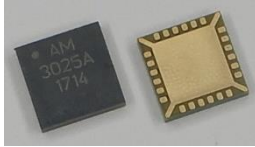


AM3025A – Filter Bank

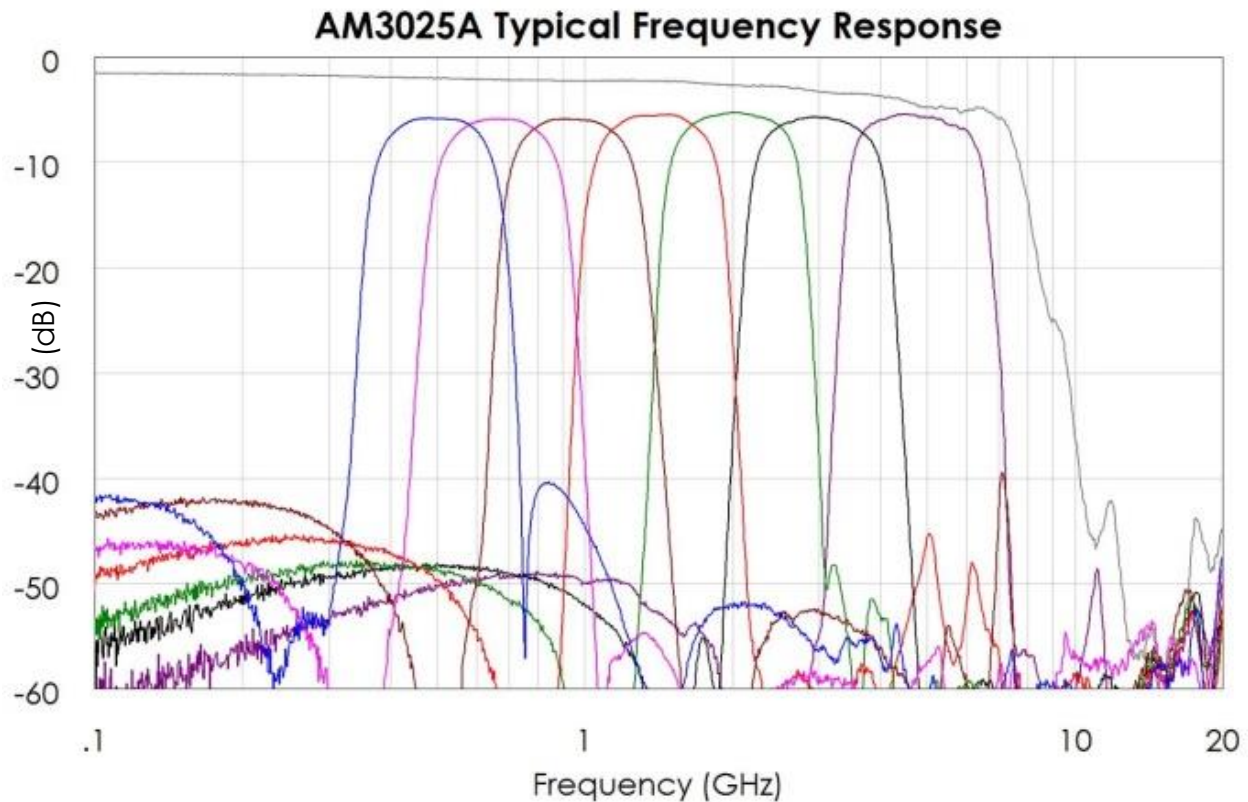
Miniature Transmit/ Receive with Sub-Octave Filtering



AM3025A is a miniature filter bank with 7 sub-octave filters covering the 400 MHz to 6000 MHz frequency range with full 80-MHz overlap in a 9mm QFN package. The device provides ports for a filter bypass path and supports both transmit and receive applications. AM3025A is an excellent front-end/ back-end for a broadband receiver, transmitter or transceiver requiring high dynamic range and small size, weight and power consumption.

Features

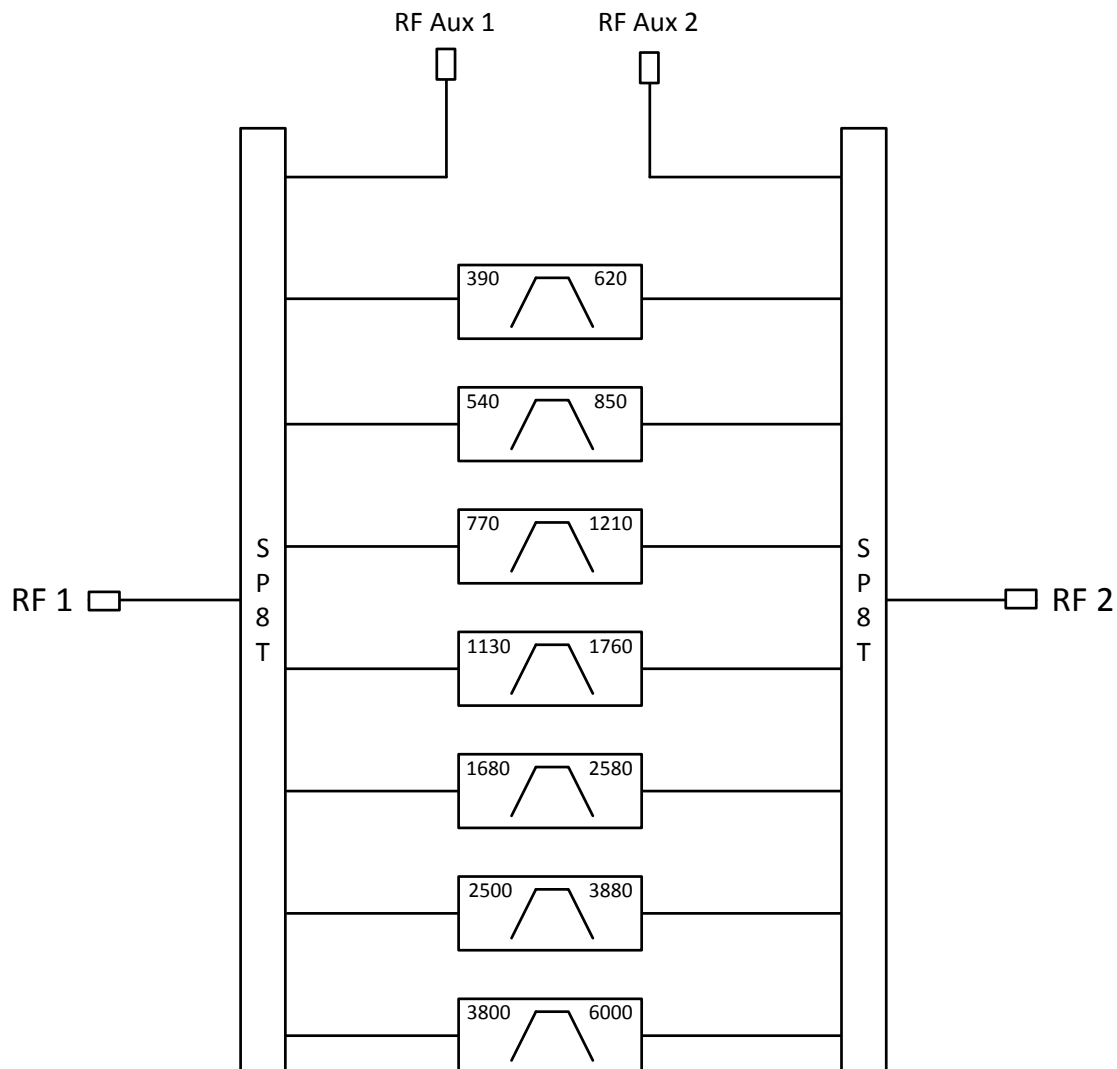
- Sub-Octave Filter Bank
- 6 dB Insertion Loss
- +3.3V or +5V DC Supply
- 0.09 Watts Power Consumption
- 9mm QFN Package
- -40C to +85C Operation



AM3025A – Filter Bank

Miniature Sub-Octave

Functional Diagram



Functional Diagram Notes

1. RF Aux 1 and RF Aux 2 are optional ports that can be used for external filtering or can be connected together through a coupling capacitor to provide a filter bypass path.

AM3025A – Filter Bank

Miniature Sub-Octave

Specifications

Specifications	Minimum	Typical	Maximum
Frequency Range	2 MHz		6000 MHz
Sub-octave filters	400 MHz		6000 MHz
Insertion Loss – Filter Path		6 dB	
Insertion Loss – Filter Bypass Path		3 dB	
Input IP3		+45 dBm	
RF Input Level			+17 dBm
Switching Speed			1 μ s
Logic Level Low (+3.3V supply)	-0.1V		+0.4V
Logic Level High (+3.3V supply)	+2.0V		+3.3V
Logic Level Low (+5.0V supply)	-0.1V		+0.5V
Logic Level High (+5.0V supply)	+2.0V		+5.0V
Package Size		9.0 x 9.0 x 1.90mm	
DC Supply Voltage	+3.1V	+3.3 V	+5.2V
DC Supply Current		14 mA at +3.3V 18 mA at +5.0V	
Power Consumption		0.09 W	
Operating Temperature	-40 C		+85 C
Storage Temperature	-50 C		+125 C

AM3025A - Filter Bank

Miniature Sub-Octave

Pin Definitions – 24 pin 9mm QFN package

Pin Number	Name	Function
1	Vcc	+3.3V to +5.0V DC Power Input
2	GND	Ground - Common
3	RF 1	RF Port 1 - 2 MHz to 6 GHz – 50 ohms – DC coupled. External AC coupling capacitor required.
4 – 5	GND	Ground - Common
6	RF Aux 1	Optional 2 MHz to 6 GHz RF port that can be used for external filtering or connected to Pin 13 for a filter bypass path. 50 ohms – DC coupled, do not ground. Leave open or use DC block.
7 – 12	GND	Ground - Common
13	RF Aux 2	Optional 2 MHz to 6 GHz RF port that can be used for external filtering or connected to Pin 6 for a filter bypass path. 50 ohms – DC coupled, do not ground. Leave open or use DC block.
14 – 15	GND	Ground - Common
16	RF 2	RF Port 2 - 2 MHz to 6 GHz – 50 ohms – DC coupled. External AC coupling capacitor required.
17	GND	Ground - Common
18	Vcc	+3.3V to +5.0V DC Power Input
19	Band Sel A_2#	Complement of Filter Band Select A_2
20	Band Sel A_2	Filter Band Select A_2
21	Band Sel A_1#	Complement of Filter Band Select A_1
22	Band Sel A_1	Filter Band Select A_1
23	Band Sel A_0#	Complement of Filter Band Select A_0
24	Band Sel A_0	Filter Band Select A_0

AM3025A - Filter Bank

Miniature Sub-Octave

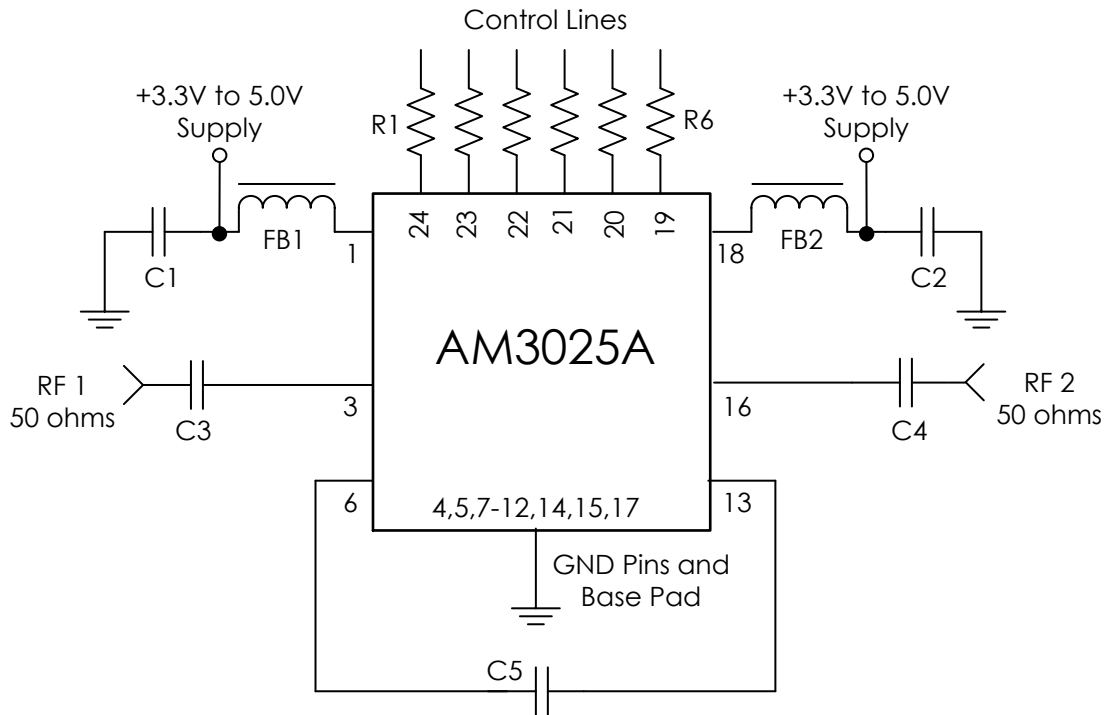
Control Table

Band Select Control Line						Filter Band
A_0	A_1	A_2	A_0#	A_1#	A_2#	
L	L	L	H	H	H	RF Aux 1 / RF Aux 2
L	L	H	H	H	L	390 – 620 MHz
H	H	H	L	L	L	540 – 850 MHz
H	H	L	L	L	H	770 – 1210 MHz
L	H	L	H	L	H	1130 – 1760 MHz
H	L	H	L	H	L	1680 – 2580 MHz
H	L	L	L	H	H	2500 – 3880 MHz
L	H	H	H	L	L	3800 – 6000 MHz

AM3025A – Filter Bank

Miniature Sub-Octave

Typical Application Circuit



Recommended Component List (or equivalent):

Reference Designator	Value	Part Number	Manufacturer
C1, C2	0.1uF	GRM155R71C104KA88	Murata
C3, C4, C5	0.1uF	0402BB104KW160	Passives Plus
FB1, FB2	-	MMZ1005A222E	TDK
R1 - R6	1K ohm	CRCW0402100RFKED	Vishay

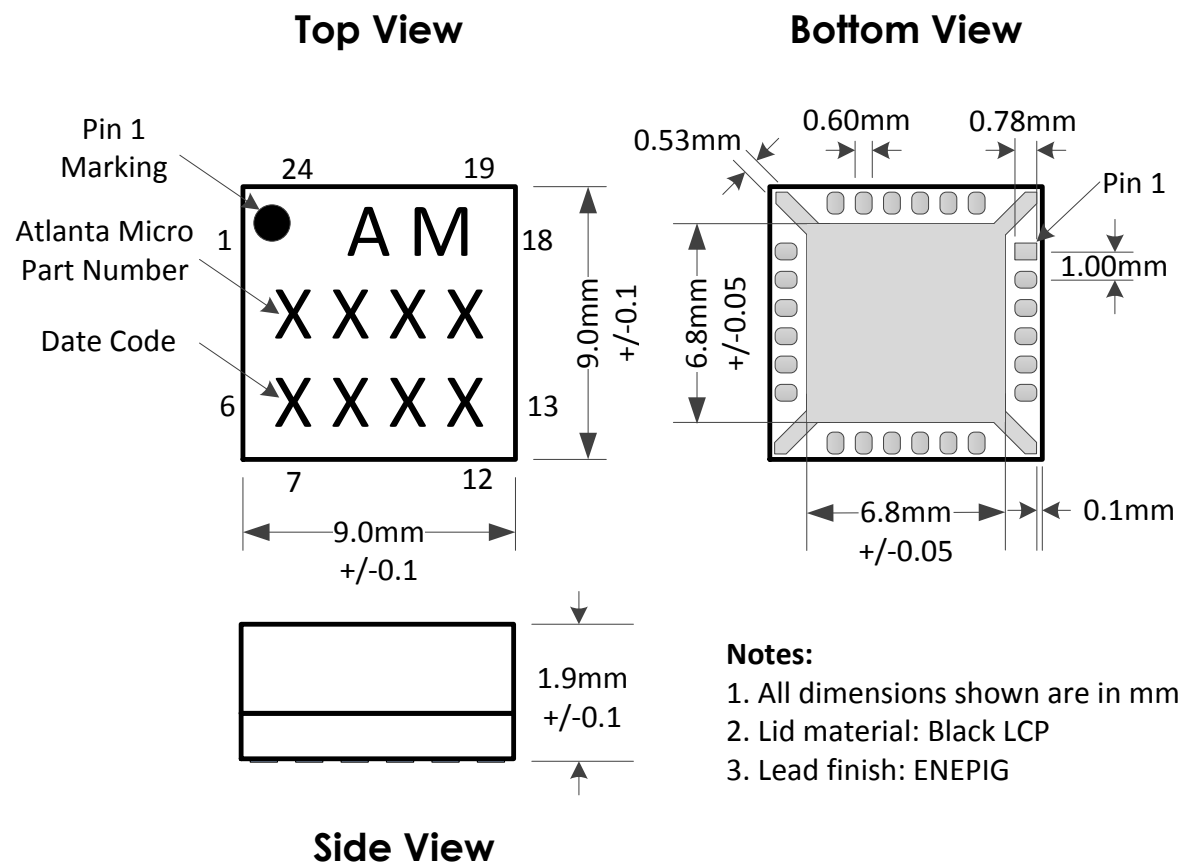
Notes:

1. C3, C4 and C5 should be high performance, low-loss, broadband capacitors for optimum performance.

AM3025A – Filter Bank

Miniature Sub-Octave

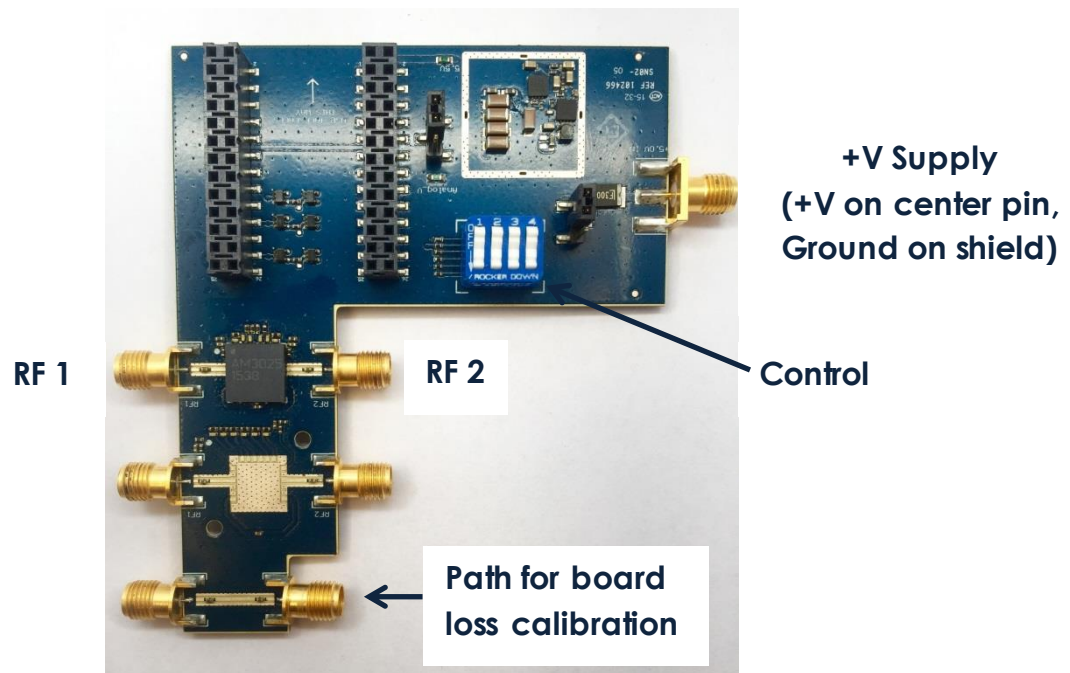
Package Details



AM3025A – Filter Bank

Miniature Transmit/ Receive

Evaluation PC Board



DIP Switch Position			Filter Band
1	2	3	
off	off	off	Bypass
off	off	on	390 – 620 MHz
on	on	on	540 – 850 MHz
on	on	off	770 – 1210 MHz
off	on	off	1130 – 1760 MHz
on	off	on	1680 – 2580 MHz
on	off	off	2500 – 3880 MHz
off	on	on	3800 – 6000 MHz

Off is indicated on the DIP switch with "Off ->" pointing to "rocker down". DIP switch position 4 is not used.