



# Desert Microtechnology Associates, Inc.

*Excellence in Semiconductor Development, Production & Technology*

## D17IP04 – 3<sup>rd</sup> Order Digital Filter

February 2017 Rev 0.0

### Features

- 40 db attenuation
- Operates up to 2 MHz
- 256 clock latency
- Optimized to minimize power and area

### Technology

- XH035 ISMOS

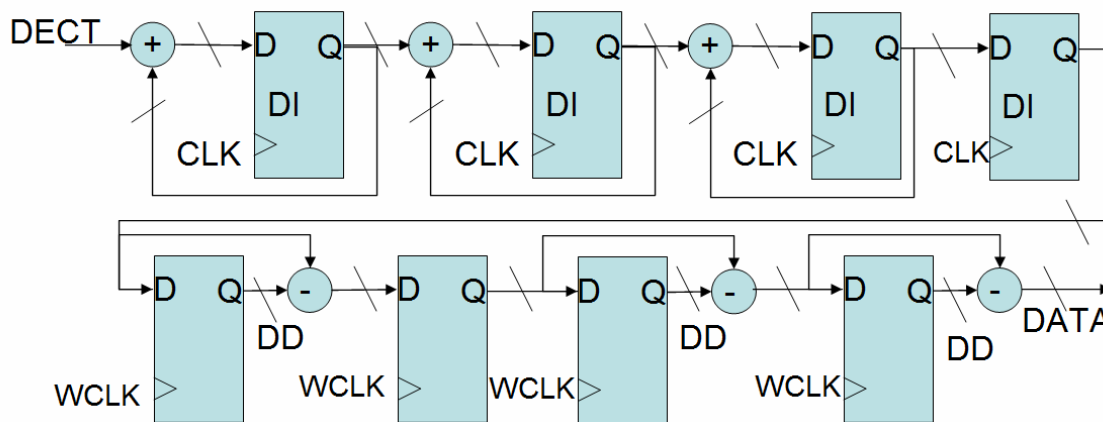
### Applications

- 2<sup>nd</sup> order Delta-Sigma modulators
- Digital signal processing
- Incremental ADC

### Deliverables

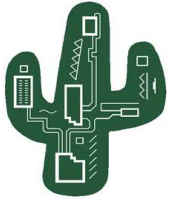
- Schematic
- Netlist, upon request
- GDSII

### Functional Block Diagram



### Description

The D17IP04 is a 3rd order cascade of integrators and comb, or differentiators, (CIC) digital filter. It converts a single channel digital bit stream into a 16 bit output word with a 256 clock latency. The design is optimized for area and power. It can operate down to 2V.



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## Pin Description

Name	Functional Description	Type	Default
DECT	Digital bit stream input	Input	Active high
MDS	Input clock and data enable	Input	Active high
CLK	Bit rate clock, 2MHz or less	Input	Active high
WCLK	Work clock, should be CLK/64 and synchronized to CLK	Input	Active high
DFC[19:0]	Digital output word. For best performance, use DFC[17:2] for the final digital word	Output	Active high
VCC	Positive Supply Voltage	Supply	3V
VSS	Negative Supply Voltage	Supply	0V