

## Product Overview

### NCV2902: Operational Amplifier, Single Supply, Quad

For complete documentation, see the data sheet.

The LM324 series are low-cost, quad op-amps with true differential inputs. They have several distinct advantages over standard operational amplifier types in single supply applications. The quad amplifier can operate at supply voltages as low as 3.0 V or as high as 32 V with quiescent currents about one-fifth of those associated with the MC1741 (on a per amplifier basis). The common mode input range includes the negative supply, thereby eliminating the necessity for external biasing components in many applications. The output voltage range also includes the negative power supply voltage.

### Features

- Short Circuited Protected Outputs
- True Differential Input Stage
- Single Supply Operation: 3.0 V to 32 V (LM224, LM324, LM324A)
- Low Input Bias Currents: 100 nA Maximum (LM324A)
- Four Amplifiers Per Package
- Internally Compensated
- Common Mode Range Extends to Negative Supply
- Industry Standard Pinouts
- ESD Clamps on the Inputs Increase Ruggedness without Affecting Device Operation
- Pb-Free Packages are Available\*

For more features, see the data sheet

### Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Rail to Rail	Channels	V <sub>S</sub> Min (V)	V <sub>S</sub> Max (V)	I <sub>q</sub> Typ (mA)	V <sub>OS</sub> Max (mV)	GB W Typ (MHz)	SR Typ (V/μs)	I <sub>O</sub> Typ (mA)	ΔV <sub>OS</sub> /ΔT (μV/C)	e <sub>N</sub> (nV/√Hz)	I <sub>bias</sub> Typ (pA)	CM RR Typ (dB)	Architecture	Temperature Range (°C)	Package Type
NCV2902DR2G	0.142	AEC Qualified PPAP Capable Pb-free Halide free	Active	No	4	3	32	0.35	7	1	0.6	40	7	-	-90000	70	Bipolar	-40 to 125	SOIC-14
NCV2902DTBR2G	0.1597	AEC Qualified PPAP Capable Pb-free Halide free	Active	No	4	3	32	0.35	7	1	0.6	40	7	-	-90000	70	Bipolar	-40 to 125	TSSOP-14

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