## FEATURES

Operates at Supply Voltages from 1.0 V to 30 V
Ground Current: $95 \mu \mathrm{~A}$
Works in Step-Up or Step-Down Mode
Very Few External Components Required
Low-Battery Detector On Chip
User-Adjustable Current Limit
Internal 1 A Power Switch
Fixed and Adjustable Output Voltage Versions
8 -Pin Dip or SO-8 Package
APPLICATIONS
Single-cell to $5 \sqrt{ }$ Conventers
Laptgp anc
Pagers


Cellular Telephones
Portable Instruments
4 mA-20 mA Loop Powered Instruments Hand-Held Inventory Computers
Battery-Powered $\alpha, \beta, \gamma$ Particle Detectors

## GENERAL DESCRIPTION

The AD P1073 is part of a family of step-up/step-down switching regulators which operates from an input supply voltage of as little as 1.0 V . This extremely low input voltage allows the
ADP1073 to be used in applications that require using a single cell battery as the primary power source.
The ADP1073 can be configured to operate in either step-up or step-down mode; but for input voltages greater than 3 V , the ADP1173 is recommended.
An auxiliary gain amplifier can serve as a low-battery detector or linear regulator. Quiescent current on the AD P1073-5 is only $135 \mu \mathrm{~A}$ unloaded, making it ideal for systems where long battery life is required.

The AD P1073 can deliver 40 mA at 5 V from an input voltage range as low as 1.25 V , or 10 mA at 5 V from a 1.0 V input. C urrent limiting is available by adding an external resistor. B attery protection circuitry keeps reverse currents to safe levels at reverse supply voltages of up to 1.6 V .

FUNCTIONAL BLOCK DIAGRAM

*F or outline information see Package Information section.

## PIN CONFIGURATIONS

## Plastic DIP Package

## ( $\mathrm{N}-8$ )



Small Outline Package
(SO-8)



## NOTES

*D enotes the specifications that apply over the full operating temperature range.
${ }^{1} T$ his specification guarantees that both the high and low trip point of the comparator fall within the 210 mV to 230 mV range.
${ }^{2}$ This specification guarantees that the output voltage of the fixed versions will always fall within the specified range. The waveform at the sense pin will exhibit a sawtooth shape due to the comparator hysteresis.
${ }^{3} 100 \mathrm{k} \Omega$ resistor connected between a 5 V source and the AO pin.
${ }^{4}$ T he AD P1110 is guaranteed to withstand continuous application of +1.6 V applied to the $G N D$ and SW2 pins while $\mathrm{V}_{\text {IN }}$, $\mathrm{I}_{\text {LIM }}$, and SW 1 pins are grounded. Specifications subject to change without notice.

[^0]
[^0]:    This information applies to a product under development. Its characteristics and specifications are subject to change without notice. Analog Devices assumes no obligation regarding future manufacture unless otherwise agreed to in writing.

