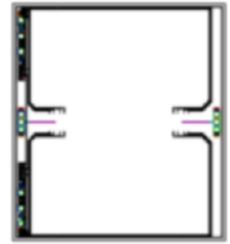


AMT1813-01
8 – 12GHz Bandpass Switch Filter Group



Key Features :

- Pass band frequency : 8 – 9GHz, 9 - 10GHz, 10 – 11GHz, 11 – 12GHz;
- Centre insertion loss : 7dB
- In-band standing wave : 1.8
- Out-band rejection : ≥40dBc
- Input/output standing wave : 1.4/1.4
- Chip dimensions : 4.05mm x 4.5mm x 0.1mm
- Applications : 5G mobile communication, wireless communication, radio telecommunication etc.

Description :

AMT1813-01 is a high performance bandpass filter chip. Its pass band frequency range is 8 – 12GHz, in-band insertion loss is less than 7dB, in-band standing wave is less than 1.8.

Absolute Maximum Ratings (Ta = 25°C)

Symbol	Parameter	Value	Remark
Pin	Input signal power	30dBm	
Ta	Operation Temperature	-55°C ~ +125°C	
Tstg	Storage Temperature	-55°C ~ +125°C	

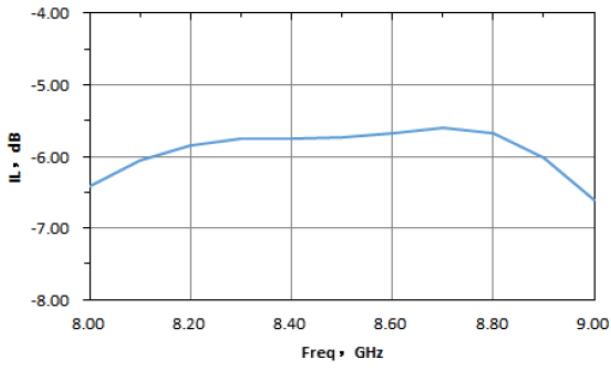
[1] Operation outside any of the Absolute Maximum Ratings may cause permanent device damage.

Electrical Characteristics (Ta = 25°C)

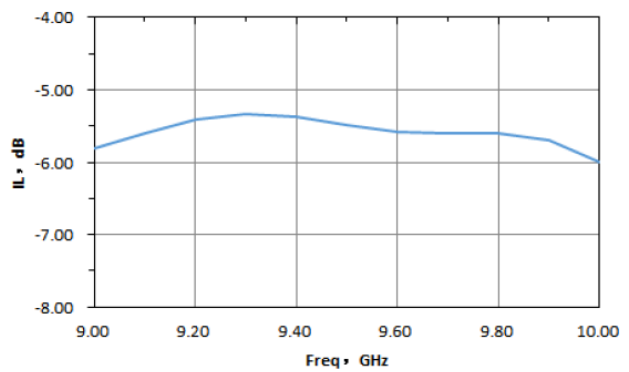
Symbol	Parameter		Value			Unit	
			Min	Typical	Max		
IL ₀	Centre Insertion loss		-	7	6	dB	
SS	Out-band rejection	8 - 9	7GHz	-	40	-	dBc
			10.5GHz	-	40	-	
			11.6GHz - 12.6GHz	-	35	-	
		9 - 10	8GHz	-	40	-	
			12GHz	-	40	-	
			12.6GHz - 13.6GHz	-	35	-	
		10 - 11	8.8GHz	-	40	-	
			12.8GHz	-	40	-	
			13.6GHz - 14.6GHz	-	35	-	
		11 - 12	9.8GHz	-	40	-	
			13.8GHz	-	40	-	
			14.6GHz - 15.6GHz	-	35	-	
VSWR	In-band standing wave		-	1.8	-	-	

Typical Performance

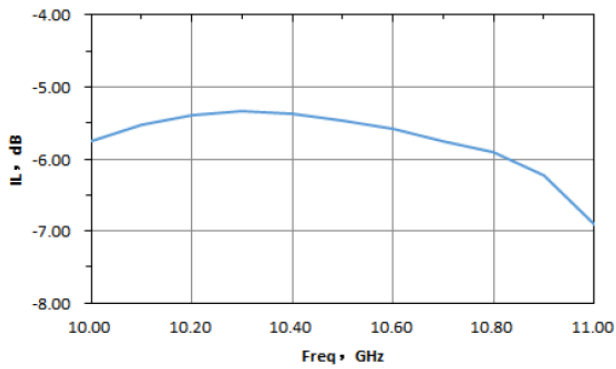
In-band Insertion Loss Curve



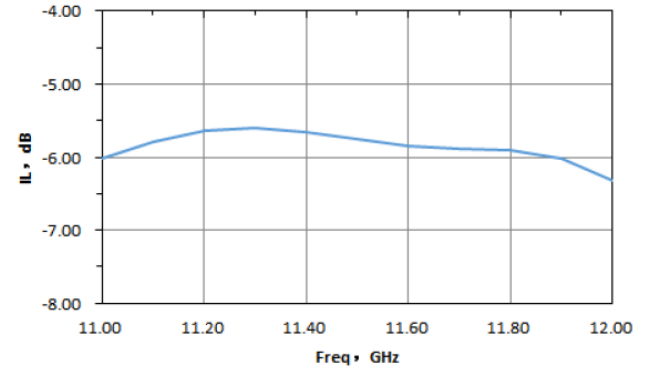
8-9G



9-10G

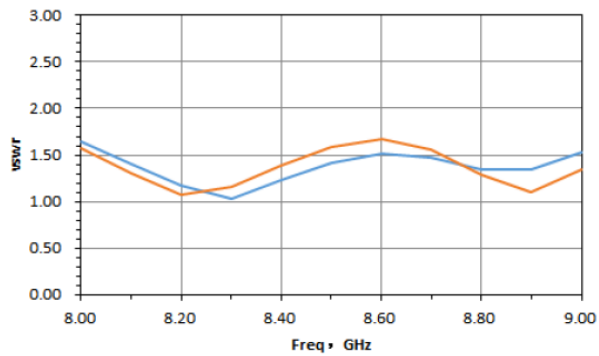


10-11G

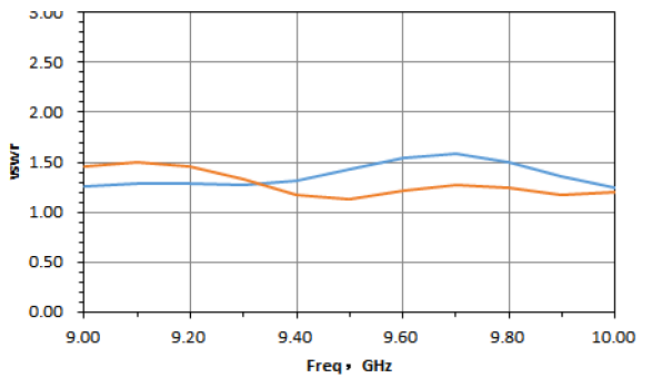


11-12G

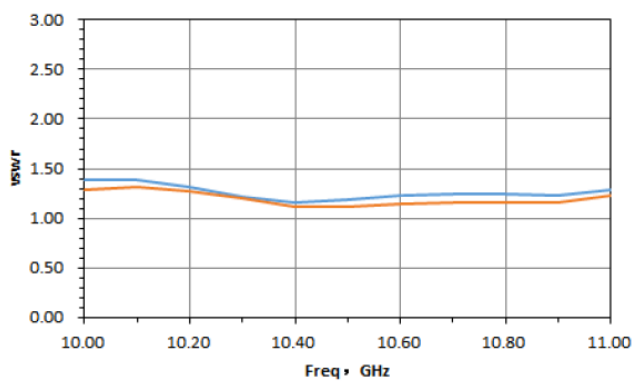
In-band Standing Wave Curve



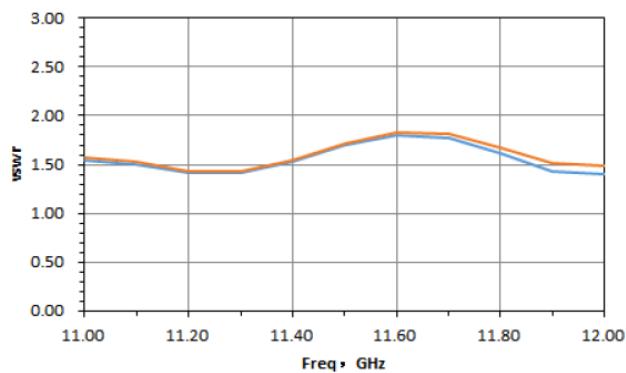
8-9G



9-10G

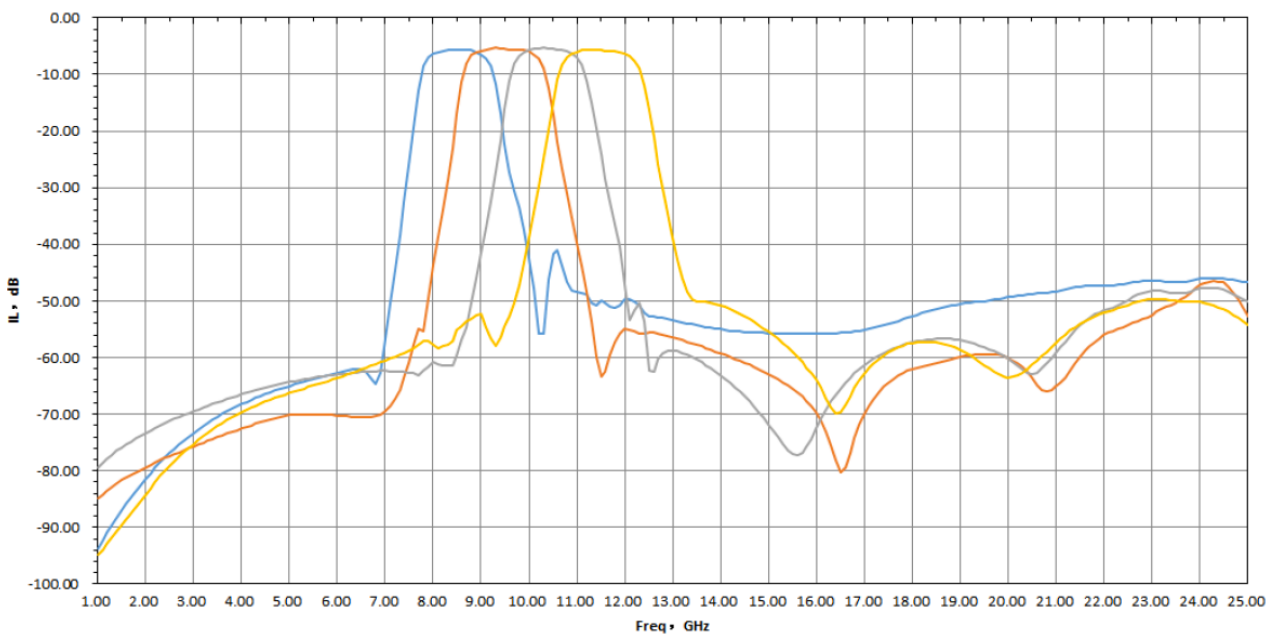


10-11G

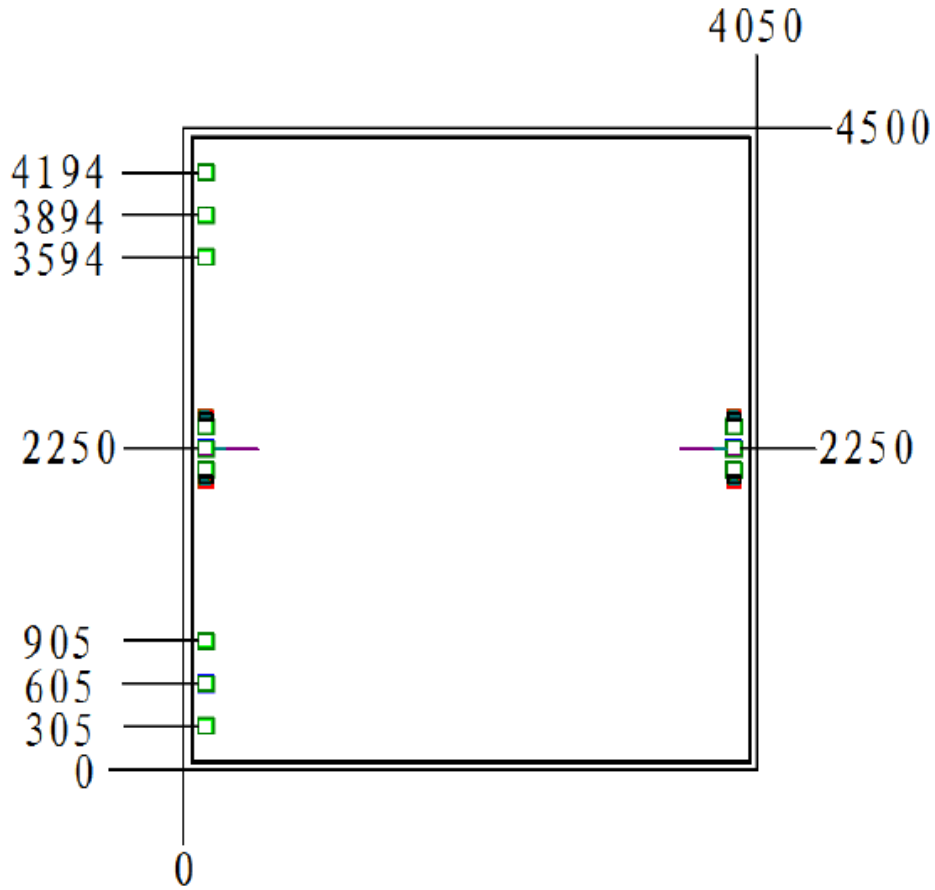


11-12G

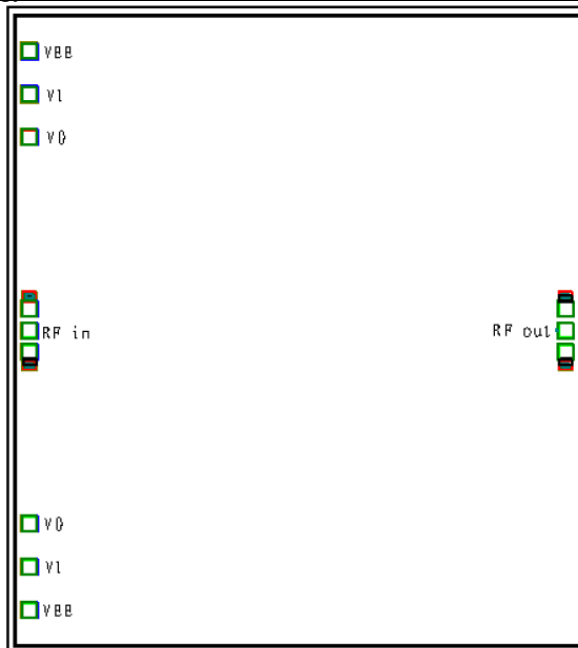
Out-band Rejection Curve



Chip Dimensions (Unit : μm)



Chip Layout Diagram



Truth Table

Passband	Control Drive Voltage (VEE = -5V) +5V/0V Control	
	V0	V1
8 – 9GHz	0	0
9 – 10GHz	5	0
10 – 11GHz	0	5
11 – 12GHz	5	5

Pad Definition

Symbol	Function Description	Dimension
RF_in	RF signal input port, external connect to 50Ω system; if direct current is applied, need DC blocking capacitor.	100μm*100μm
RF_out	RF signal output port, external connect to 50Ω system; if direct current is applied, need DC blocking capacitor.	100μm*100μm
V0	+5V/0V control	
V1	+5V/0V control	100μm*100μm
VEE	-5V supply	100μm*100μm

Please see Appendix A for details.