AS0223
Baseband Filter with programmable BW

DESCRIPTION

The Argo Semi AS0223 IP is a 4th order Chebyshev Low Pass Filter (LPF) with 0.5 dB ripple using two tow-thomas biquads. It covers a wide tuning range, bandwidths from 2.5MHz up to 1.2GHz (cutoff freq). It can be configured to function either as current or voltage mode input filter, supporting LNA 1st or mixer 1st architectures. A passive RC notch filter can be cascaded in order to enhance the roll off and eliminate DAC spurs. The filter has a 10 bit offset DAC for DC offset correction.

ABOUT ARGO SEMICONDUCTORS

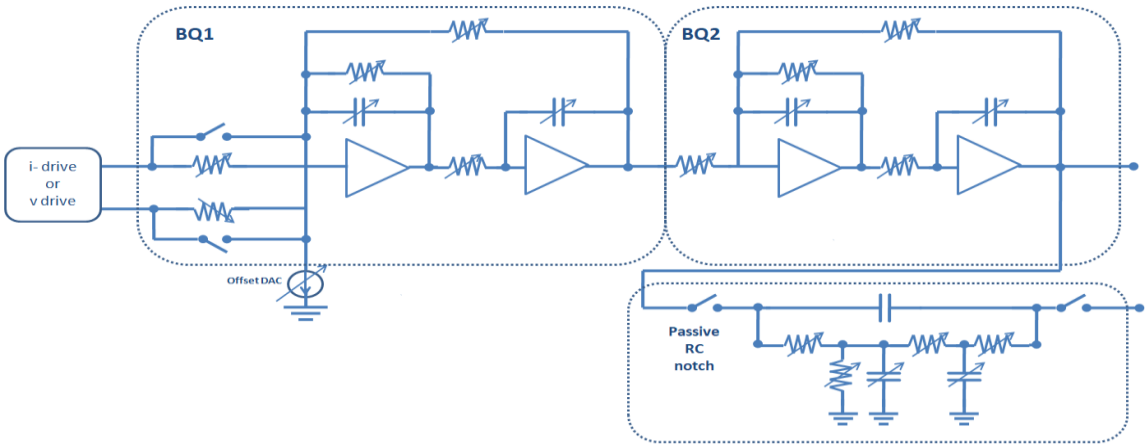
Argo Semiconductors offers high quality RF IP products operating in the frequency region between 2 GHz and 10 GHz. Argo's team has a long experience on Wi-Fi RF silicon product development and cellular RF silicon product development, bringing billions of chips to the market. Leveraging on these capabilities and building on its solid IP base, Argo helps its customers develop products that can meet the most stringent requirements, while shrinking the development time. IP customization is possible upon request.

FEAUTURES

- ✓ Wide BW tuning range : 2.5 MHz – 1.2 GHz
- ✓ Output 1dB compression point = 7.5 dBm
- ✓ Unconditionally stable
- ✓ Programmable amplifier bias current (6 bit)
- ✓ Programmable gain setting
- ✓ 1 V single supply
- ✓ Max consumption = 25mA (@ 1.2 GHz bandwidth)
- ✓ Technology node: GF 22FDX CMOS SOI

APPLICATIONS

- ➢ WiFi 6/6E/7
- ➢ Bluetooth
- ➢ Sub-6 GHz, 5G NR
- ➢ LTE



Simplified Block Diagram

Receiver Characteristics					
Parameter	**Minimum**	**Typical**	**Maximum**	**Units**	**Comments**
BW support	2.5		1200	MHz	2.5, 5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 90, 100, 160, 200, 320, 400, 640, 800, 1200
Noise (input refered)			203n		max gain
		34n		V/sqrtHz	typ gain
	24n				min gain
voltage gain	-10		21	dB	BB_Gain range = -10~ 21 dB
Gain step		3		dB	
Gain flatness			1.5	dB	1.2 GHz bw
Output 1dB compression point			7.5	dBm	O1dBCP
Settling time			500	ns	0-100%
Gain change time			300	ns	0-100%
DC offset		-55		dBc	calibrated (Min<Gain<Max)
Power consumption			30.5	mW	25mA from 1.22V (per path, I or Q)
Area		0.6		mm2	

www.argosemi.com
info@argosemi.com
Argo Semiconductors
+30 210 699 3609