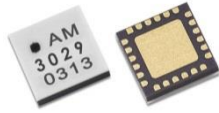


# AM3029 – Tunable Filter

## Digitally Tunable 1.5 to 3.0 GHz Lowpass

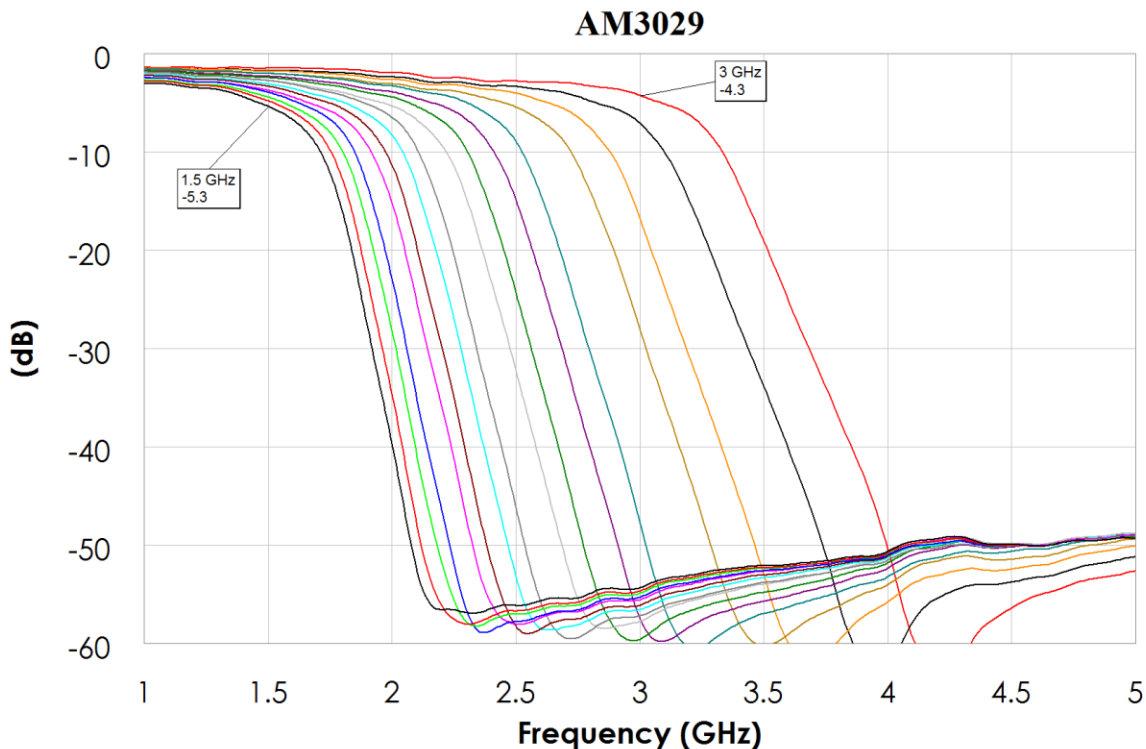


AM3029 is a miniature digitally tunable lowpass filter covering the 1.5 to 3.0 GHz frequency range. The filter provides 16 selectable lowpass cutoff states with 4 digital control bits. The tunable lowpass filter can be combined with one of Atlanta Micro's tunable highpass filters to provide a flexible tunable bandpass filter solution. AM3029 is packaged in a 4mm QFN package and operates over the -40C to +85C temperature range.

### Features

- Discrete low pass cutoff steps
- 4-bit control, 3V or 5V Logic
- No calibration required
- +5V DC Supply
- 4mm QFN Package
- -40C to +85C Operation

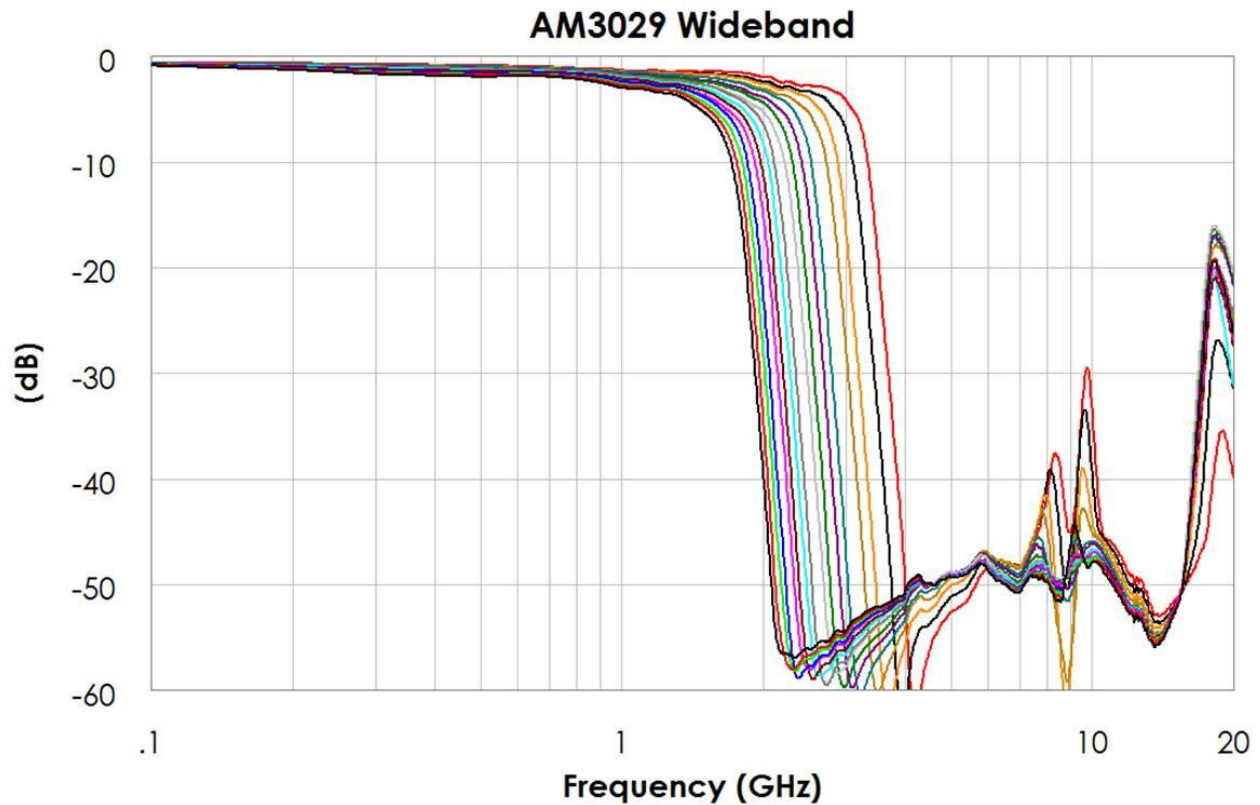
### Typical Performance



# AM3029 – Tunable Filter

## Digitally Tunable 1.5 to 3.0 GHz Lowpass

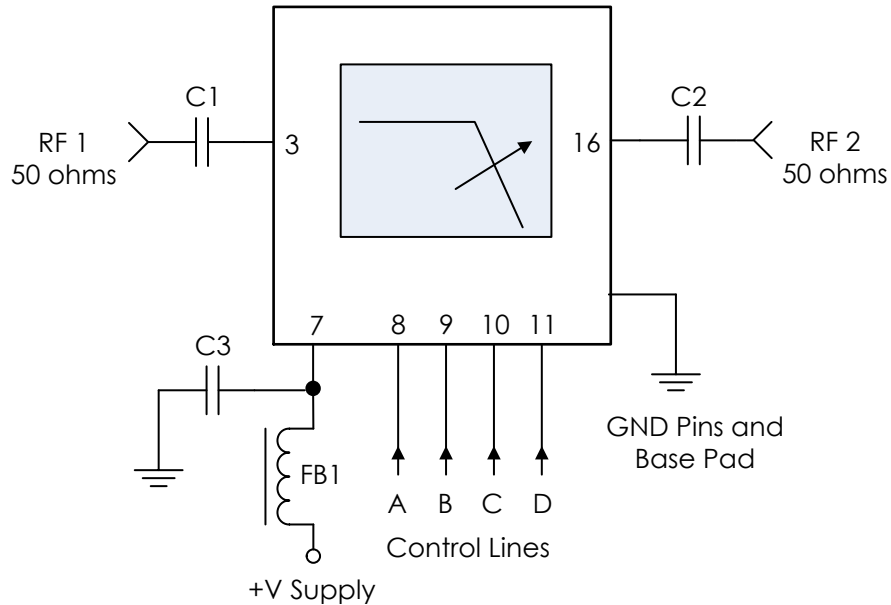
### Typical Performance



# AM3029 – Tunable Filter

## Digitally Tunable 1.5 to 3.0 GHz Lowpass

### Typical Application Circuit



### Recommended Component List (or equivalent):

Part Type	Value	Part Number	Manufacturer
C1, C2	0.1uF	0402BB104KW160	Passives Plus
C3	0.1uF	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.

# AM3029 – Tunable Filter

## Digitally Tunable 1.5 to 3.0 GHz Lowpass

### Specifications

Specifications	Minimum	Typical	Maximum
Cutoff Frequency Range	1.5 GHz		3.0 GHz
Insertion Loss		1 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

# AM3029 – Tunable Filter

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## Digitally Tunable 1.5 to 3.0 GHz Lowpass

### 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 – 5	GND	Ground - Common
6	NC	Do Not Connect
7	Vcc	+5.0V DC Power Input
8	A	Filter Control Bit A
9	B	Filter Control Bit B
10	C	Filter Control Bit C
11	D	Filter Control Bit D
12 – 15	GND	Ground - Common
16	RF 2	RF Port 2 – 50 ohms, DC coupled. External AC coupling capacitor required.
17-24	GND	Ground - Common

# AM3029 – Tunable Filter

## Digitally Tunable 1.5 to 3.0 GHz Lowpass

### Control Table

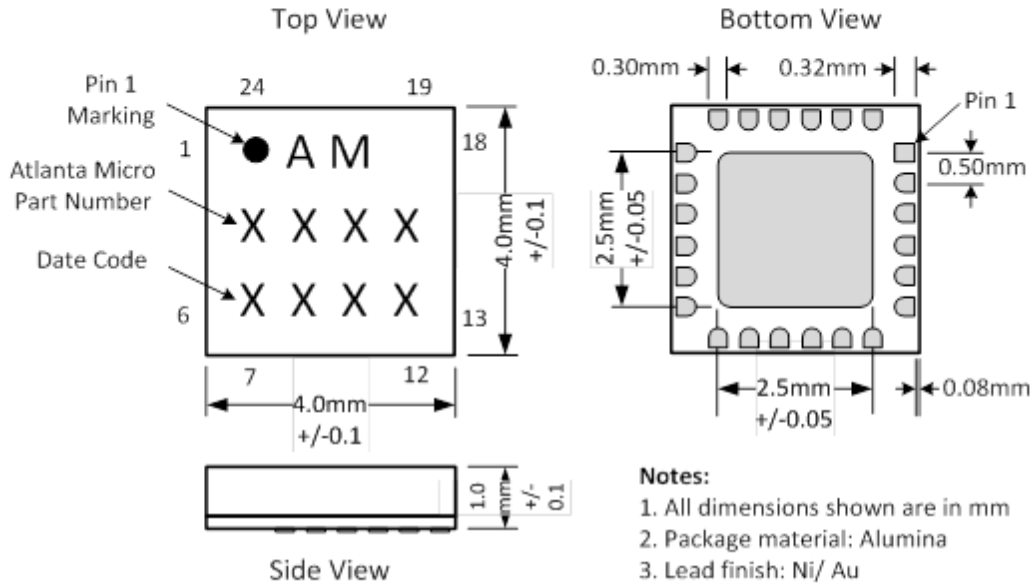
Band Select Control Line				Typical Cutoff Frequency (GHz)
D	C	B	A	
L	L	L	L	1.50
L	L	L	H	1.55
L	L	H	L	1.59
L	L	H	H	1.65
L	H	L	L	1.70
L	H	L	H	1.78
L	H	H	L	1.84
L	H	H	H	1.92
H	L	L	L	2.00
H	L	L	H	2.10
H	L	H	L	2.20
H	L	H	H	2.33
H	H	L	L	2.49
H	H	L	H	2.67
H	H	H	L	2.86
H	H	H	H	3.12

# AM3029 – Tunable Filter

## Digitally Tunable 1.5 to 3.0 GHz Lowpass

### Package Details and Footprint

### Package Drawing



### Recommended Footprint

