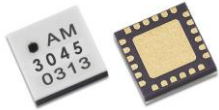


# AM3045 – Tunable Filter

## Digitally Tunable 3.0 to 6.0 GHz Bandpass



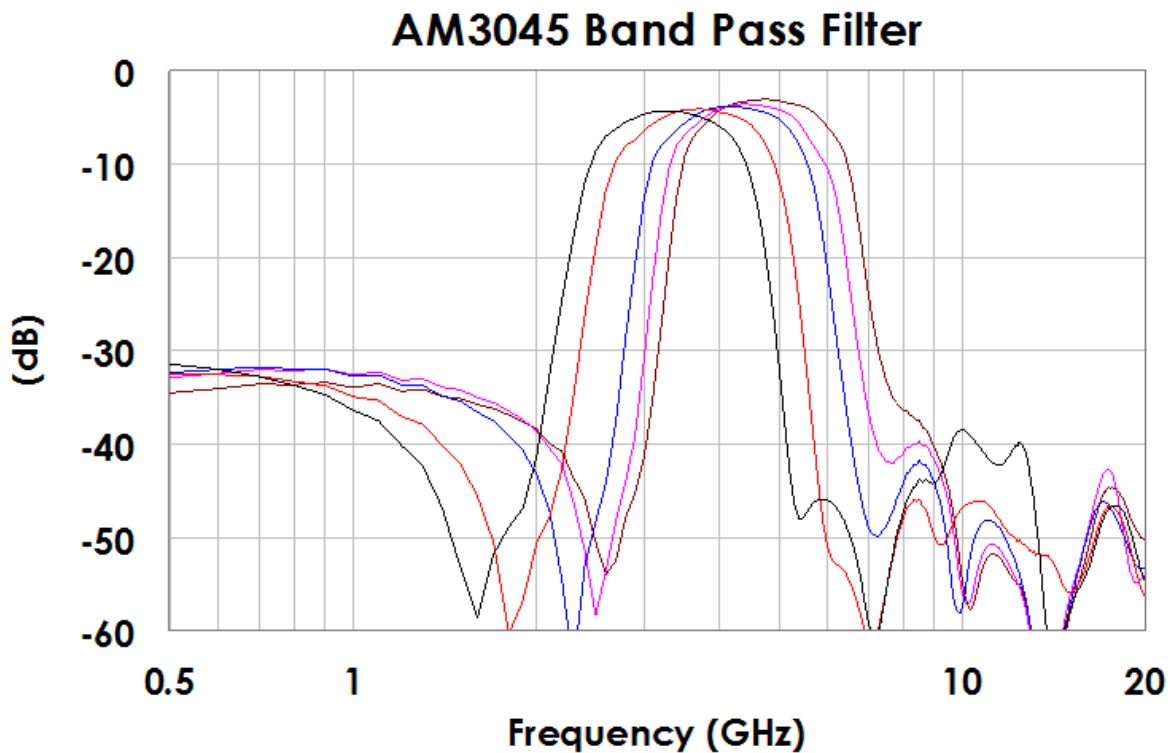
AM3045 is a miniature digitally tunable bandpass filter covering the 3.0 to 6.0 GHz frequency range. The filter provides a constant 1-GHz bandwidth and 500 MHz steps across the frequency range with 4 digital control bits.

AM3045 is packaged in a 4mm QFN package and operates over the -40C to +85C temperature range.

### Features

- Discrete 500-MHz steps
- 1-GHz Bandwidth
- 4-bit control, 3V or 5V Logic
- No calibration required
- +5V DC Supply
- -40C to +85C Operation

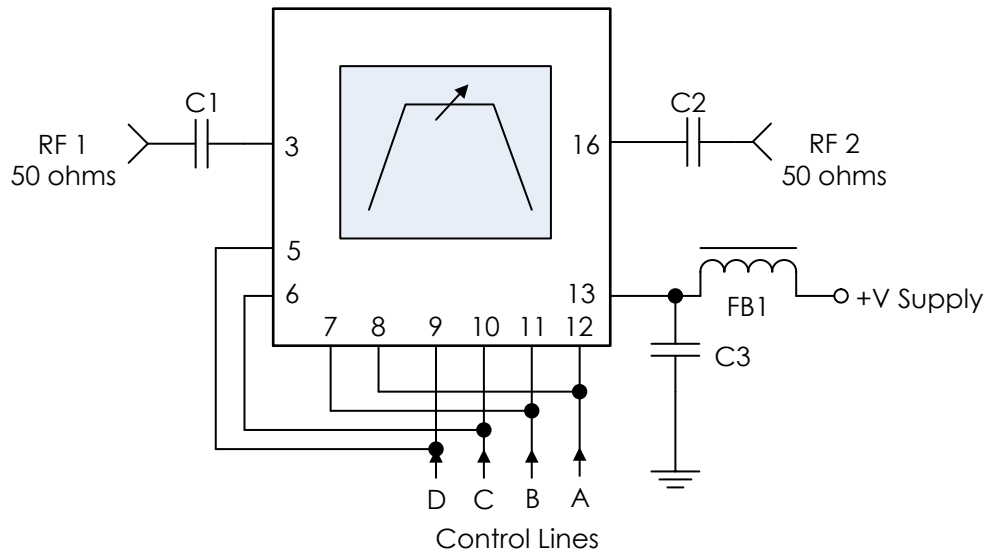
### Typical Performance



# AM3045 – Tunable Filter

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### Typical Application Circuit



### Recommended Component List (or equivalent):

Part Type	Value	Part Number	Manufacturer
C1, C2	0.1 $\mu$ F	0402BB104KW160	Passives Plus
C3	0.1 $\mu$ F	C1005X7R1H104K050BB	TDK
FB1	-	MMZ1005A222E	TDK

### Notes:

1. RF blocking capacitors should be high performance, low-loss, broadband capacitors for optimum performance.
2. RC filtering on the control lines is recommended to prevent digital noise from coupling to the RF path.

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### Specifications

Specifications	Minimum	Typical	Maximum
Frequency Range	3.0 GHz		6.0 GHz
Insertion Loss		3 dB	
Input IP3		+40 dBm	
RF Input Level			+27 dBm
Switching Speed			1 us
Logic Level Low	-0.1V		+0.5V
Logic Level High	+2.0V		+5.0V
Package Size		4.0 x 4.0 x 1.0mm	
DC Supply Voltage	+4.7V	+5.0 V	+5.2V
DC Supply Current		1 mA	
Power Consumption		5 mW	
Operating Temperature	-40 C		+85 C
Storage Temperature	-50 C		+125 C

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## Digitally Tunable 3.0 to 6.0 GHz Bandpass

### Pin Definitions – 24 pin 4mm QFN package

Pin Number	Name	Function
1-2	GND	Ground - Common
3	RF 1	RF Port 1 - 50 ohms, DC coupled. External AC coupling capacitor required.
4	GND	Ground - Common
5	D_HP	High Pass Control Bit D
6	C_HP	High Pass Control Bit C
7	B_HP	High Pass Control Bit B
8	A_HP	High Pass Control Bit A
9	D_LP	Low Pass Control Bit D
10	C_LP	Low Pass Control Bit C
11	B_LP	Low Pass Control Bit B
12	A_LP	Low Pass Control Bit A
13	Vcc	+5.0V DC Power Input
14	NC	Do Not Connect
15	GND	Ground - Common
16	RF 2	RF Port 2 – 50 ohms, DC coupled. External AC coupling capacitor required.
17-24	GND	Ground - Common

# AM3045 – Tunable Filter

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## Digitally Tunable 3.0 to 6.0 GHz Bandpass

### Control Table

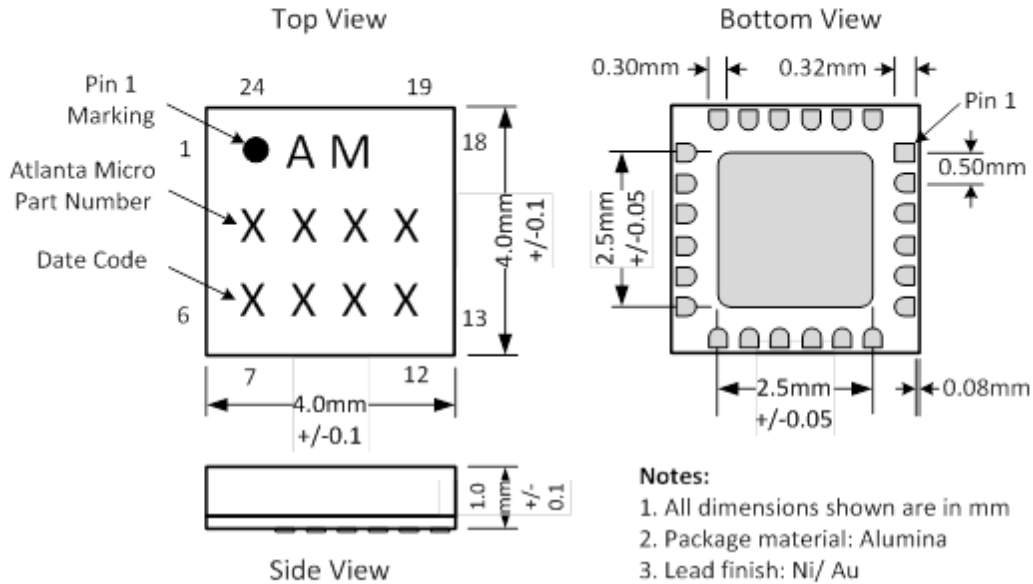
Band Select Control Line				Typical Center Frequency (GHz)
D	C	B	A	
L	L	L	L	3.5
H	L	L	L	4.0
H	H	L	L	4.5
H	H	H	L	5.0
H	H	H	H	5.5

# AM3045 – Tunable Filter

## Digitally Tunable 3.0 to 6.0 GHz Bandpass

### Package Details and Footprint

### Package Drawing



### Recommended Footprint

