AGBPFXXX

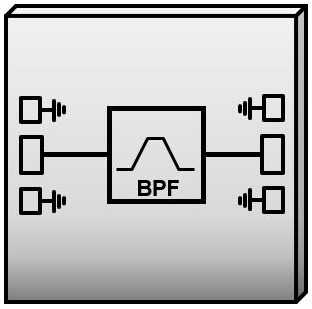
GaAs IPD MMIC
Bandpass Filter Series

Typical Applications

- Communication Systems
- Point to Point Radio
- Fiber Optics
- Test Equipment
- Wideband Military & Space

Series Features

- Bandpass Filters covering S-Band to Ka-Band
- 50Ω Matched DC blocked RF Ports
- Die Size: 1.00 x 0.75 x 0.1 mm; Matches AGATNxx, AGLPFxxx, AGBSFxxx, and AGTRMxxx series MMICs



AGBPFxxx Series Parts

Part Number	Description	Page No.
AGBPF063	3.6GHz – 9.0GHz Bandpass Filter	2
AGBPF078	7.1GHz – 8.5GHz Bandpass Filter	3
AGBPF100	8.0GHz – 12.0GHz Bandpass Filter	4
AGBPF118	10.7GHz – 12.9GHz Bandpass Filter	5
AGBPF150	12.0GHz – 18.0GHz Bandpass Filter	6
AGBPF195	17.7GHz – 21.2GHz Bandpass Filter	7
AGBPF263	20.5GHz – 32.0GHz Bandpass Filter	8
AGBPF295	27.0GHz – 32.0GHz Bandpass Filter	9

AGBPF063

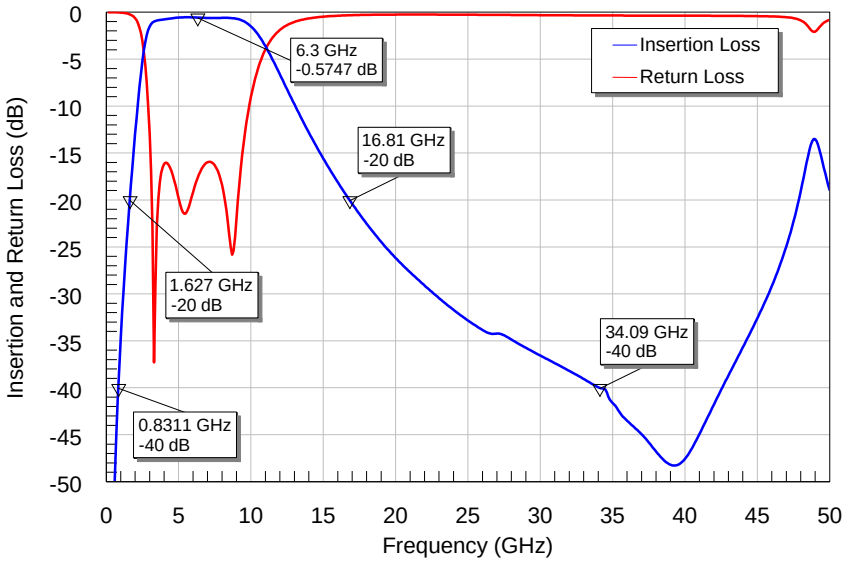
GaAs IPD MMIC
3.6GHz – 9.0GHz Bandpass Filter

Features

- Center Frequency: 6.3GHz
- Passband Loss: 0.57dB @ 6.3GHz
- Rejection: 20dB at 1.6GHz and 16.8GHz
- 50Ω Matched DC blocked RF Ports

Performance Graphs

Insertion and Return Loss (Simulated)



Electrical Specifications (TA = +25°C)

Parameter	Units	Minimum	Typical	Maximum
Frequency	GHz	3.6		9.0
Passband Loss	dB		0.57	0.85
Passband Return Loss	dB		18	
Rejection 20dB Point	GHz	1.6		16.8
Rejection 40dB Point	GHz	0.8		34.1
Package Type			Die	

AGBPF078

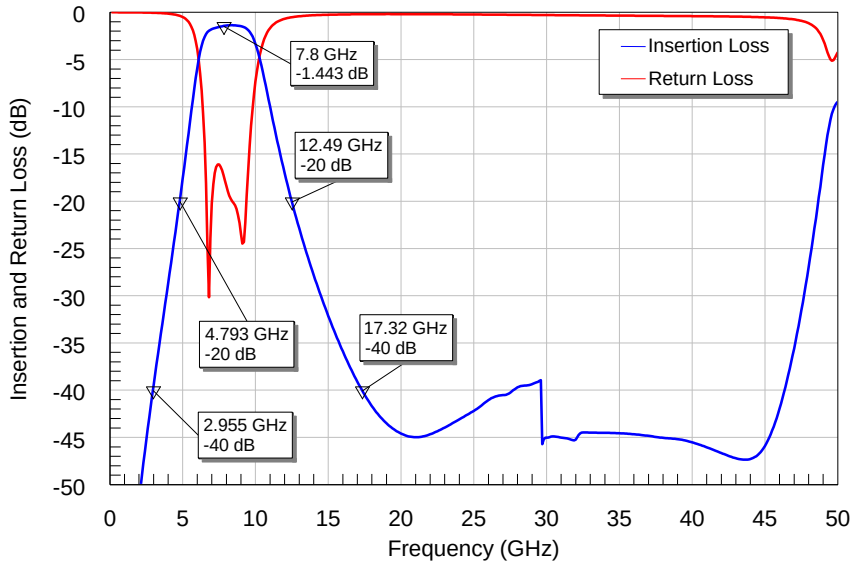
GaAs IPD MMIC
7.1GHz – 8.5GHz Bandpass Filter

Features

- Center Frequency: 7.8GHz
- Passband Loss: 1.44dB @ 7.8GHz
- Rejection: 20dB at 4.8GHz and 12.5GHz
- 50Ω Matched DC blocked RF Ports

Performance Graphs

Insertion and Return Loss (Simulated)



Electrical Specifications (TA = +25°C)

Parameter	Units	Minimum	Typical	Maximum
Frequency	GHz	7.1		8.5
Passband Loss	dB		1.44	1.72
Passband Return Loss	dB		18	
Rejection 20dB Point	GHz	4.8		12.5
Rejection 40dB Point	GHz	3.0		17.3
Package Type			Die	

AGBPF100

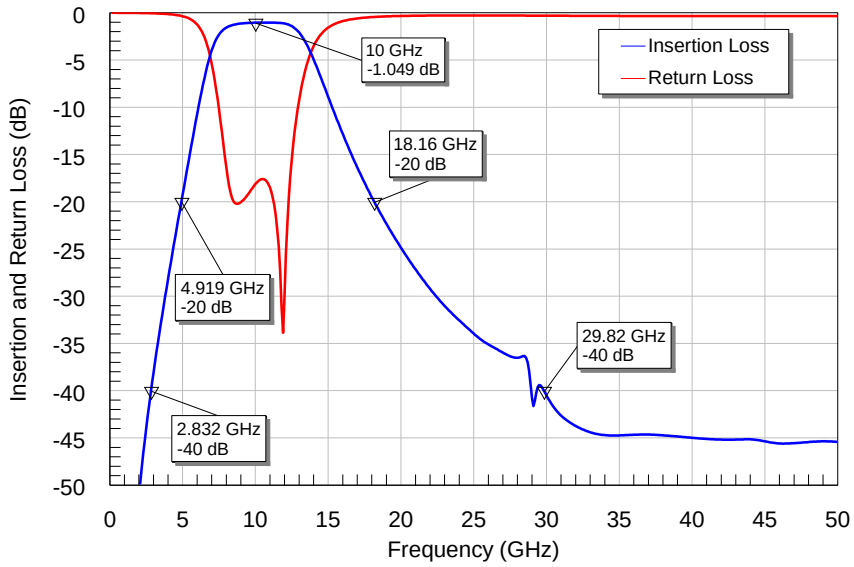
GaAs IPD MMIC
8.0GHz – 12.0GHz Bandpass Filter

Features

- Center Frequency: 10GHz
- Passband Loss: 1.05dB @ 10GHz
- Rejection: 20dB at 4.9GHz and 18.2GHz
- 50Ω Matched DC blocked RF Ports

Performance Graphs

Insertion and Return Loss (Simulated)



Electrical Specifications (TA = +25°C)

Parameter	Units	Minimum	Typical	Maximum
Frequency	GHz	8.0		12.0
Passband Loss	dB		1.05	1.57
Passband Return Loss	dB		20	
Rejection 20dB Point	GHz	4.9		18.2
Rejection 40dB Point	GHz	2.8		29.8
Package Type			Die	

AGBPF118

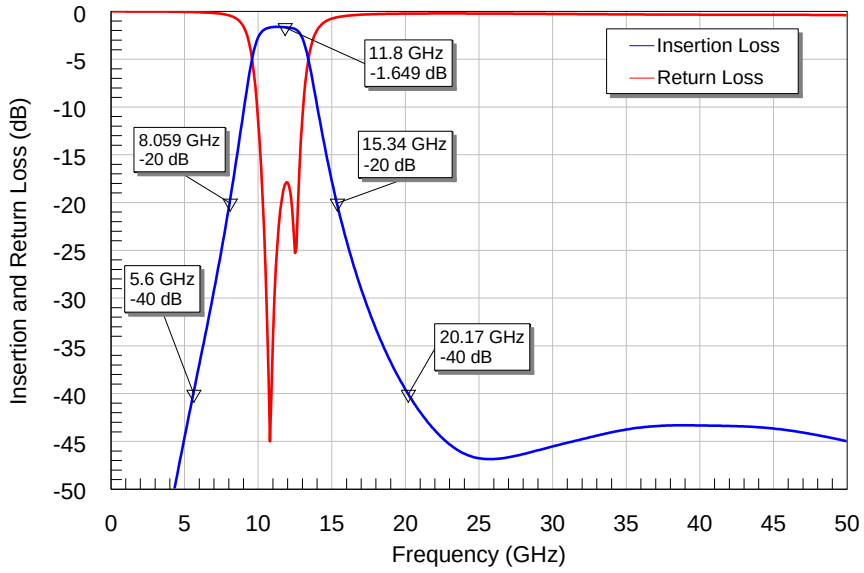
GaAs IPD MMIC
10.7GHz – 12.9GHz Bandpass Filter

Features

- Center Frequency: 11.8GHz
- Passband Loss: 1.65dB @ 11.8GHz
- Rejection: 20dB at 8.1GHz and 15.3GHz
- 50Ω Matched DC blocked RF Ports

Performance Graphs

Insertion and Return Loss (Simulated)



Electrical Specifications (TA = +25°C)

Parameter	Units	Minimum	Typical	Maximum
Frequency	GHz	10.7		12.9
Passband Loss	dB		1.65	2.47
Passband Return Loss	dB		20	
Rejection 20dB Point	GHz	8.1		15.3
Rejection 40dB Point	GHz	5.6		20.2
Package Type			Die	

AGBPF150

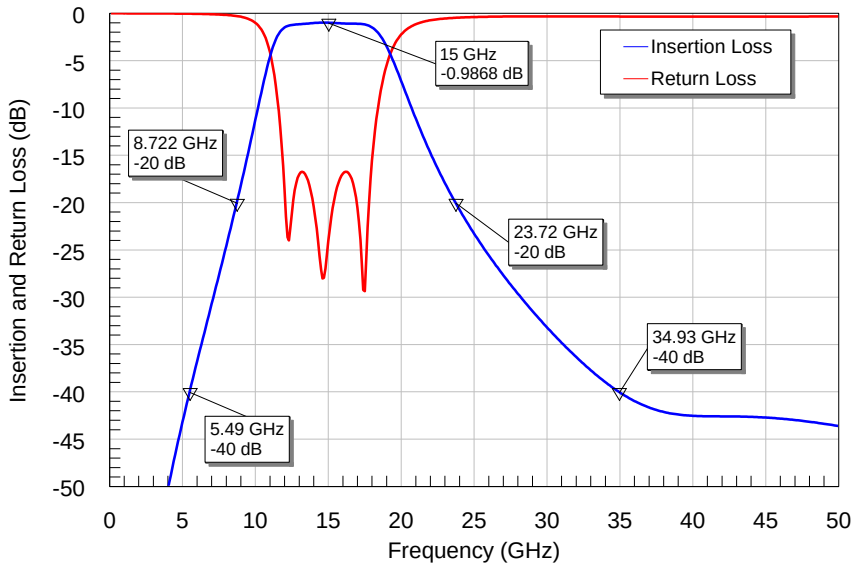
GaAs IPD MMIC
12.0GHz – 18.0GHz Bandpass Filter

Features

- Center Frequency: 15GHz
- Passband Loss: 0.99dB @ 15GHz
- Rejection: 20dB at 8.7GHz and 23.7GHz
- 50Ω Matched DC blocked RF Ports

Performance Graphs

Insertion and Return Loss (Simulated)



Electrical Specifications (TA = +25°C)

Parameter	Units	Minimum	Typical	Maximum
Frequency	GHz	12.0		18.0
Passband Loss	dB		0.99	1.49
Passband Return Loss	dB		20	
Rejection 20dB Point	GHz	8.7		23.7
Rejection 40dB Point	GHz	5.5		34.9
Package Type			Die	

AGBPF195

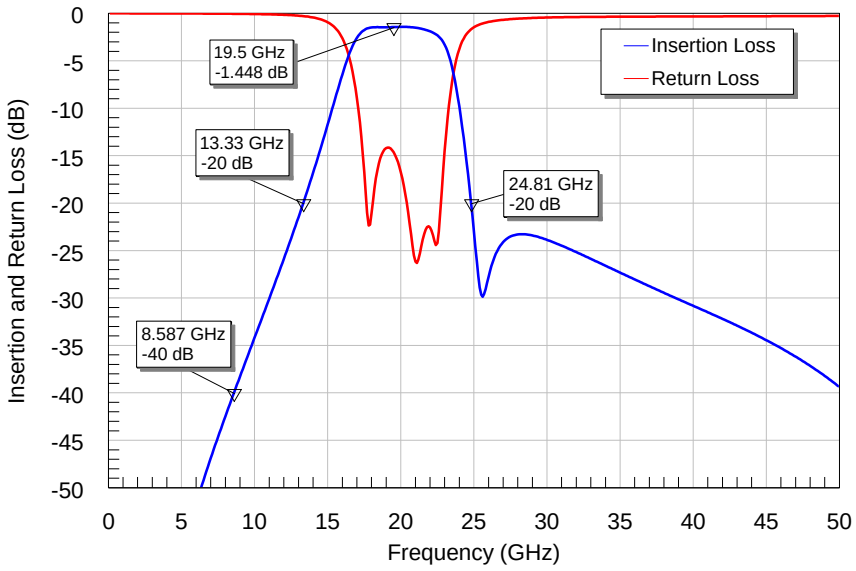
GaAs IPD MMIC
17.7GHz – 21.2GHz Bandpass Filter

Features

- Center Frequency: 19.5GHz
- Passband Loss: 1.45 @ 19.5GHz
- Rejection: 20dB at 13.3GHz and 24.8GHz
- 50Ω Matched DC blocked RF Ports

Performance Graphs

Insertion and Return Loss (Simulated)



Electrical Specifications (TA = +25°C)

Parameter	Units	Minimum	Typical	Maximum
Frequency	GHz	17.7		21.2
Passband Loss	dB		1.45	1.60
Passband Return Loss	dB		18	
Rejection 20dB Point	GHz	13.3		24.8
Rejection 40dB Point	GHz	8.6		–
Package Type			Die	

AGBPF263

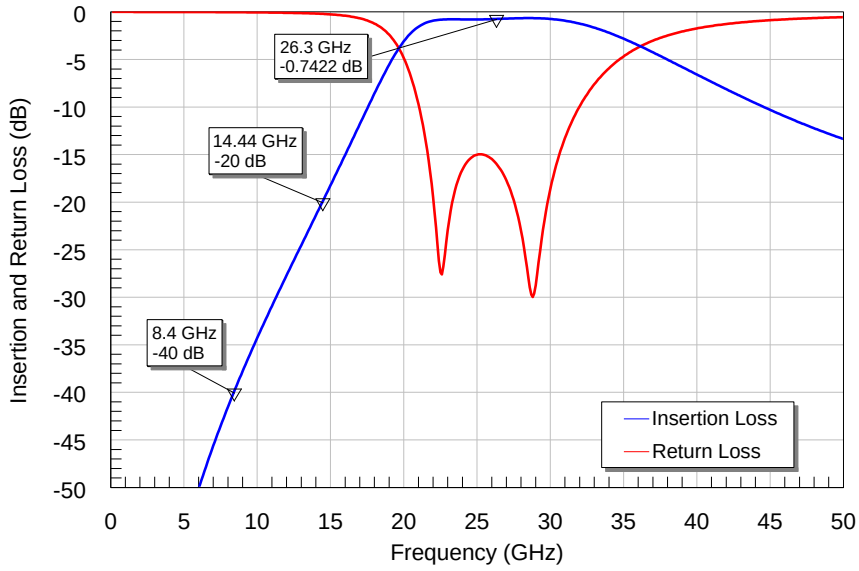
GaAs IPD MMIC
20.5GHz – 32.0GHz Bandpass Filter

Features

- Center Frequency: 26.3GHz
- Passband Loss: 0.74dB @ 26.3GHz
- Rejection: 20dB at 14.4GHz
- 50Ω Matched DC blocked RF Ports

Performance Graphs

Insertion and Return Loss (Simulated)



Electrical Specifications (TA = +25°C)

Parameter	Units	Minimum	Typical	Maximum
Frequency	**GHz**	**20.5**		**32.0**
Passband Loss	**dB**		**0.74**	**2.20**
Passband Return Loss	**dB**		**20**	
Rejection 20dB Point	**GHz**	**14.4**		**–**
Rejection 40dB Point	**GHz**	**8.4**		**–**
Package Type			**Die**	

AGBPF295

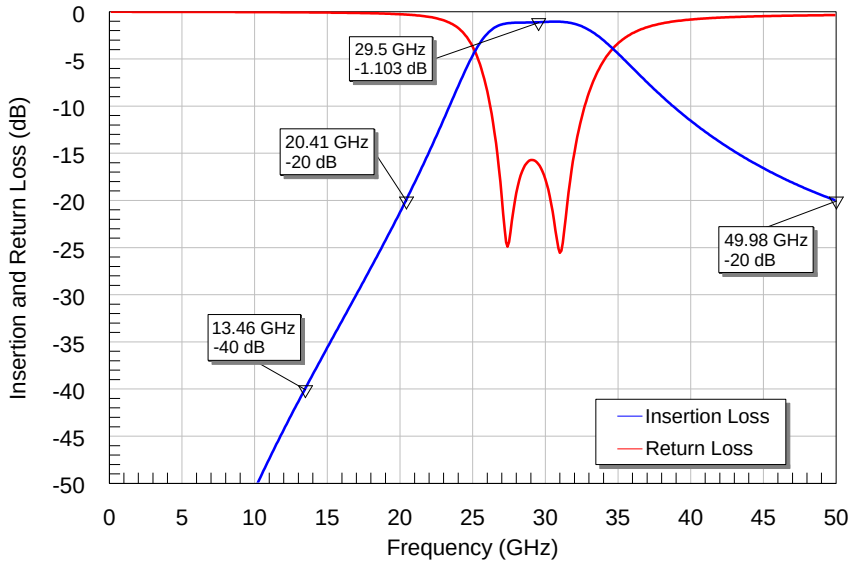
GaAs IPD MMIC
27.0GHz – 32.0GHz Bandpass Filter

Features

- Center Frequency: 29.5GHz
- Passband Loss: 1.10dB @ 29.5GHz
- Rejection: 20dB at 20.4GHz and 50.0GHz
- 50Ω Matched DC blocked RF Ports

Performance Graphs

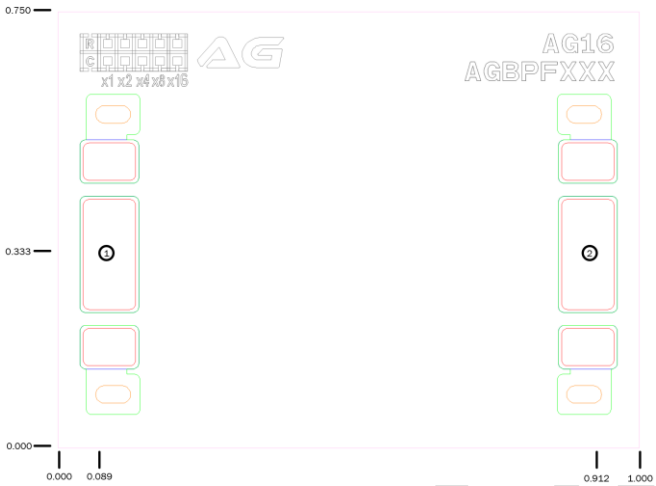
Insertion and Return Loss (Simulated)



Electrical Specifications (TA = +25°C)

Parameter	Units	Minimum	Typical	Maximum
Frequency	GHz	27.0		32.0
Passband Loss	dB		1.10	1.34
Passband Return Loss	dB		20	
Rejection 20dB Point	GHz	20.4		50.0
Rejection 40dB Point	GHz	13.5		–
Package Type			Die	

Outline Drawing (dimensions in mm)



Pad Descriptions

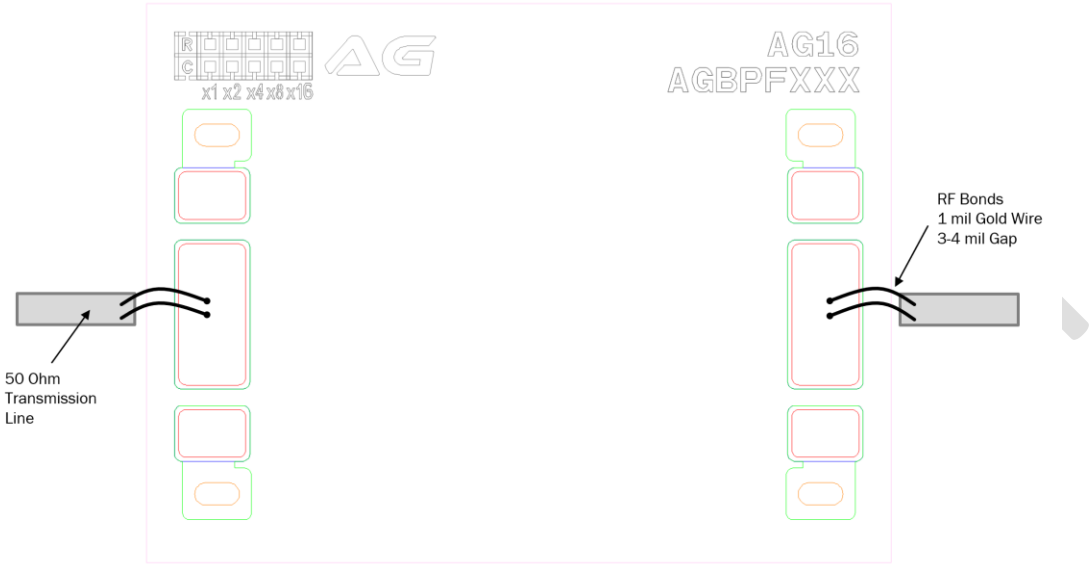
Pad	Function	Pad Size	Description
1	RFIN	101x200µm	AC coupled 50Ω Matched
2	RFOUT	101x200µm	AC coupled 50Ω Matched
Die Bottom	GND	Backside	Epoxy/Solder to Baseplate

Absolute Maximum Ratings

Parameter	Rating
Drain Bias Voltage (VDD)	No Bias
RF Input Power (RFIN)	+20dBm*
Channel Temperature	150°C
Storage Temperature	-65 to 150°C
Operating Temperature	-55 to 85°C

*To be tested

Assembly Diagrams



Assembly Notes:

1. Die Thickness is 100µm
2. Bondpad metallization: 7µm gold
3. Backside metallization: 4.5µm gold
4. Silver Epoxy or AuSn Eutectic attach MMIC

Die Packaging Information

- GP-4 (Gel-Pak)