

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.

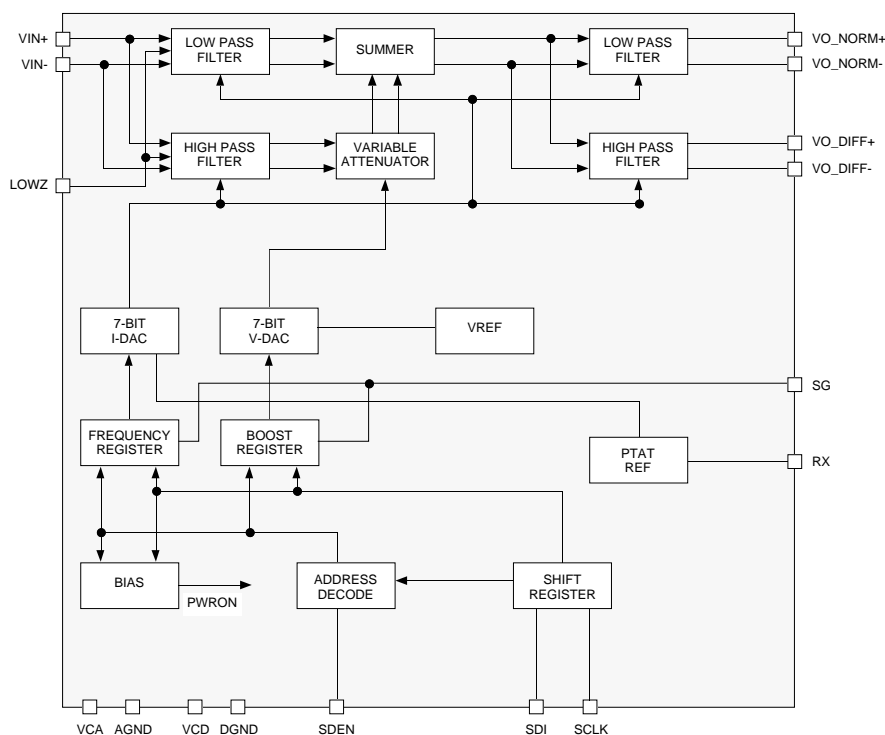
Cutoff frequency and boost are controlled by the two on-chip 7-bit DACs, which are programmed via the 3-line serial interface. Boost is programmable from 0 to 14.3 dB nominally at maximum f_c , and is implemented using two symmetrical, real-axis zeroes. Both boost and f_c control do not affect the flat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

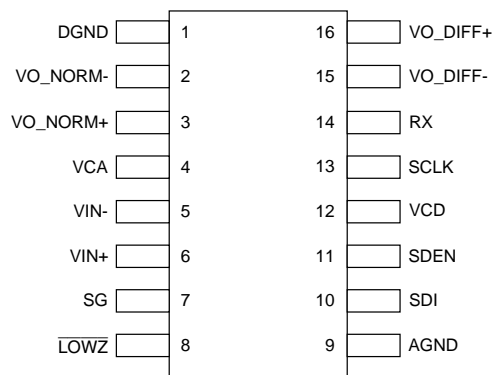
FEATURES

- **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.