

## Product Overview

### NCS1002A: Constant Voltage / Constant Current Secondary Side Controller

For complete documentation, see the data sheet.

The NCS1002A is a performance upgrade from the NCS1002 focused on reducing power consumption in applications that require more efficient operation. It is a highly integrated solution for Switching Mode Power Supply (SMPS) applications requiring a dual control loop to perform Constant Voltage (CV) and Constant Current (CC) regulation. The NCS1002A integrates a 2.5 V voltage reference and two precision op amps. The voltage reference, along with Op Amp 1, is the core of the voltage control-loop. Op Amp 2 is an independent, uncommitted amplifier specifically designed for the current control. Key external components needed to complete the two control loops are: (a) A resistor divider that senses the output of the power supply (battery charger) and fixes the voltage regulation set point at the specified value. (b) A sense resistor that feeds the current sensing circuit with a voltage proportional to the DC output current. This resistor determines the current regulation set point and must be adequately rated in terms of power dissipation. The NCS1002A comes in a small 8-pin SOIC package and is ideal for space-shrunk applications such as battery chargers.

### Features

- Low Input Offset Voltage: 0.5 mV, Typ
- Input Common-Mode Range includes Ground
- Low Quiescent Current: 75  $\mu$ A per Op Amp at VCC = 5 V
- Large Output Voltage Swing
- Wide Power Supply Range: 3 V to 36 V
- High ESD Protection: 2 kV

### Applications

- Switch Mode Power Supplies

### End Products

- Battery Chargers

### Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Type	V <sub>(BR)</sub> Typ (V)	Tolerance (%)	I <sub>O</sub> Typ (mA)	I <sub>R</sub> Min (mA)	V <sub>F</sub> Max (V)	T <sub>A</sub> Min (°C)	T <sub>A</sub> Max (°C)	Package Type
NCS1002ADR2G	0.1131	Pb-free Halide free	Active	Adjustable	2.5	0.4	0.4	0.04	36	-40	105	SOIC-8

For more information please contact your local sales support at [www.onsemi.com](http://www.onsemi.com).

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