

**PRELIMINARY**

# LMC6582 Dual/LMC6584 Quad Low Voltage, Rail-To-Rail Input and Output CMOS Operational Amplifier

## General Description

The LMC6582/4 is a high performance operational amplifier which can operate over a wide range of supply voltages, from 1.8V to 10V. It has guaranteed specs at 1.8V, 2.2V, 3V, 5V, and 10V.

The LMC6582/4 provides an input common-mode voltage range that exceeds both rails. The rail-to-rail output swing of the amplifier assures maximum dynamic signal range. This rail-to-rail performance of the amplifier, combined with its high open-loop voltage gain makes it unique among rail-to-rail CMOS amplifiers. The LMC6582/4 is an excellent upgrade for circuits using limited common-mode range amplifiers.

The LMC6582/4 has been designed specifically to improve system performance in low voltage applications. Guaranteed operation down to 1.8V means that this family of amplifiers can operate at the end of discharge (EOD) voltages of several popular batteries. The amplifier's 80 fA input current, 0.5 mV offset voltage, and 82 dB CMRR maintain accuracy in battery-powered systems.

For a single, dual or quad CMOS amplifier with similar specs and a powerdown mode, refer to the LMC6681/2/4 data-sheet.

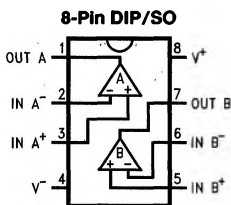
## Features (Typical unless otherwise noted)

- Guaranteed Specs at 1.8V, 2.2V, 3V, 5V, 10V
- Rail-to-Rail Input Common-Mode Voltage Range
- Rail-to-Rail Output Swing  
(within 10 mV of supply rail, @  $V_S = 3V$  and  $R_L = 10\text{ k}\Omega$ )
- CMRR and PSRR 82 dB
- Ultra Low Input Current 80 fA
- High Voltage Gain ( $V_S = 3V$ ,  $R_L = 10\text{ k}\Omega$ ) 120 dB
- Unity Gain Bandwidth 1.2 MHz

## Applications

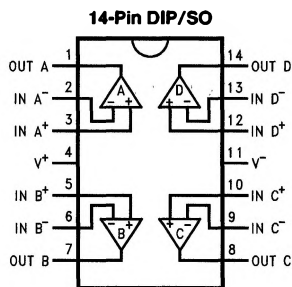
- Battery Operated Systems
- Sensor Amplifiers
- Portable Communication Devices
- Medical Instrumentation
- Level Detectors, Sample-and-Hold Circuits
- Battery Monitoring

## Connection Diagrams



Top View

TL/H/12041-1



Top View

TL/H/12041-2

## Ordering Information

| Package              | Temperature Range<br>Industrial, -40°C to +85°C    | NSC<br>Drawing | Transport<br>Media     |
|----------------------|--|----------------|------------------------|
| 8-pin Molded DIP     | LMC6582AIN, LMC6582BIN                             | N08E           | Rails                  |
| 8-pin Small Outline  | LMC6582AIM, LMC6582BIM<br>LMC6582AIMX, LMC6582BIMX | M08A<br>M08A   | Rails<br>Tape and Reel |
| 14-pin Molded DIP    | LMC6584AIN, LMC6584BIN                             | N14A           | Rails                  |
| 14-pin Small Outline | LMC6584AIM, LMC6584BIM<br>LMC6584AIMX, LMC6584BIMX | M14A<br>M14A   | Rails<br>Tape and Reel |