Product Overview

NCS2003: Operational Amplifier, High Slew Rate, Low Voltage, Rail-to-Rail Output

For complete documentation, see the data sheet.

The NCS(V)2003 is a low voltage operational amplifier with rail-to-rail output drive capability. The 1.8 V operation allows high performance operation in low voltage, low power applications. Additional features include no output phase reversal with overdriven inputs, a low input offset voltage of 0.5 mV, ultra low input bias current of 1 pA, and a unity gain bandwidth of 5 MHz at 1.8 V. The tiny NCS2003 is the ideal solution for small portable electronic applications and is available in the space saving SOT23-5 and SOT-553 packages. The NCV2003 is available in SOT23-5 and is AEC-Q100 Qualified and PPAP Capable.

Features

- 7 MHz Unity Gain Bandwidth at 5 V
- 8V/us Slew Rate at 5V
- 5 MHz Unity Gain Bandwidth at 1.8 V
- Rail-to-Rail Output
- No Output Phase Reversal for Over-Driven Input Signals
- Low Offset Voltage - 500 µV typical
- Low Input Bias Current - 1 pA typical
- SOT23-5 and SOT553-5 Packages
- NCV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q100 Qualified and PPAP Capable

Benefits

- Operates at higher speeds
- Captures fast signal transitions
- Operates at higher speeds
- Wide dynamic range
- Output stays stable in over-driven conditions
- Better output accuracy
- High input impedance
- Small package saves space
- Meets automotive requirements

Applications

- White Goods & Air Conditioners (Motor Current Sense)
- Current Shunt Monitors for Battery Monitoring
- Automotive - Electronic Power Steering & Fuel Pumps (Motor Current Sense)
- Industrial Motor Drives (Motor Current Sense)
- Hard Drive Sensor Buffer

End Products

- White Goods
- HVAC
- Hard Drives
- Blood Pressure Monitor

Part Electrical Specifications

Product	Pricing ($/Unit)	Compliance	Status	Rail to Rail	Channels	V_S Min (V)	V_S Max (V)	I_q Typ (mA)	V_{OS} Max (mV)	GBW Typ (MHz)	SR Typ (V/µs)	I_O Typ (mA)	$\Delta V_{OS}/\Delta T$ (µV/C)	e_N (nV/√Hz)	I_{bias} Typ (pA)	CMRR Typ (dB)	Architecture	Temperature Range (°C)	Package Type
NCS2003ASN2T1G	0.2	Pb-free Halide free non AEC-Q and PPAP	Active	Output	1	1.7	5.5	0.23	3	5	8	76	2	20	1	90	CMOS	-40 to 85	TSOP-5 / SOT-23-5
NCS2003SN2T1G	0.2	Pb-free Halide free non AEC-Q and PPAP	Active	Output	1	1.7	5.5	0.23	3	7	8	76	2	20	1	90	CMOS	-40 to 85	TSOP-5 / SOT-23-5
NCV2003SN2T1G	0.222	AEC Qualified PPAP Capable Pb-free Halide free	Active	Output	1	1.7	5.5	0.23	3	7	8		2	20	1	90	CMOS	-40 to 125	TSOP-5 / SOT-23-5

For more information please contact your local sales support at www.onsemi.com.

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