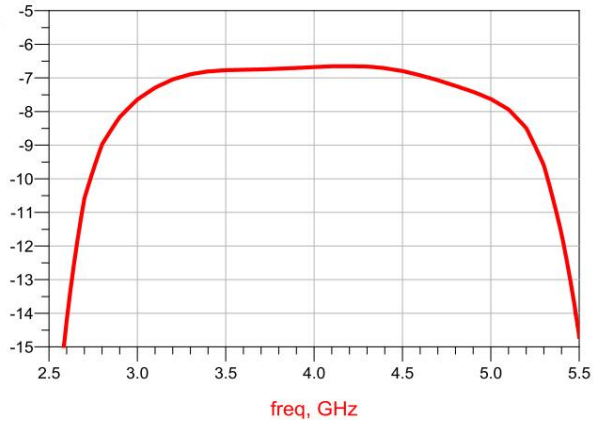
Pass band 1 Insertion Loss VS Frequency (TA=25℃)

Pass band 2 Insertion Loss VS Frequency (TA=25℃)

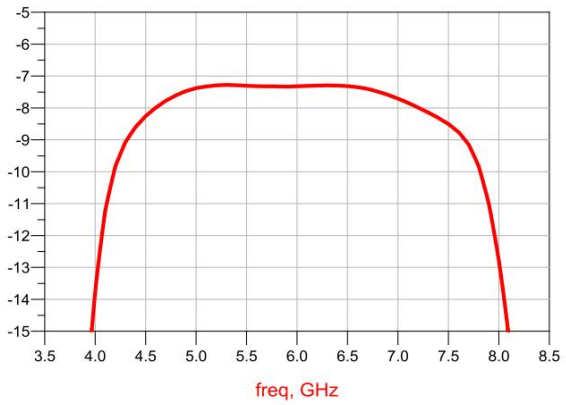
Pass band 3 Insertion Loss VS Frequency (TA=25℃)



Pass band 4 Insertion Loss VS Frequency (TA=25℃)



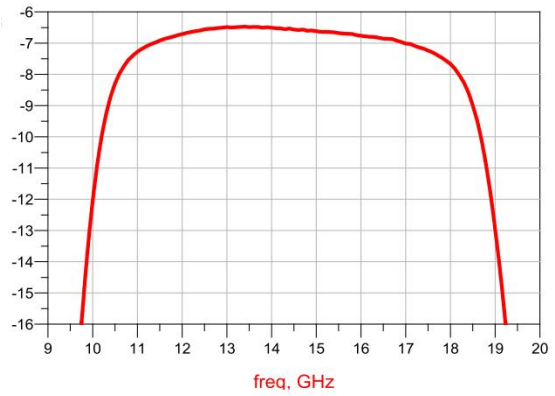
Pass band 5 Insertion Loss VS Frequency (TA=25℃)

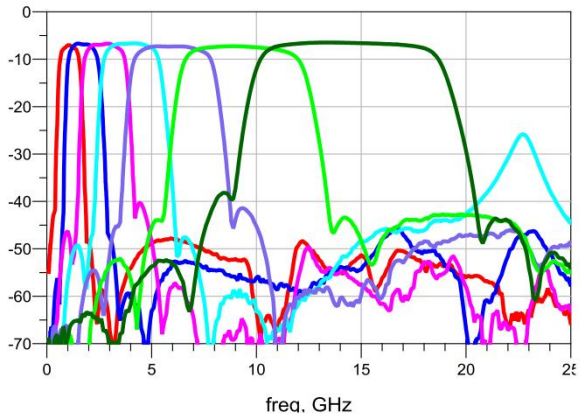


Pass band 6 Insertion Loss VS Frequency (TA=25℃)

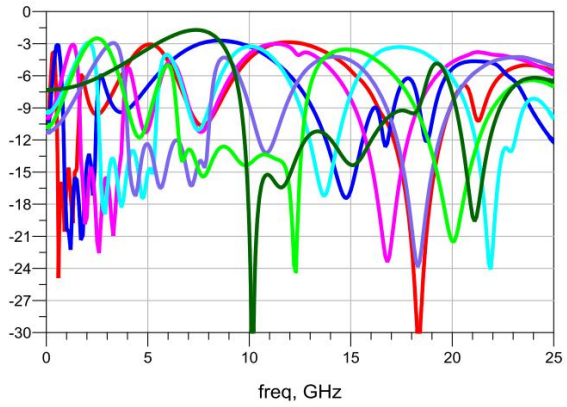
Pass band 7 Insertion Loss VS Frequency (TA=25℃)

Seven-band amplitude-frequency characteristics

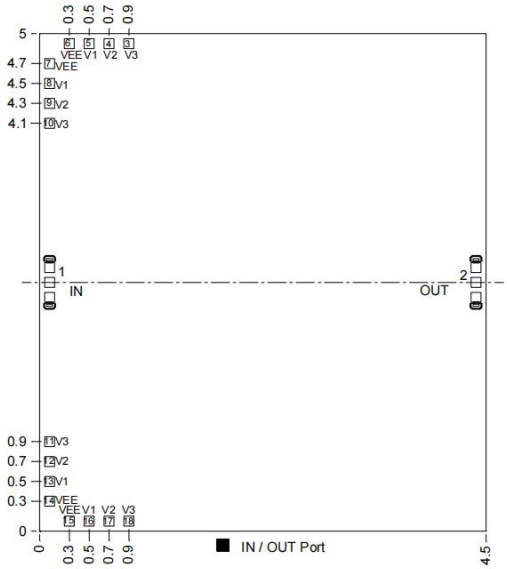




Seven-band VSWR



Mechanical Specification



Truth Table

Control Voltage (VEE=-5V)			Pass bands (GHz)
V1	V2	V3	
0	0	0	0.8~1.4
0	5	0	1.2~2.2
0	0	5	2~3.5
0	5	5	3~5
5	0	5	4.5~7.5
5	0	0	7~11.5
5	5	5	11~18

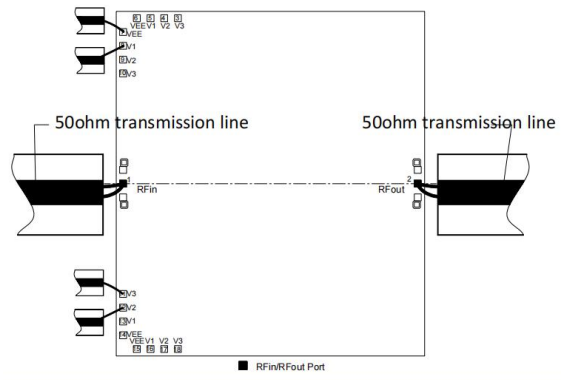
PINS Definitions

NO	Symbol	Description
1,2	IN, OUT	RF input, RF output (interchangeable)
6,7,14,15	VEE	Driver supply voltage (select one)
5,8,13,16	V1	Control port (select one)
4,9,12,17	V2	Control port (select one)
3,10,11,18	V3	Control port (select one)

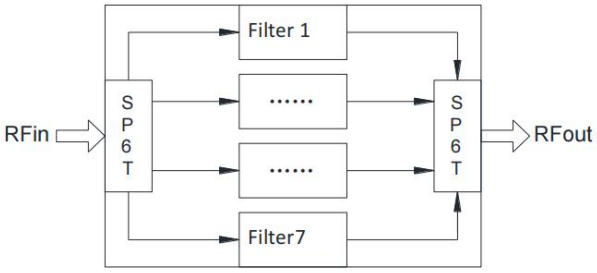
Notes:

1. Dimensions are um. Tolerance: ±0.05mm
2. Die thickness is 0.1mm
3. Typical bond pad is 100um *100um, which is 50um away from chip edge.
4. The bottom of the device is gold plated, should be grounded.
5. Cannot bond on through-holes

Recommended Assembly Diagrams



Functional Diagram



Application Notes:

1) Use in a clean environment. Be careful not to touch the chip surface.

2) It is recommended to use two 25um diameter gold wires for bonding. The length of the bonding wire should be less than 400um.

3) Use 80/20 gold-tin sintering. The sintering temperature should not exceed 300℃. The sintering time should be as short as possible and should not exceed 30 seconds.

4) This product is an electrostatic sensitive device. Pay attention to anti-static during storage and use.

5) Store in a dry, nitrogen environment.

6) Do not try to clean the chip surface with dry or wet chemical methods.

7) Please contact the supplier if you have any questions.