

NCV2002

Operational Amplifier with sub-one volt operation, Rail to Rail I/O

Product Overview

For complete documentation, see the data sheet.

The NCS2002 is an industry first sub-one volt op-amp that features a rail-to-rail common mode input voltage range, along with rail-to-rail output drive capability. This amplifier is guaranteed to be fully operational down to 0.9 V, providing an ideal solution for powering applications from a single cell Nickel Cadmium (NiCd) or Nickel Metal Hydride (NiMH) battery. Additional features include no output phase reversal with overdriven inputs, trimmed input offset voltage of 0.5 mV, extremely low input bias current of 40 pA, and a unity gain bandwidth of 1.1 MHz at 5.0 V. The NCS2002 also has an active high enable pin that allow external shutdown of the device. In the standby mode, the supply current is typically 1.9 A at 1.0 V. Because of its small size and enable feature, this amplifier represents the ideal solution for small portable electronic applications. The NCS2002 is available in the space saving SOT23-6 (TSOP-6) package with two industry standard pinouts.

Features

- 0.9 V Guaranteed Operation
- Standby Mode: $I_D = 1.9 \mu A$ at 1.0 V, Typical
- Rail-to-Rail Common Mode Input Voltage Range
- Rail-to-Rail Output Drive Capability
- No Output Phase Reversal for Over-Driven Input Signals
- 0.5 mV Trimmed Input Offset
- 10 pA Input Bias Current
- 1.1 MHz Unity Gain Bandwidth at $\pm 2.5V$, 1.0 MHz at $\pm 0.5V$

Applications

- Signal Conditioning
- Sensor Interfaces

End Products

- Digital Still Cameras
- PDAs

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Rail to Rail	Channels	$V_{S\text{Min}}$ (V)	$V_{S\text{Max}}$ (V)	$I_{o\text{Typ}}$ (mA)	$V_{o\text{Max}}$ (mV)	GBW Typ (MHz)	SR Typ (V/ μs)	$I_{o\text{Typ}}$ (mA)	$\Delta V_{os}/\Delta T$ ($\mu V/^\circ C$)	e_n (nV/ \sqrt{Hz})	$I_{bias\text{Typ}}$ (pA)	CMRR Typ (dB)	Architecture	Temperature Range ($^\circ C$)	Package Type
NCV2002SN1T1G	0.4752		Active	Input/Output	1	0.9	7	0.48	6	1	1.2	86	8	100	10	82	CMOS	-40 to 125	TSOP-6
NCV2002SN2T1G	0.2601		Active	Input/Output	1	0.9	7	0.48	6	1	1.2	86	8	100	10	82	CMOS	-40 to 125	TSOP-6