

D.5 OPERATIONAL AMPLIFIERS

AD-741 Low-Cost General-Purpose
Bipolar Op Amp*

Low Cos
High Accuracy IC Op Amp

AD741 Series

FEATURES

Precision Input Characteristics

Low V_{OS} : 0.5 mV max (L)

Low V_{OS} Drift: 5 μ V/ $^{\circ}$ C max (L)

Low I_{b} : 50 nA max (L)

Low I_{os} : 5 nA max (L)

High CMRR: 90 dB min (K, L)

High Output Capability

A_{OL} = 25,000 min; 1 k Ω Load (J, S)

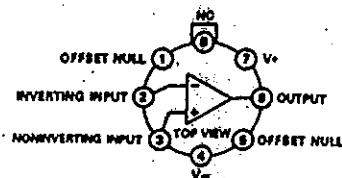
T_{min} to T_{max}

V_o = \pm 10 V min; 1 k Ω Load (J, S)

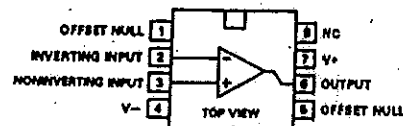
Chips and MIL-STD-883B Parts Available

FUNCTIONAL BLOCK DIAGRAMS

TO-99 (H) Package



Mini-DIP (N) Package



GENERAL DESCRIPTION

The Analog Devices AD741 Series are high performance monolithic operational amplifiers. All the devices feature full short circuit protection and internal compensation.

The Analog Devices AD741J, AD741K, AD741L, and AD741S are specially tested and selected versions of the standard AD741 operational amplifier. Improved processing and additional electrical testing guarantee the user precision performance at a very low cost. The AD741J, K and L substantially increase overall accuracy over the standard AD741C by providing maximum limits on offset voltage drift and significantly reducing the errors due to offset voltage, bias current, offset current, voltage gain, power supply rejection, and common-mode rejection. For example, the AD741L features maximum offset voltage drift of 5 μ V/ $^{\circ}$ C, offset voltage of 0.5 mV max, offset current of 5 nA max, bias current of 50 nA max, and a CMRR of 90 dB min. The AD741S offers guaranteed performance over the extended temperature range of -55° C to $+125^{\circ}$ C, with max offset voltage drift of 15 μ V/ $^{\circ}$ C, max offset voltage of 4 mV, max offset current of 25 nA, and a minimum CMRR of 80 dB.

HIGH OUTPUT CAPABILITY

Both the AD741J and AD741S offer the user the additional advantages of high guaranteed output current and gain at low values of load impedance. The AD741J guarantees a minimum gain of 25,000 swinging \pm 10 V into a 1 k Ω load from 0 to $+70^{\circ}$ C. The AD741S guarantees a minimum gain of 25,000 swinging \pm 10 V into a 1 k Ω load from -55° C to $+125^{\circ}$ C.

All devices feature full short circuit protection, high gain, high common-mode range, and internal compensation. The AD741J, K and L are specified for operation from 0 to $+70^{\circ}$ C, and are available in both the TO-99 and mini-DIP packages. The AD741S is specified for operation from -55° C to $+125^{\circ}$ C, and is available in the TO-99 package.