

FEATURES

- Sampling Rates from 0.001 to 15 MHz (MSPS)
- 1/2 LSB (K Grade) DNL to 6 MHz
- Interface to any Input Range between GND and V_{DD}
- Monotonic; No Missing Codes
- Single Power Supply (4 to 6 volt)
- Low Power CMOS (300 mW)
- 2000 Volts ESD Protection
- Latch-Up Free

BENEFITS

- Low Power for Lower System Noise
- Most Flexible Input Range of any A/D Available
- No Sample/Hold Needed
- Use MP7684A for New Designs

GENERAL DESCRIPTION

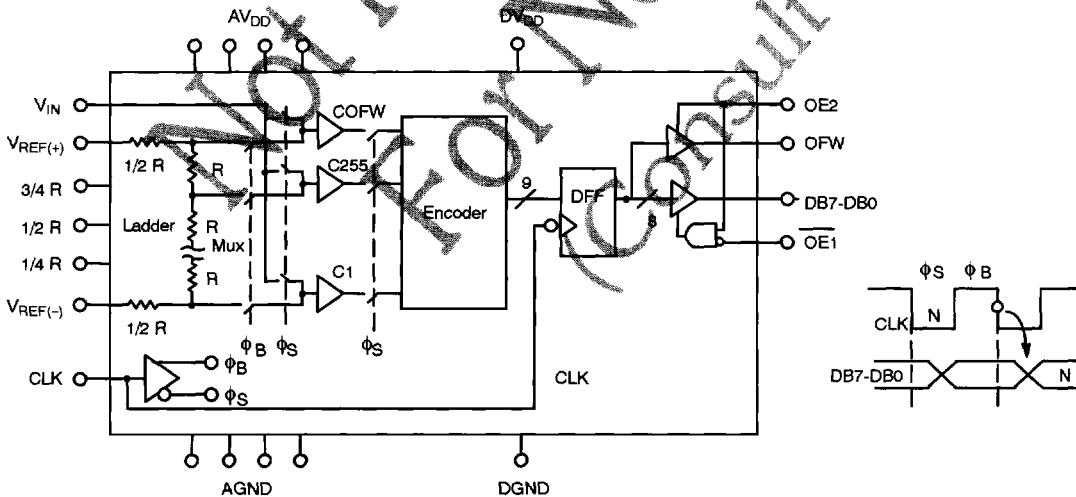
The MP7684 is an 8-bit monolithic CMOS single step high speed Analog-to-Digital Converter designed for precision applications in video and data acquisition requiring conversion rates to 10 MHz with differential linearity error less than 1/2 LSB and low power consumption. A unique feature of this converter is its input architecture which eliminates the need for an input track and hold and allows full scale input ranges from 1.2 to 5 volts peak-to-peak,

referred to ground or offset. The user simply sets $V_{REF(-)}$ and $V_{REF(+)}$ to encompass the desired input range.

The MP7684 includes 256 clocked comparators, encoders, 3-state output buffers, a reference resistor ladder and associated timing circuitry. An overflow bit (or flag) has been provided to make it possible to achieve 9-bit resolution by connecting two devices in series. In normal operation this flag has no effect on the data bits.

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SIMPLIFIED BLOCK AND TIMING DIAGRAM

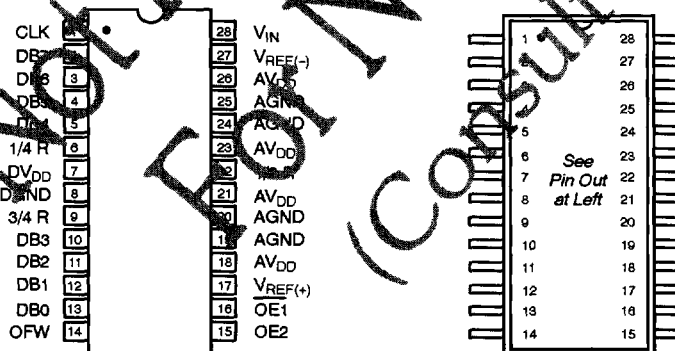


ORDERING INFORMATION

Package Type	Temperature Range	Part No.	DNL (LSB)	INL (LSB)
Plastic Dip	-40 to +85°C	MP7684JN	±1 1/2	2
Plastic Dip	-40 to +85°C	MP7684KN	±1	1/2
SOIC	-40 to +85°C	MP7684JS	±1 1/2	2
SOIC	-40 to +85°C	MP7684KS	±1	1 1/2
Ceramic Dip	-40 to +85°C	MP7684JD	±1 1/2	2
Ceramic Dip	-40 to +85°C	MP7684KD	±1	1 1/2
Ceramic Dip	-55 to +125°C	MP7684SD*	±1 1/2	2

PIN CONFIGURATIONS

See Packaging Section for Package Dimensions



28 Pin PDIP, CDIP (0.600")

28 Pin SOIC (EIAJ, 0.335")