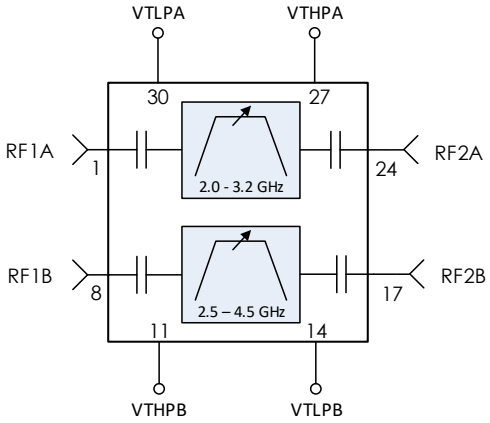
AM3134 – Analog Tunable Filter

Dual 2.0 to 3.2 and 2.5 to 4.5 GHz Bandpass

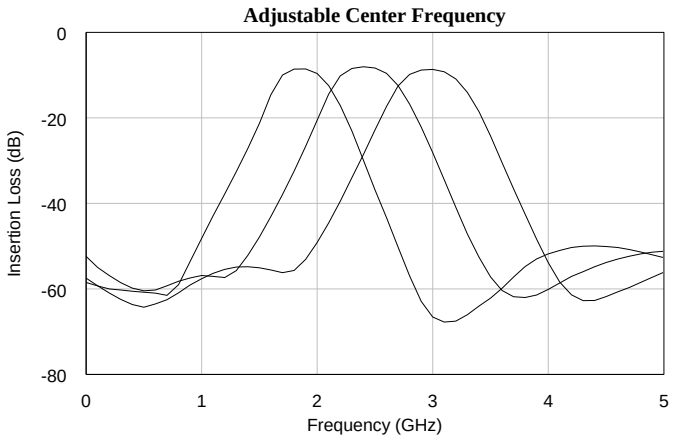
AM3134 is a dual MMIC analog voltage-tunable bandpass filter covering the 2.0 to 3.2 GHz and 2.5 to 4.5 GHz frequency ranges. Separate low-pass and high-pass tuning voltages provide independent control of both center frequency and bandwidth. AM3134 is packaged in a 5mm QFN package and operates over the -40 C to +85 C temperature range.



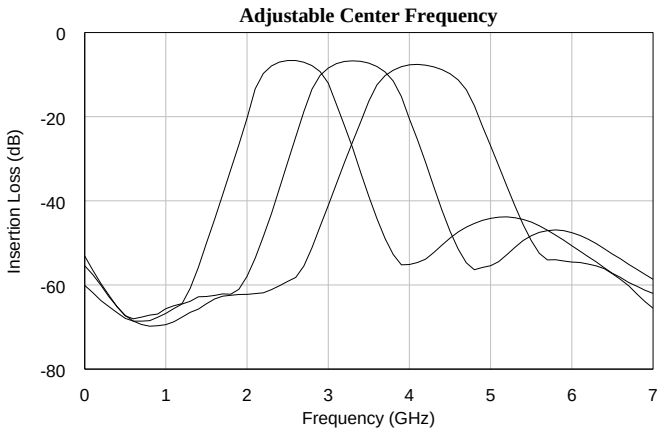
Features

- Analog Tuning
- Independent LP and HP Control
- +40 dBm Typical IIP3
- 5 mm QFN Package
- -40C to +85C Operation
- +1V to +10V Tuning Voltage

Typical Performance 2.0 to 3.2 GHz



Typical Performance 2.5 to 4.5 GHz



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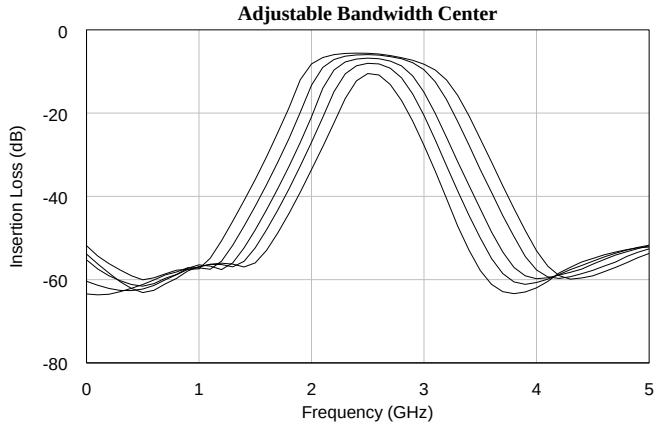
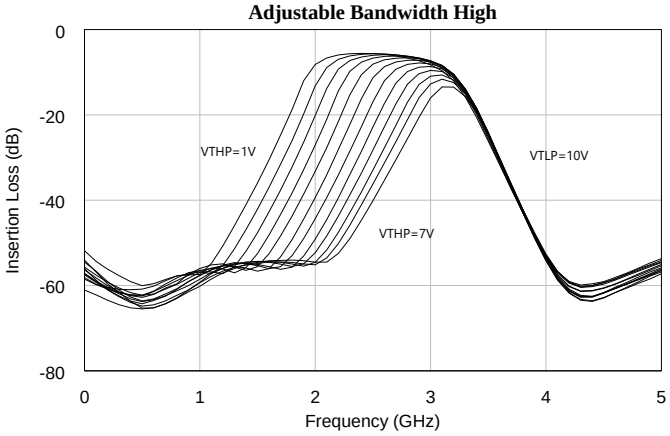
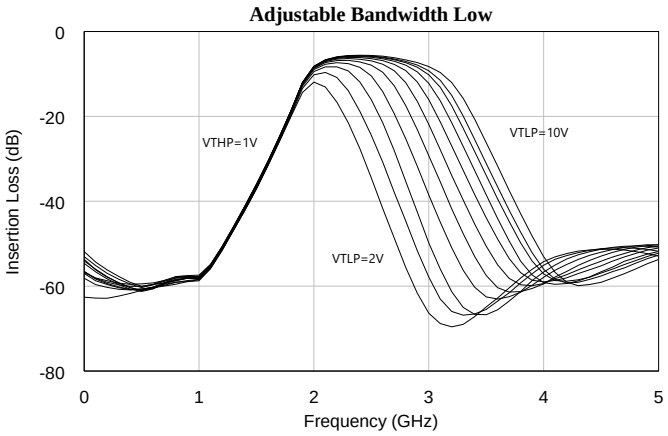
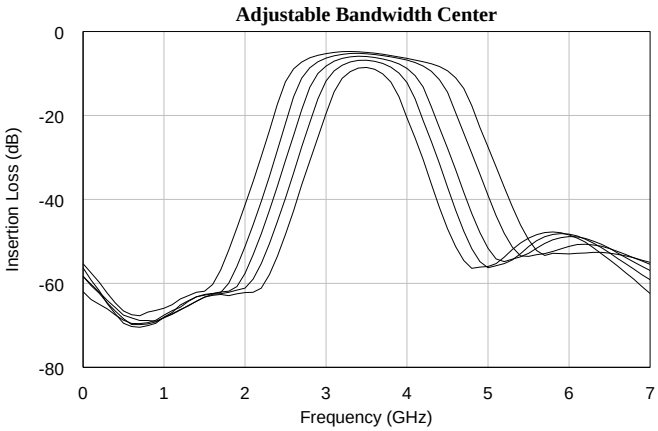
Typical Performance 2.0 to 3.2 GHz

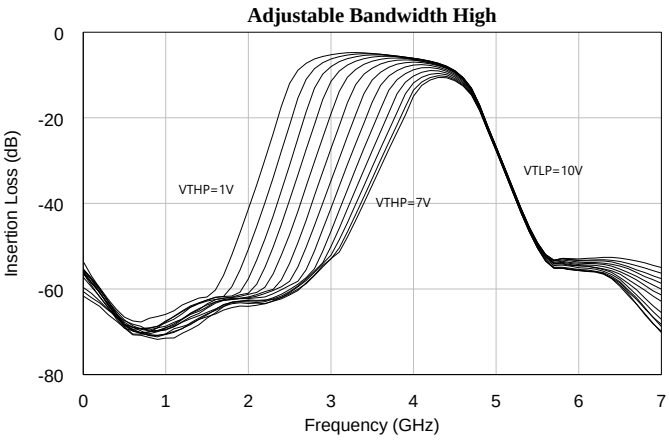


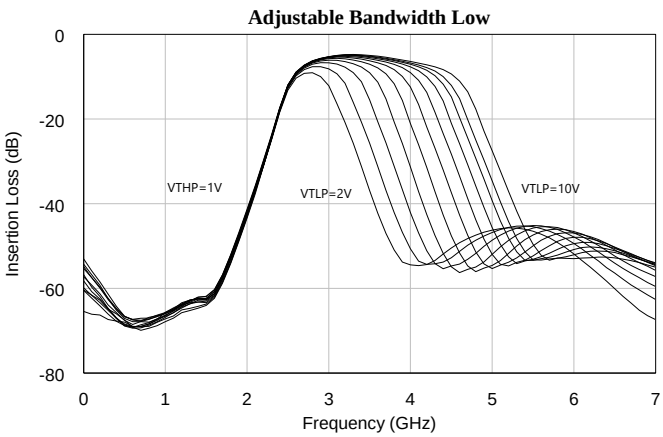




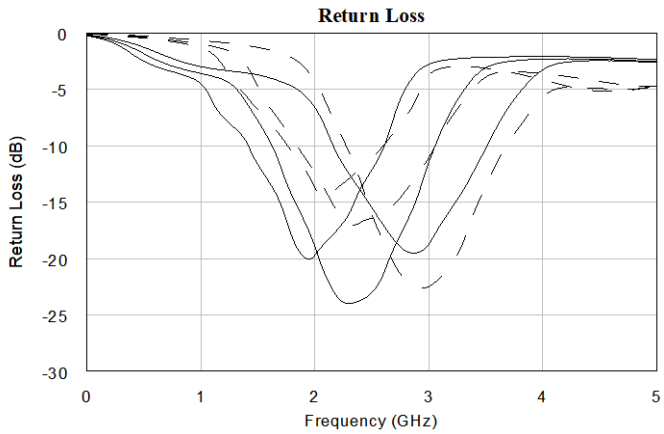
Typical Performance 2.5 to 4.5 GHz

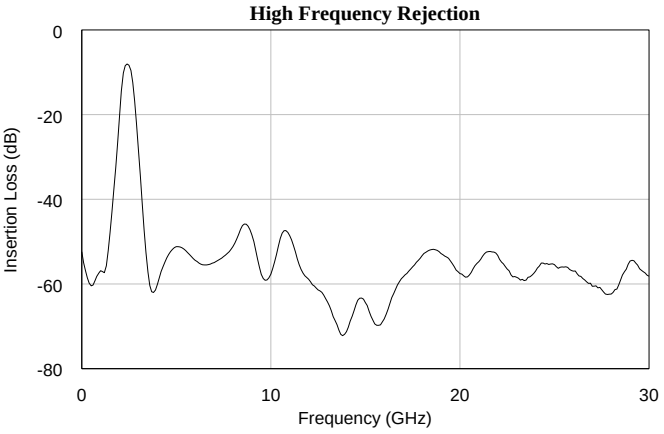




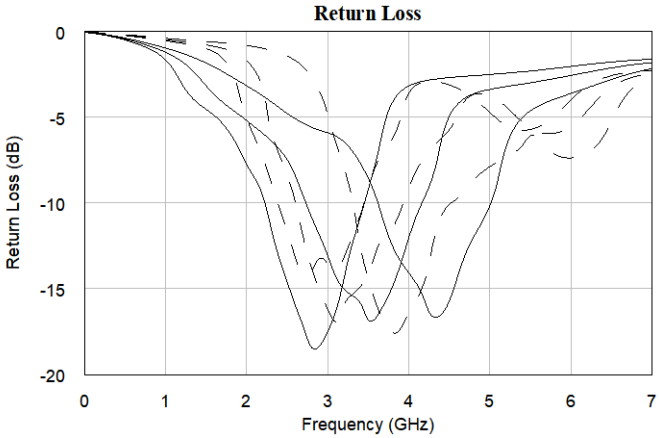


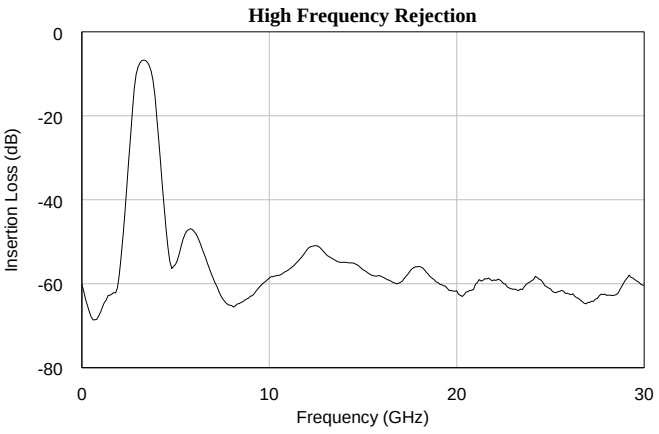
Typical Performance 2.0 to 3.2 GHz



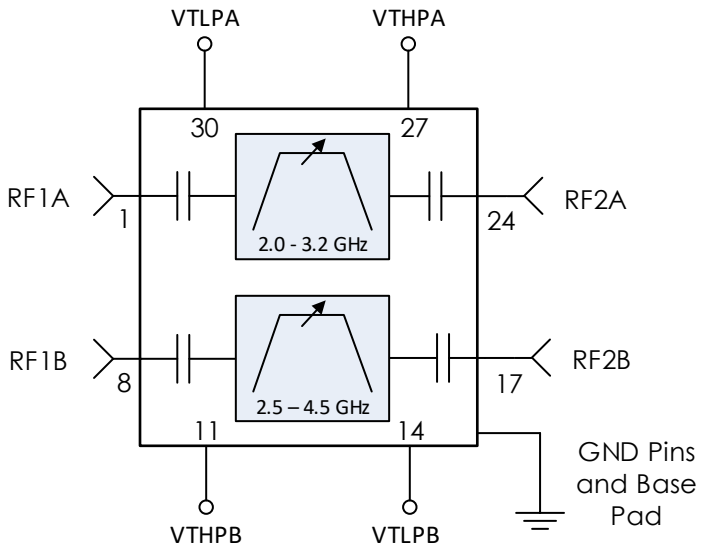


Typical Performance 2.5 to 4.5 GHz





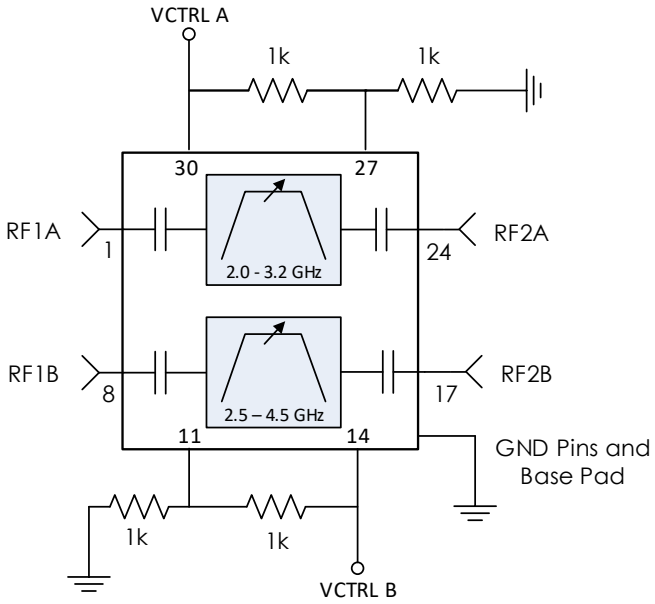
Typical Application Circuit



Notes:

1. RC filtering on the control lines is recommended to prevent digital noise from coupling to the RF path. Select control line RC filter values based on desired logic source decoupling and switching speed.

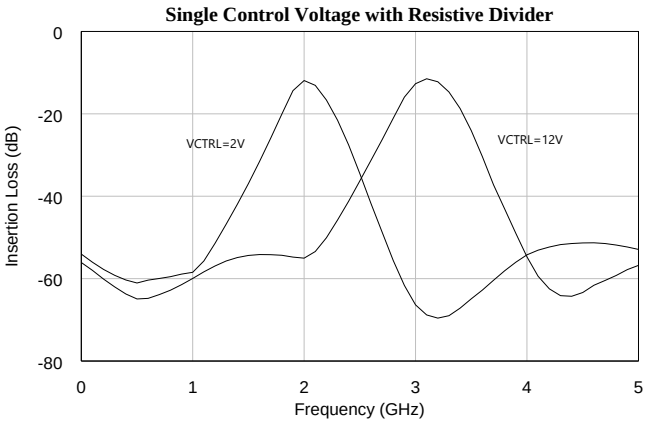
Alternate Application Circuit – Single Control Voltage



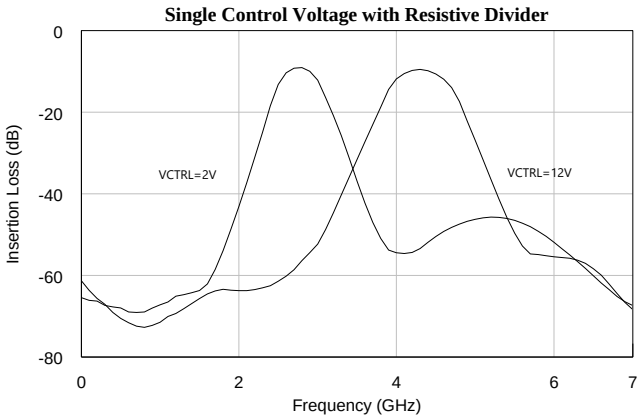
Notes:

1. The resistive dividers between pins 11 and 14 and 27 and 30 exist to normalize percentage bandwidth over the full 0-12 V range. Tying both pins to the same control voltage without the divider is possible, but the bandwidth will be narrower with higher insertion loss over the tuning range.

2.0 to 3.2 GHz Single Control Voltage:



2.5 to 4.5 GHz Single Control Voltage:



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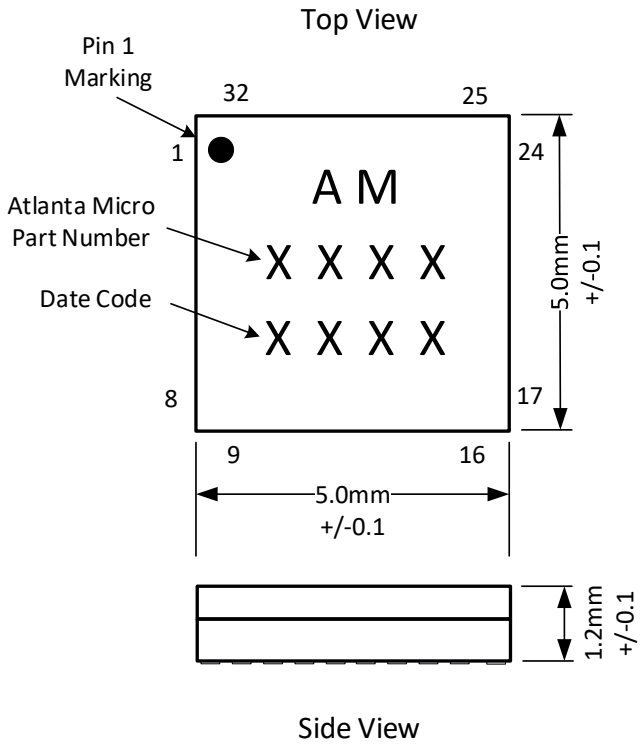
Pin Definitions – 32 pin 5mm QFN package

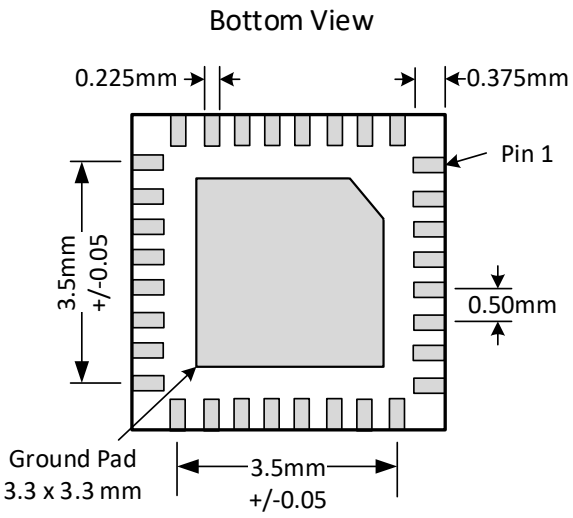
Pin Number	Name	Function
1	RF1A	RF Port 1 – 2.0-3.2 GHz, 50 ohms, AC coupled.
2-7	GND	Ground – Common
8	RF1B	RF Port 1 – 2.5-4.5 GHz, 50 ohms, AC coupled.
9-10	GND	Ground – Common
11	VTHPB	2.5-4.5 GHz High Pass DC Voltage Control
12-13	GND	Ground – Common
14	VTLPB	2.5-4.5 GHz Low Pass DC Voltage Control
15-16	GND	Ground – Common
17	RF2B	RF Port 2 – 2.5-4.5 GHz, 50 ohms, AC coupled.
18-23	GND	Ground – Common
24	RF2A	RF Port 2 – 2.0-3.2 GHz, 50 ohms, AC coupled.
27	VTHPA	2.0-3.2 GHz High Pass DC Voltage Control
28,29	GND	Ground – Common
30	VTLPA	2.0-3.2 GHz Low Pass DC Voltage Control
31-32	GND	Ground - Common

Specifications

Specifications	Minimum	Typical	Maximum
Frequency Range 1	2.0 GHz		3.2 GHz
Frequency Range 2	2.5 GHz		4.5 GHz
Insertion Loss		9 dB	
Input IP3, Wide Bandwidth		+40 dBm	
Input IP3, Narrow Bandwidth		+39 dBm	
Input P1dB		+25 dBm	
RF Input Level			+27 dBm
Package Size		5.0 x 5.0 x 1.2mm	
DC Control Voltage	+0 V	-----	+12.0V
DC Control Current		<1 mA	
Operating Temperature	-40 C		+85 C
Storage Temperature	-50 C		+125 C

Package Details





Notes:
1. All dimensions shown are in mm
2. Package material: LCP
3. Lead finish: Ni/Pd/Au