

January 1998

DESCRIPTION

The 32F810X is a high performance, low power, digitally programmable low-pass filter for applications requiring variable-frequency filtering. The device consists of three functional blocks: [1] a 7th-order 0.05° Equiripple Low-Pass filter, [2] two DACs for controlling the filter cutoff frequency and high-frequency peaking (boost), and [3] a Serial Port for programming the f_c and Boost DACs.

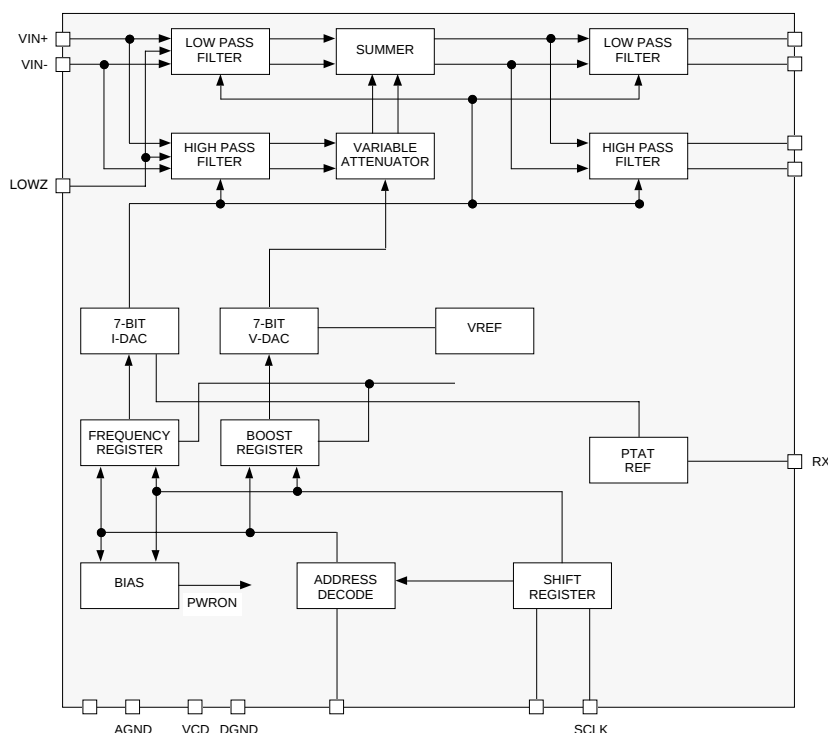
Cutoff frequency and boost are controlled by the two on-chip 7-bit DACs, which are programmed via the 3-line serial interface. Boost is programmable from 0 to 14.3 dB nominally at maximum f_c , and is implemented using two symmetrical, real-axis zeroes. Both boost and f_c control do not affect the flat group delay response.

The 32F810X device is ideal for variable data rate and variable frequency shaping applications. It requires only a +5V supply and has an idle mode for minimal power dissipation. The SSI 32F810X is available in a 16-lead SON package.

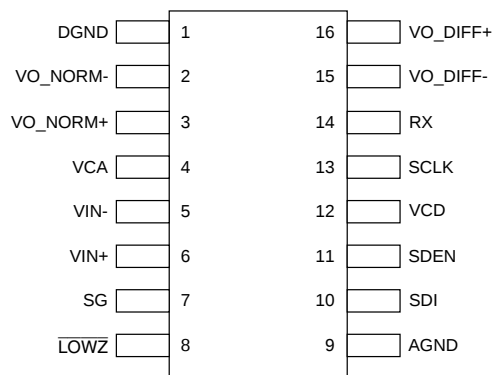
FEATURES

- Programmable cutoff frequency:
 - 32F8102 - 5.5 to 18 MHz
 - 32F8103 - 3.7 to 12 MHz
 - 32F8104 - 2.9 to 9 MHz
- Programmable boost/equalization of 0 to 14.3 dB
- Matched normal and differentiated outputs
- $\pm 15\%$ *f*_c accuracy
- $\pm 2\%$ maximum group delay variation
- Less than 1.5% total harmonic distortion
- Low-Z input switch controlled by $\overline{\text{LOWZ}}$ pin
- No external filter components required
- 95 mW nominal power, <5 mW idle

BLOCK DIAGRAM



PIN DIAGRAM



16-Lead SON

CAUTION: Use handling procedures necessary for a static sensitive component.