

GENERAL PURPOSE SINGLE OPERATIONAL AMPLIFIER

- LARGE INPUT VOLTAGE RANGE
- NO LATCH-UP
- HIGH GAIN
- SHORT-CIRCUIT PROTECTION
- NO FREQUENCY COMPENSATION
- REQUIRED
- SAME PIN CONFIGURATION AS THE UA709

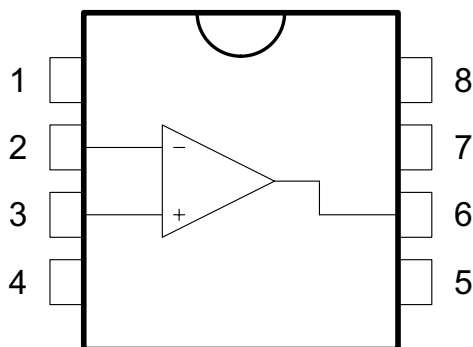
DESCRIPTION

The UA741 is a high performance monolithic operational amplifier constructed on a single silicon chip. It is intended for a wide range of analog applications.

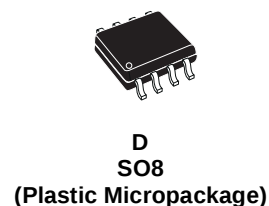
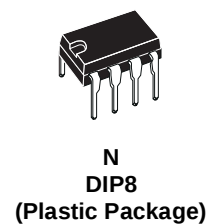
- Summing amplifier
- Voltage follower
- Integrator
- Active filter
- Function generator

The high gain and wide range of operating voltages provide superior performances in integrator, summing amplifier and general feedback applications. The internal compensation network (6dB/octave) insures stability in closed loop circuits.

PIN CONNECTIONS (top view)



- 1 - Offset null 1
- 2 - Inverting input
- 3 - Non-inverting input
- 4 - V_{CC}^-
- 5 - Offset null 2
- 6 - Output
- 7 - V_{CC}^+
- 8 - N.C.



ORDER CODE

Part Number	Temperature Range	Package	
		N	D
UA741C	0°C, +70°C	•	•
UA741I	-40°C, +105°C	•	•
UA741M	-55°C, +125°C	•	•

Example : UA741CN

N = Dual in Line Package (DIP)
D = Small Outline Package (SO) - also available in Tape & Reel (DT)

ELECTRICAL CHARACTERISTICS $V_{CC} = \pm 15V$, $T_{amb} = +25^{\circ}C$ (unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Unit
V_{io}	Input Offset Voltage ($R_S \leq 10k\Omega$) $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$		1	5 6	mV
I_{io}	Input Offset Current $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$		2	30 70	nA
I_{ib}	Input Bias Current $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$		10	100 200	nA
A_{vd}	Large Signal Voltage Gain ($V_O = \pm 10V$, $R_L = 2k\Omega$) $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$	50 25	200		V/mV
SVR	Supply Voltage Rejection Ratio ($R_S \leq 10k\Omega$) $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$	77 77	90		dB
I_{CC}	Supply Current, no load $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$		1.7	2.8 3.3	mA
V_{icm}	Input Common Mode Voltage Range $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$	± 12 ± 12			V
CMR	Common Mode Rejection Ratio ($R_S \leq 10k\Omega$) $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$	70 70	90		dB
I_{OS}	Output short Circuit Current	10	25	40	mA
$\pm V_{opp}$	Output Voltage Swing $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$ $R_L = 10k\Omega$ $R_L = 2k\Omega$ $R_L = 10k\Omega$ $R_L = 2k\Omega$	12 10 12 10	14 13		V
SR	Slew Rate $V_i = \pm 10V$, $R_L = 2k\Omega$, $C_L = 100pF$, unity Gain	0.25	0.5		V/ μs
t_r	Rise Time $V_i = \pm 20mV$, $R_L = 2k\Omega$, $C_L = 100pF$, unity Gain		0.3		μs
K_{ov}	Overshoot $V_i = 20mV$, $R_L = 2k\Omega$, $C_L = 100pF$, unity Gain		5		%
R_i	Input Resistance	0.3	2		M Ω
GBP	Gain Bandwidth Product $V_i = 10mV$, $R_L = 2k\Omega$, $C_L = 100pF$, $f = 100kHz$	0.7	1		MHz
THD	Total Harmonic Distortion $f = 1kHz$, $A_v = 20dB$, $R_L = 2k\Omega$, $V_O = 2V_{pp}$, $C_L = 100pF$, $T_{amb} = +25^{\circ}C$		0.06		%
e_n	Equivalent Input Noise Voltage $f = 1kHz$, $R_S = 100\Omega$		23		$\frac{nV}{\sqrt{Hz}}$
ϕ_m	Phase Margin		50		Degrees