

## Product Overview

### NCS2250: Comparator, High Speed, 50 ns, Low Voltage, Rail-to-Rail, Push-Pull

For complete documentation, see the data sheet.

The NCS2250 low voltage comparators feature fast response time and rail-to-rail input and output. The extended common mode input voltage range allows inputs signals 200 mV above and below the rails, allowing voltage detection at ground or the supply. A propagation delay of 50 ns with a 100 mV overdrive makes this comparator suitable for applications requiring faster response times.

These single channel devices are available with a complementary push-pull output in the NCS2250 and are offered in SOT23-5 and SC70-5 packages. Automotive qualified devices are also available, denoted by the NCV prefix.

#### Features

- Propagation delay: 50 ns with 100 mV overdrive
- Rail-to-rail input: VSS -200 mV to VDD +200 mV
- Supply voltage: 1.8 V to 5.5 V
- Supply current: 150  $\mu$ A typical at 5 V supply
- Push-pull output
- Packages: SC-70 and SOT23-5
- AEC-Q100 qualified and PPAP capable options available

#### Applications

- Voltage threshold detector
- Zero-crossing detectors
- High-speed sampling circuits
- Logic level shifting/translation
- Clock and data signal restoration

#### Benefits

- Fast propagation to meet high speed sampling needs
- Flexible use across a wide range of input signals including the supply rails
- Low voltage supply capable down to 1.8V allows the device to be compatible with low voltage systems
- Low supply current reduces power consumption
- Ready for high-z load or input pins
- Available in small packages
- Meets automotive requirements

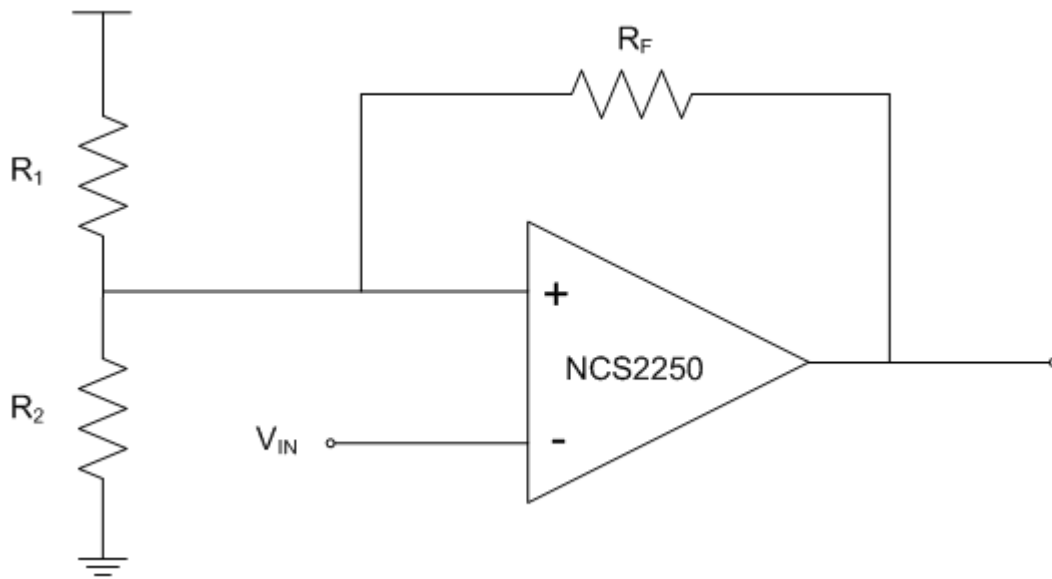
#### End Products

- Automotive
- Lighting
- Smartphones, cell phones
- Portable and battery-powered systems
- Power supplies

### Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Channels	V <sub>CC</sub> Min (V)	V <sub>CC</sub> Max (V)	I <sub>O</sub> Typ (mA)	I <sub>CC</sub> Typ (mA)	t <sub>res</sub> Typ (ns)	V <sub>IQ</sub> Max (mV)	T <sub>A</sub> Min (°C)	T <sub>A</sub> Max (°C)	Package Type
NCS2250SN2T1G	0.1616	Pb-free	Active	1	1.8	5.5	50	0.15	50	6	-40	125	TSOP-5 / SOT-23-5
		Halide free non AEC-Q and PPAP											
NCS2250SQ2T2G	0.1616	Pb-free	Active	1	1.8	5.5	50	0.15	50	6	-40	125	SC-88A / SC-70-5
		Halide free non AEC-Q and PPAP											
NCV2250SN2T1G	0.1923	AEC Qualified	Active	1	1.8	5.5	50	0.15	50	6	-40	125	TSOP-5 / SOT-23-5
		PPAP Capable											
		Pb-free											
		Halide free											
NCV2250SQ2T2G	0.1923	AEC Qualified	Active	1	1.8	5.5	50	0.15	50	6	-40	125	SC-88A / SC-70-5
		PPAP Capable											
		Pb-free											
		Halide free											

## Application Diagram



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

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