AGBPFxxx

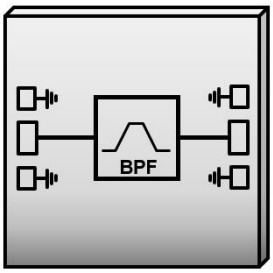
GaAs MMIC
Bandpass Filter Series

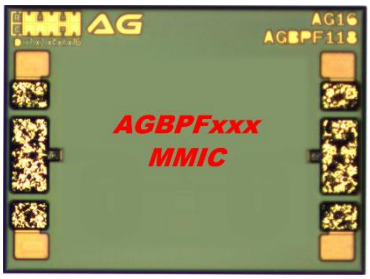
Typical Applications

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

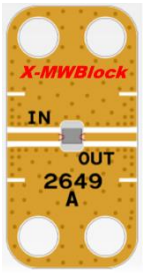
Series Features

- Bandpass Filters covering S-Band to Ka-Band
- Die Size: 1.00 x 0.75 x 0.1 mm; Matches AGATNxx, AGLPFxxx, AGBSFxxx, and AGTRMxxx series MMICs
- X-MWblocks available for some Filters









AGBPFxxx Series Parts

MMIC Die	In-Line Coaxial	X-MWblock	Description	Page No.
AGBPF022			2.1GHz – 2.3GHz BPF	2
AGBPF023			2.0GHz – 2.4GHz BPF	3
AGBPF024			1.7GHz – 2.7GHz BPF	4
AGBPF063			3.6GHz – 9.0GHz BPF	5
AGBPF078		XM-D6B5-0204D	7.1GHz – 8.5GHz BPF	6
AGBPF100			8.0GHz – 12.0GHz BPF	7
AGBPF118			10.7GHz – 12.9GHz BPF	8
AGBPF150			12.0GHz – 18.0GHz BPF	9
AGBPF195	APTX-17522145-BPF-X1001	XM-D512-0204D	17.7GHz – 21.2GHz BPF	10
AGBPF263			20.5GHz – 32.0GHz BPF	11
AGBPF295			27.0GHz – 32.0GHz BPF	12

AGBPF022

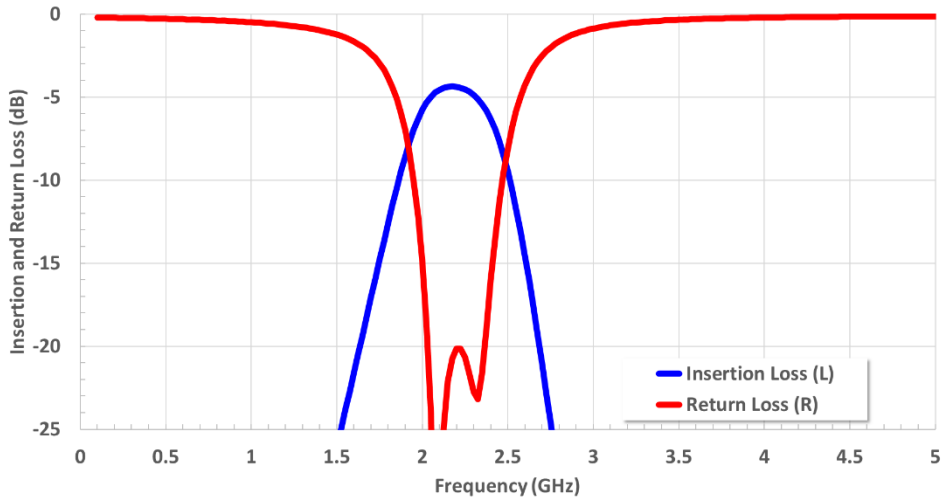
GaAs MMIC
2.1GHz – 2.3GHz Bandpass Filter

Features

- Center Frequency: 2.18GHz
- Passband Loss: 4.35dB @ 2.18GHz
- Rejection: 20dB at 1.6GHz and 2.7GHz
- 50Ω Matched DC coupled RF Ports

Performance Graphs

Insertion and Return Loss (Measured)



Electrical Specifications (TA = +25°C)

Parameter	Units	Minimum	Typical	Maximum
Frequency	GHz	2.1		2.3
Passband Loss	dB		4.35	4.85
Passband Return Loss	dB		20	
Rejection 20dB Point	GHz	1.6		2.7
Rejection 40dB Point	GHz	1.2		5.4
Package Type			Die	

AGBPF023

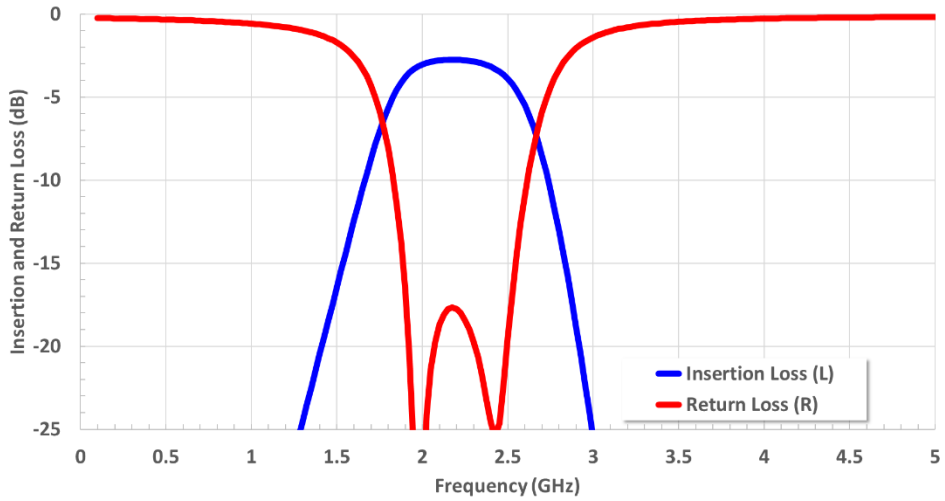
GaAs MMIC
2.0GHz – 2.4GHz Bandpass Filter

Features

- Center Frequency: 2.18GHz
- Passband Loss: 2.74dB @ 2.18GHz
- Rejection: 20dB at 1.4GHz and 2.9GHz
- 50Ω Matched DC coupled RF Ports

Performance Graphs

Insertion and Return Loss (Measured)



Electrical Specifications (TA = +25°C)

Parameter	Units	Minimum	Typical	Maximum
Frequency	GHz	2.0		2.4
Passband Loss	dB		2.74	3.24
Passband Return Loss	dB		20	
Rejection 20dB Point	GHz	1.4		2.9
Rejection 40dB Point	GHz	1.0		7.5
Package Type			Die	

AGBPF024

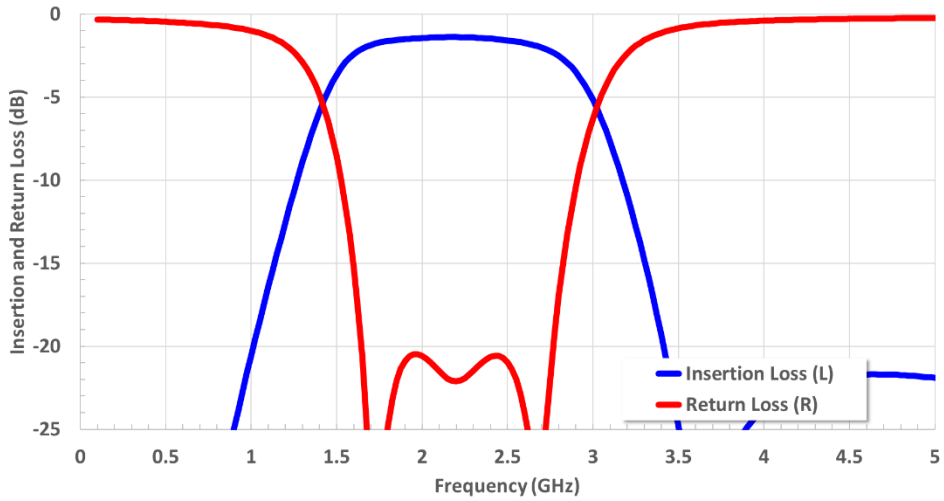
GaAs MMIC
1.7GHz – 2.7GHz Bandpass Filter

Features

- Center Frequency: 2.18GHz
- Passband Loss: 1.39dB @ 2.18GHz
- Rejection: 20dB at 1.0GHz and 3.4GHz
- 50Ω Matched DC coupled RF Ports

Performance Graphs

Insertion and Return Loss (Measured)



Electrical Specifications (TA = +25°C)

Parameter	Units	Minimum	Typical	Maximum
Frequency	GHz	1.7		2.7
Passband Loss	dB		1.39	1.89
Passband Return Loss	dB		20	
Rejection 20dB Point	GHz	1.0		3.4
Rejection 40dB Point	GHz	0.6		11.9
Package Type			Die	

AGBPF063

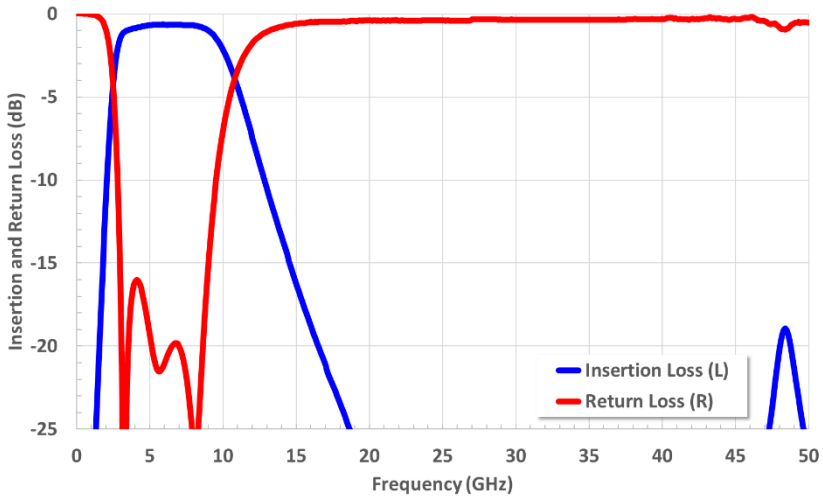
GaAs MMIC
3.6GHz – 9.0GHz Bandpass Filter

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 (Measured)



Electrical Specifications (TA = +25°C)

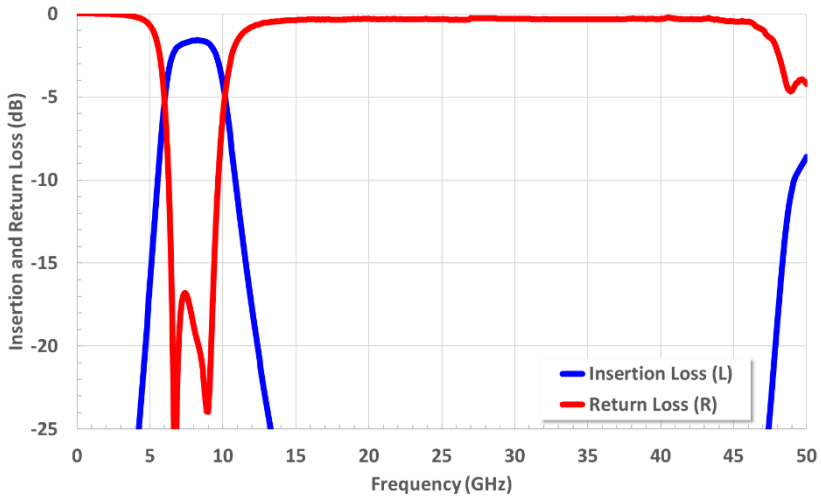
Parameter	Units	Minimum	Typical	Maximum
Frequency	GHz	3.6		9.0
Passband Loss	dB		0.57	0.85
Passband Return Loss	dB		18	
Rejection 20dB Point	GHz	1.6		16.8
Rejection 40dB Point	GHz	0.8		34.1
Package Type			Die	

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 (Measured)



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

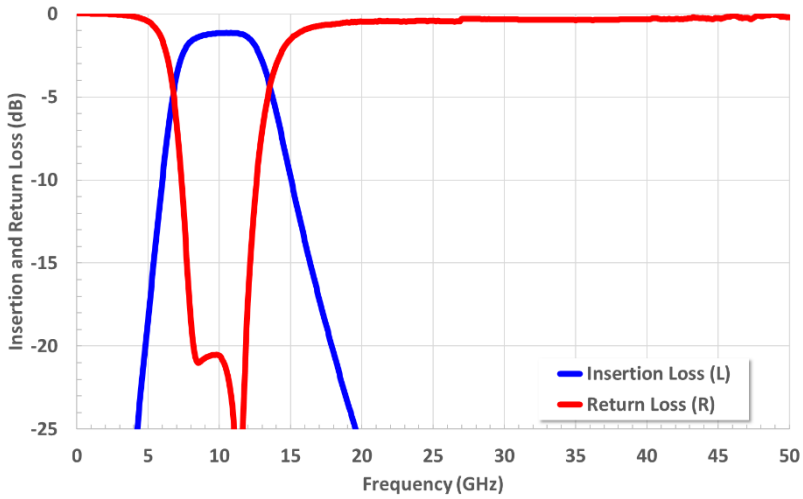
GaAs MMIC
8.0GHz – 12.0GHz Bandpass Filter

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 (Measured)



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

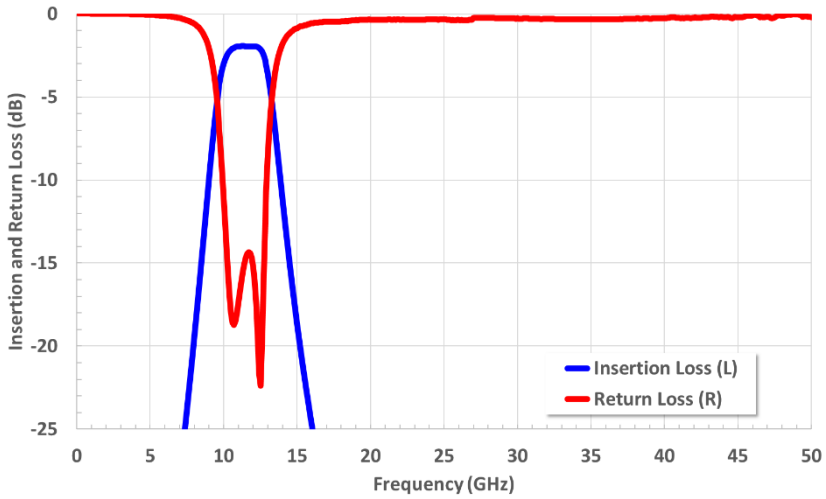
GaAs MMIC
10.7GHz – 12.9GHz Bandpass Filter

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 (Measured)



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

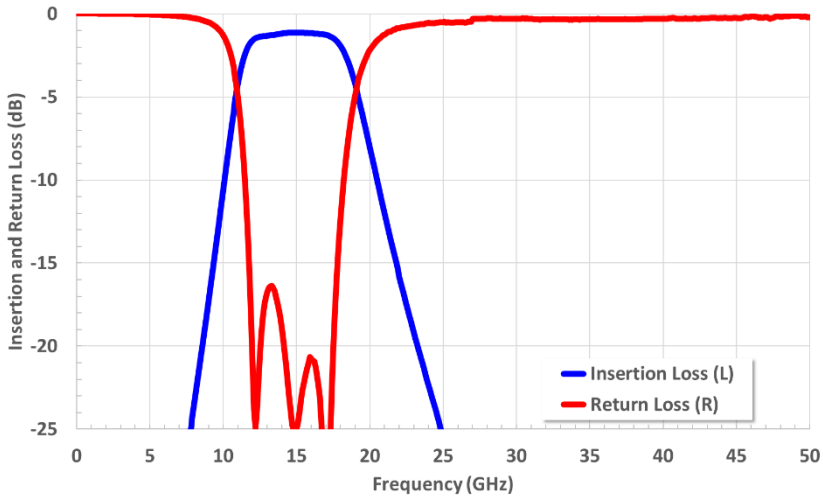
GaAs MMIC
12.0GHz – 18.0GHz Bandpass Filter

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 (Measured)



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

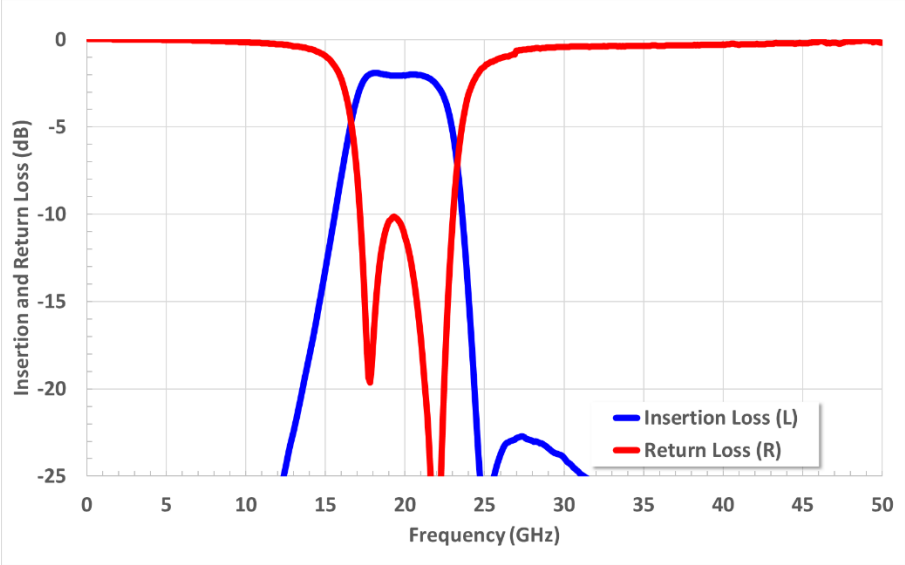
GaAs MMIC
17.7GHz – 21.2GHz Bandpass Filter

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 (Measured)



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

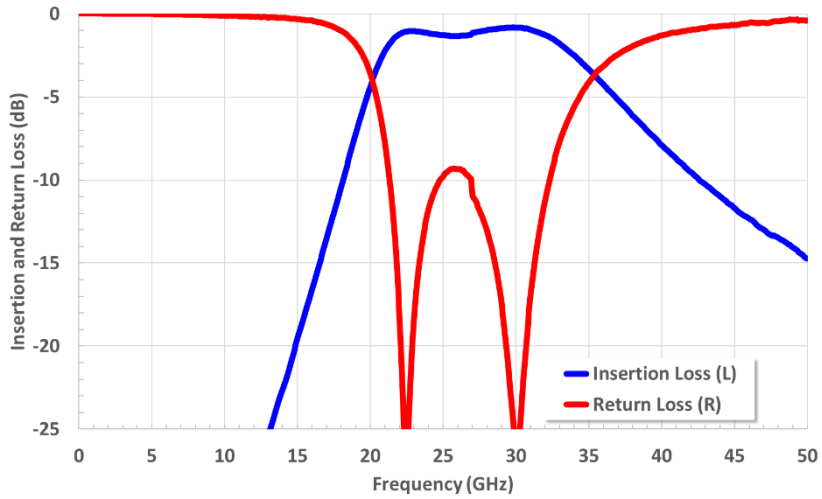
GaAs MMIC
20.5GHz – 32.0GHz Bandpass Filter

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 (Measured)



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

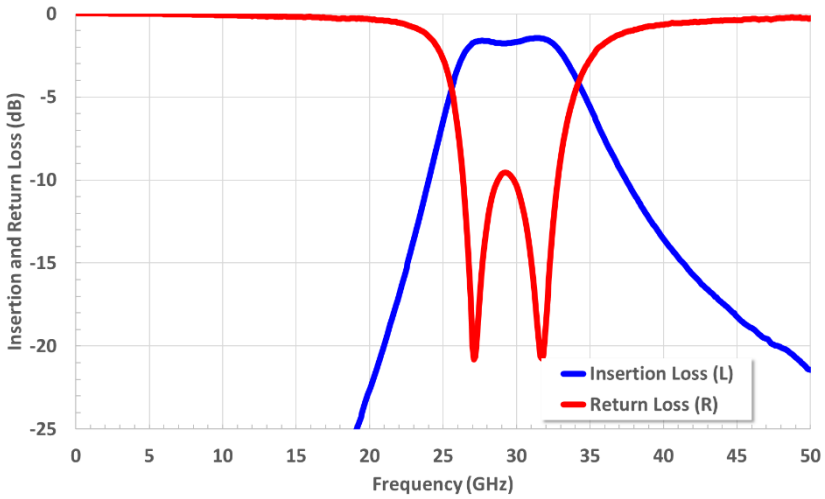
GaAs MMIC
27.0GHz – 32.0GHz Bandpass Filter

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

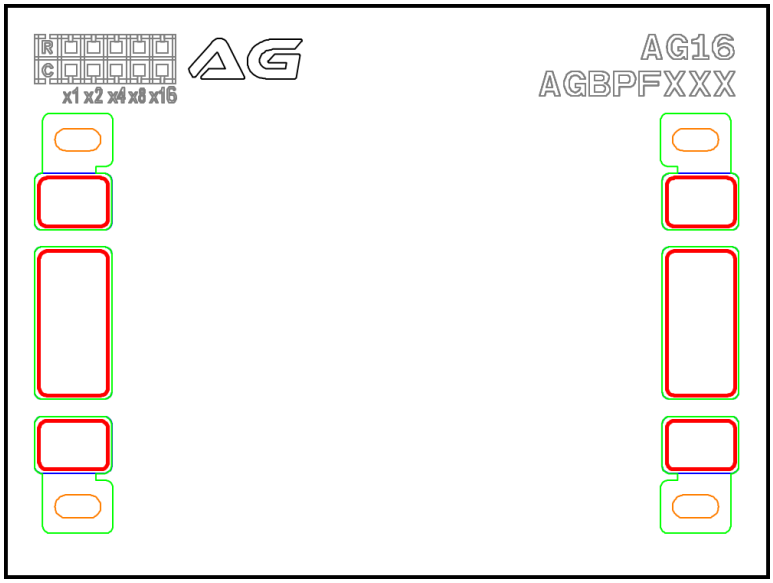
Insertion and Return Loss (Measured)



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



Pad Descriptions

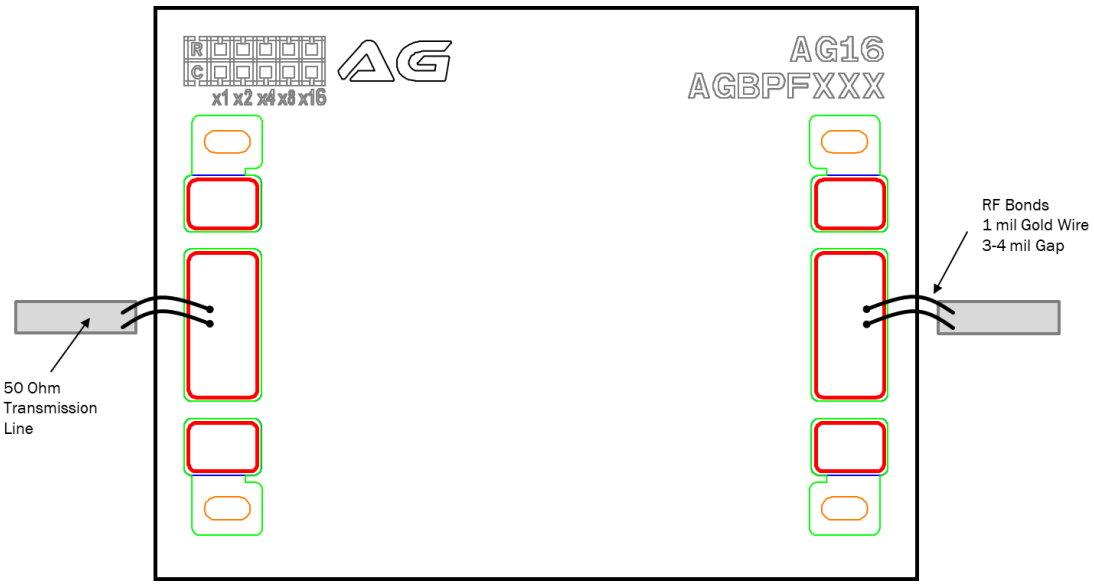
Pad	Function	Pad Size	Description
1	RFIN	101x200µm	AC coupled 50Ω Matched
2	RFOUT	101x200µm	AC coupled 50Ω Matched
Die Bottom	GND	Backside	Epoxy/Solder to Baseplate

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 Diagram



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)

Important Notice

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