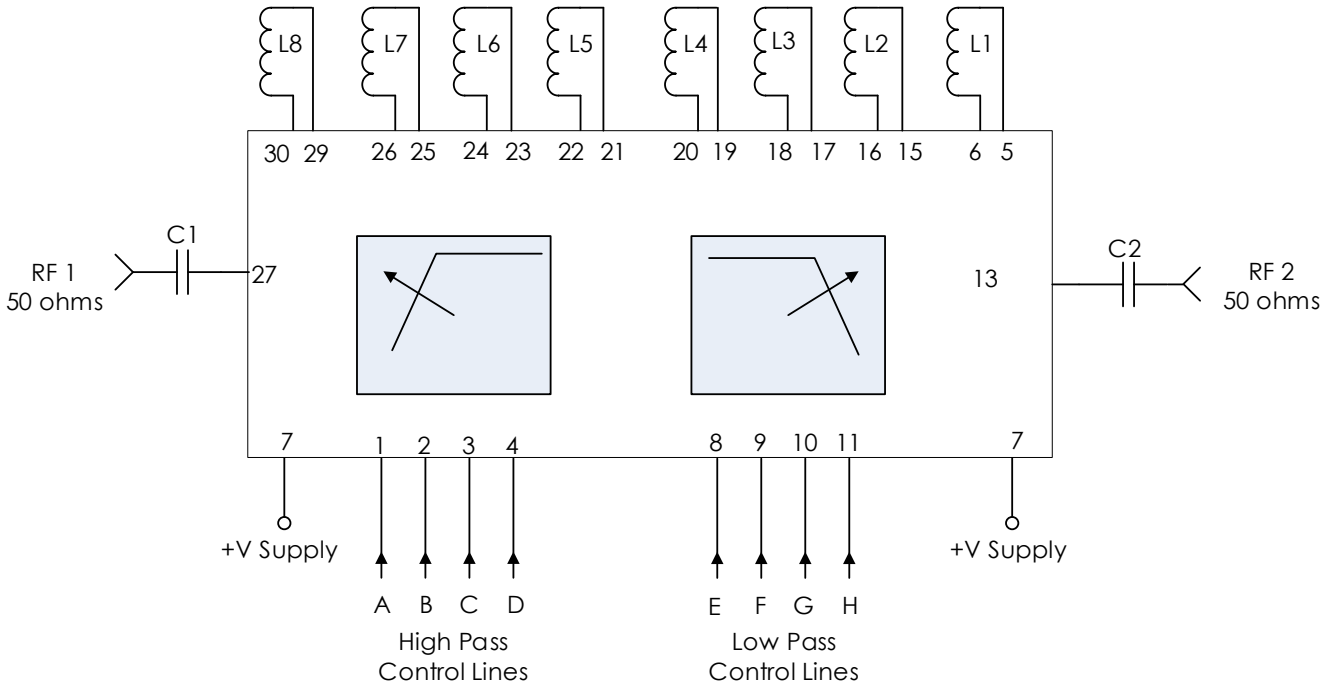
AM3102 Application Note

Digitally Tunable Bandpass

Typical Application

Digitally Tunable BPF 330 MHz – 1200 MHz



Recommended Component List (or equivalent):

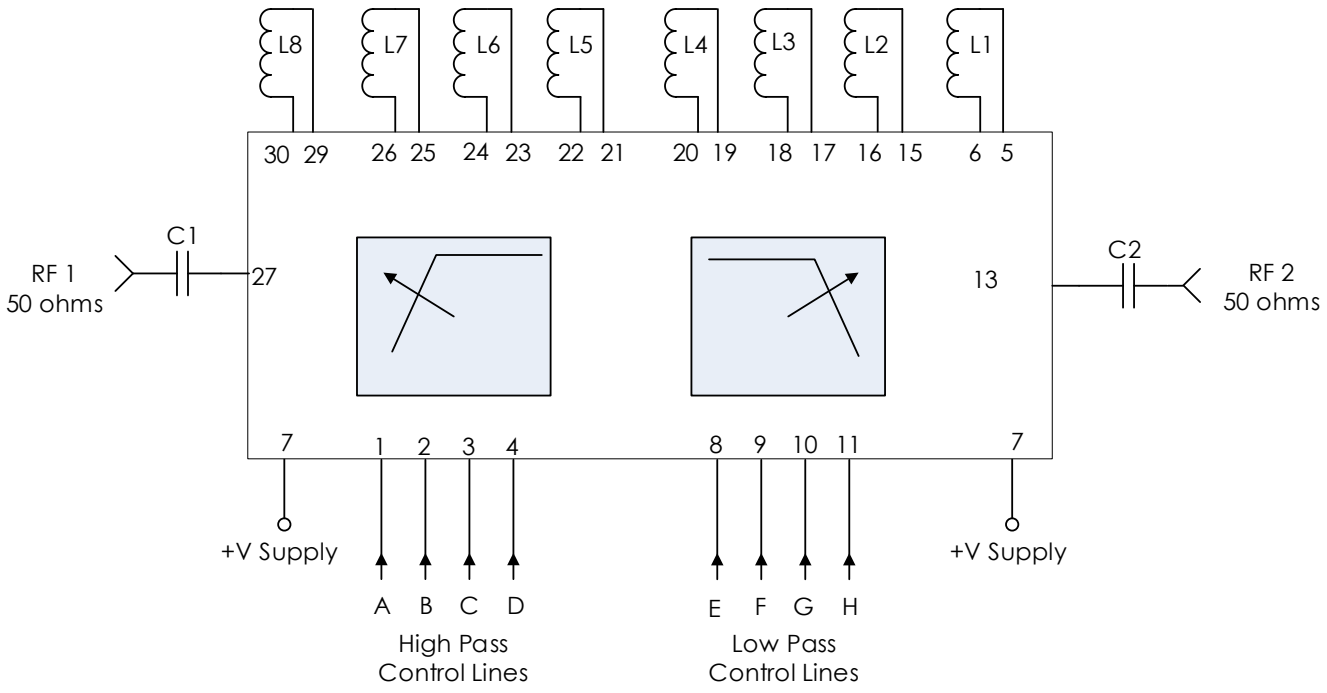
Part	Value	Part Number	Manufacturer
C1, C2	0.1µF	0402BB104KW160	Passive Plus
L1, L8	13 nH	0402HP-13NXGLW	Coilcraft
L2, L5	6.2 nH	0402HP-6N2XGLW	Coilcraft
L3, L4	6.8 nH	0402HP-6N8XGLW	Coilcraft
L6, L7	9.0 nH	0402HP-9N0XGLW	Coilcraft

Notes:

1. DC blocking capacitors should be low-loss, broadband capacitors for optimum performance
2. Routes to off-chip inductors, L1 through L8, should be kept as short as possible.
3. VDD and control lines filtered internally providing high frequency isolation to 50 + GHz.
    a. See AM35 datasheet for more information.

Typical Application (continued)

Digitally Tunable BPF 450 MHz – 1500 MHz



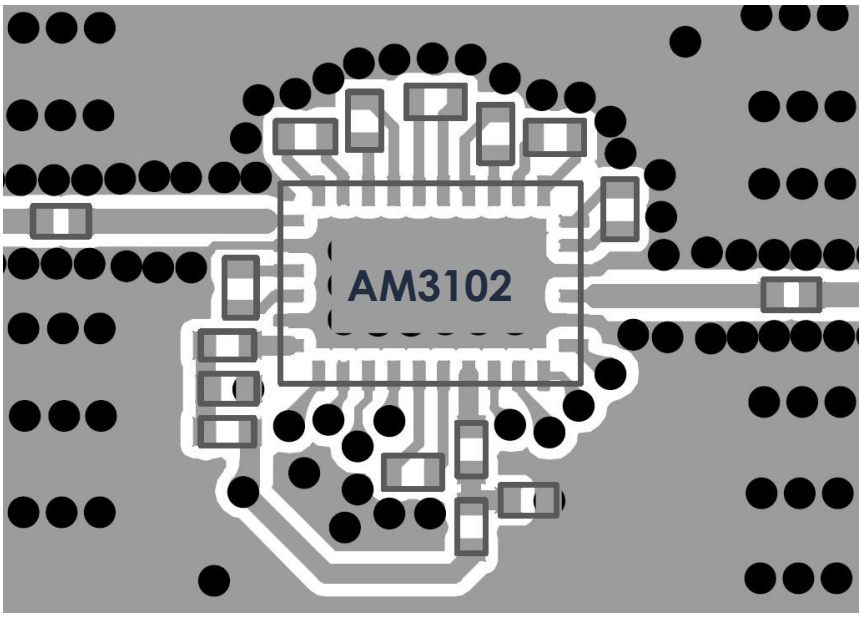
Recommended Component List (or equivalent):

Part	Value	Part Number	Manufacturer
C1, C2	0.1µF	0402BB104KW160	Passive Plus
L1, L8	9.5 nH	0402HP-9N5XGLW	Coilcraft
L2, L5	2.2 nH	0402HP-2N2XJLW	Coilcraft
L3, L4	2.7 nH	0402HP-2N7XGLW	Coilcraft
L6, L7	5.6 nH	0402HP-5N6XGLW	Coilcraft

Notes:

4. DC blocking capacitors should be low-loss, broadband capacitors for optimum performance
5. Routes to off-chip inductors, L1 through L8, should be kept as short as possible.
6. VDD and control lines filtered internally providing high frequency isolation to 50 + GHz.
    a. See AM35 datasheet for more information.

Recommended Layout



Notes:

1. Power line filtering is made symmetric here such that it is L – C – L filtering. L – C filtering may be used if space is critical.
2. Recommended input trace is grounded coplanar waveguide, 50 ohms.
3. IC and RF inputs / outputs should be via fenced.
4. Vias should be placed under IC and GND pads (not shown).
5. Vias shown are 10mil hole size with 24mil pad.
6. Inductors are to be as close as possible to the IC.

Revision History

Date	Revision Number	Notes
May 21, 2020	1	Initial Release