

Electrically Programmable Active Filter

Advance Data Sheet

Description

The MSEPAP integrated circuit provides a continuous time 4th order filter whose corner or center frequencies can be programmed using a 10 bit word serially loaded and stored in on-chip EEPROM. The MSEPAP can be set as a lowpass or a bandpass to 18 MHz from 500 kHz with no external components. The device operates from 4.5V up to 5.5 VDC. The accuracy of the MSEPAP is better than 1%. Temperature stability is better than discrete solutions using resistors, capacitors and op amps.

The EEPROM technology for setting the frequency requires 20V, which can be generated by the system, and the device programmed in the field, if desired.

The MSEPAP is available in a 16 pin bench or system programmable SOIC.

Features

- Up to 18 MHz Lowpass or Bandpass filtering
- Continuous time filter: NO sample clock
- Low Noise
- 16-pin bench programmable

Applications

- Instrumentation filtering
- Anti-alias filter for Data Acquisition
- Video Filtering

Absolute Maximum Ratings

Power Supply Voltage	+6 V
Storage Temperature Range	-60 to +150° C
Operating Temperature Range	-40 to +85° C

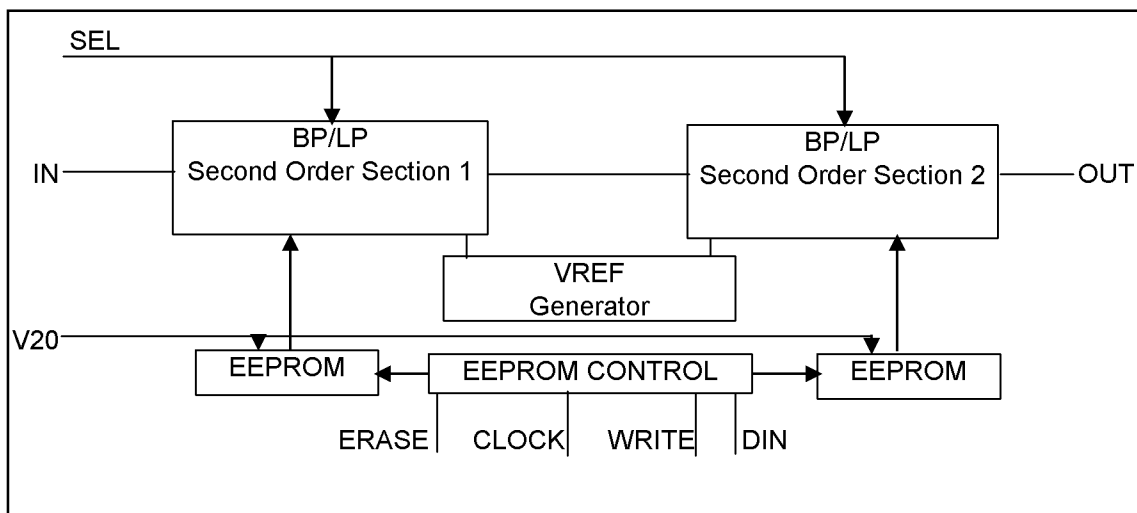
MSEPAP


Figure 1 Simplified Block Diagram

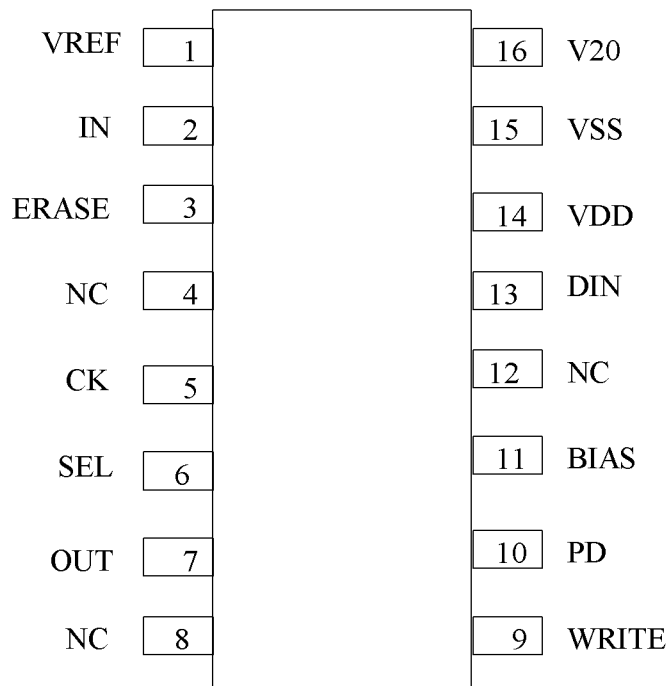
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Pin Description

Pin	Description	Pin	Description
1	VREF Internally Generated Ground Reference; Nominally 2.5VDC	12	NC No Internal Connection
2	IN Filter Input	13	DIN Serial Data Input for Programming EEPROM and filter position
3	ERASE EEPROM Erase Control	14	VDD Positive Power Supply; Typically 5.0VDC
4	NC No Internal Connection	15	VSS Negative Power Supply; Typically 0VDC
5	CK Serial Data Clock	16	V20 EEPROM Programming voltage. When erasing or programming; voltage is set at 20 VDC. For filter operation, voltage is 5.0VDC
6	SEL Selects Lowpass or Bandpass; Lowpass is selected at 0V		
7	OUT Filter Output		
8	NC No Internal Connection		
9	WRITE Write Control		
10	PD Power Down Control		
11	BIAS Resistors from Bias Pin to VDD controls IDD and maximum frequency response.		

MSEPAF



Selectable Programmable Active LP/BP Filter Advance Data Sheet

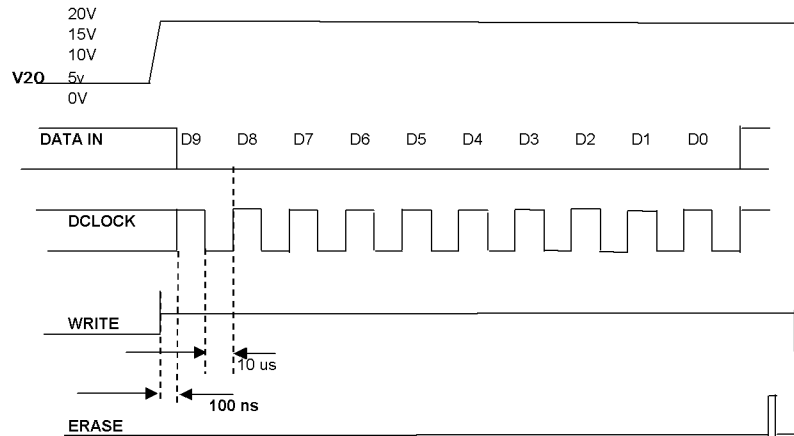


Figure 2a. ERASE CYCLE

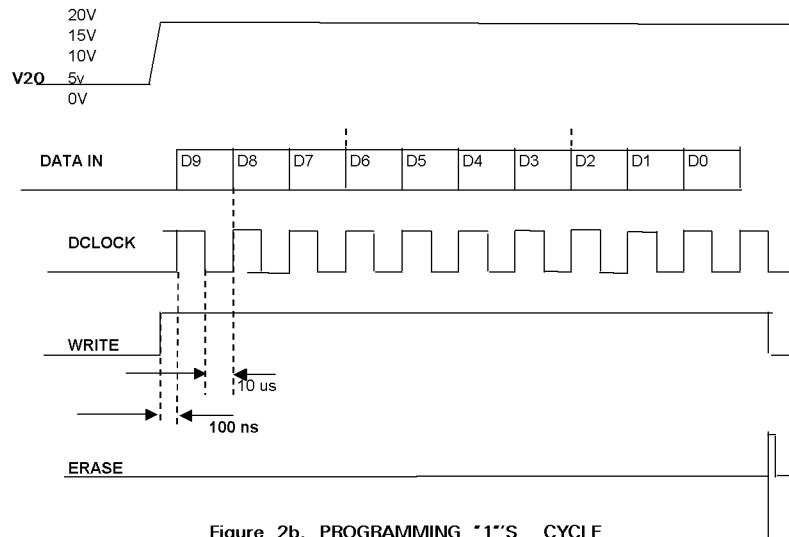


Figure 2b. PROGRAMMING "1'S" CYCLE

Figure 2 Programming Timing Diagram

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STANDARD PRODUCTS

MSEPAF

MSGEQ5A	Five Band Graphic Equalizer
MSGEQ7	Seven Band Graphic Equalizer
MSHFS1-6	Selectable High Frequency LP/BP Filter
MSFS1-6	Selectable Lowpass/Bandpass Filter
MSCAHF	Selectable High Frequency Active Lowpass/Bandpass Filter
MSU1F1-4, MSU2F1	Resistor Programmable Universal Active Filter
MSU1HF1-4, MSU2HF1	High Frequency Resistor Programmable Universal Active Filter
MSELP	Switched Capacitor Elliptic Lowpass Filter with Op Amps
MSNBLP	Switched Capacitor Butterworth Lowpass Filter
MSLE/B/C5L/M	Switched Capacitor General Purpose Lowpass Filter
MS2LFS	Dual Selectable Low Voltage Lowpass/Bandpass Filter
MSHN1-6	Selectable High Pass/Notch Filter
MSRAAF	Resistor Programmable Active Audio Filter
MSRAHF	Resistor Programmable Active High Frequency Filter
MS2CAP	Two Channel Audio Processor
MS6CAP	Six Channel Audio Processor

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