

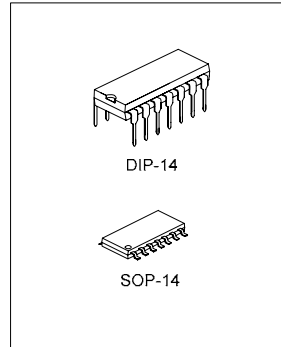
LOW NOISE J-FET QUAD OPERATIONAL AMPLIFIERS DESCRIPTION

The UTC074 is a high speed J-FET input quad operational amplifiers incorporating well matched, high voltage J-FET and bipolar transistors in a monolithic integrated circuit.

The device features high slew rates, low input bias and offset currents, and low offset voltage temperature coefficient.

FEATURES

- * Wide common-mode and differential voltage range
- * Low input bias and offset current
- * Low noise $e_n=15\text{nv}/\sqrt{\text{Hz}}(\text{typ})$
- * Output short-circuit protection
- * High input impedance J-FET input stage
- * Low harmonic distortion:0.01%(typ)
- * Internal frequency compensation

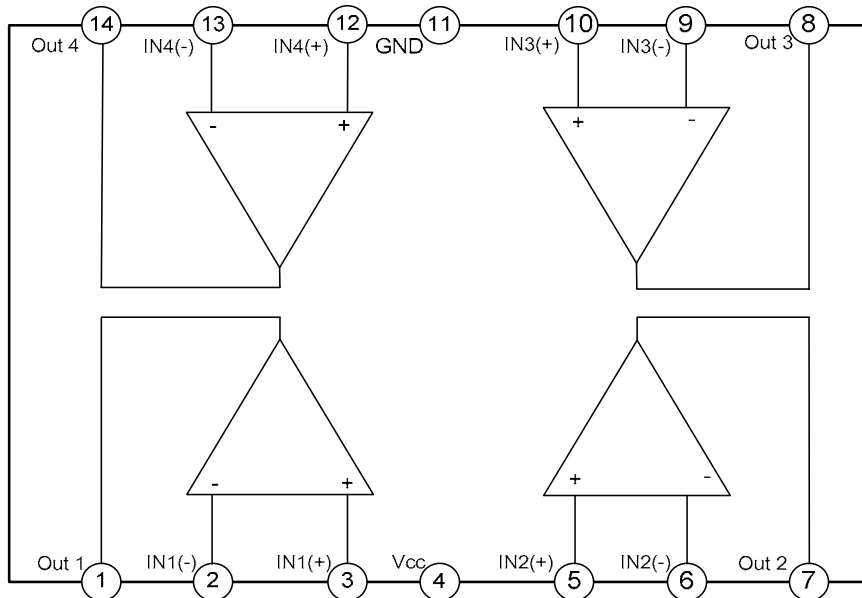


ORDERING INFORMATION

Device	Package
UTC074	DIP-14-300-2.54
UTC074E	SOP-14-225-1.27

- * Latch up free operation
- * High slew rate:13V/ $\mu\text{s}(\text{typ})$

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage-note1	Vcc	±18	V
Input Voltage-note2	Vi	±15	V
Differential Input Voltage –note3	Vi(diff)	±30	V
Power Dissipation	Pd	680	mW
Output Short-Circuit Duration- note4		Infinite	
Operating Free-air Temperature	Topr	0 to +70	°C
Storage Temperature Range	Tstg	-65 to 150	°C

1. All voltage values,except differential voltage ,are with respect to zero reference level (ground) of the supply voltages where the zero reference level is the midpoint between Vcc+ and Vcc-.
2. The magnitude of the input voltage must never exceed the magnitude of the supply voltage or 15 volts,whichever is less .
3. Differential voltages are the non-inverting input terminal with respect to the inverting input interminal.
4. The output may be shorted to ground or to either supply. Temperature and/or supply voltages must be limited to ensure that the dissipation rating is not exceeded.

ELECTRICAL CHARACTERISTICS

(Vcc=±15V,Ta=+25°C,unless otherwise specified)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Input Offset Voltage(Rs=50Ω)	V _{IO}	Ta=+25°C Tmin≤Ta≤Tmax	3		10 13	mV
Input Offset Voltage drift	DV _{IO}			10		μF/°C
Input Offset Current	I _{IO}	Ta=+25°C Tmin≤Ta≤Tmax		5	100 10	pA nA
Input Bias Current	I _{BIAS}	Ta=+25°C Tmin≤Ta≤Tmax		30	200 20	pA nA
Large Single Voltage Gain (R _L =2KΩ,V _O =±10V)	GV	Ta=+25°C Tmin≤Ta≤Tmax	25 15	200		V/mV
Power Supply Rejection Ratio (Rs=50Ω)	PSRR	Ta=+25°C Tmin≤Ta≤Tmax	70 70	86		dB
Supply Current,no load, per amplifier	I _{CC}	Ta=+25°C Tmin<Ta<Tmax		1.4	2.5 2.5	mV
Input Common-mode Voltage Range	V _{I(R)}		±11	+15 -12		V
Common-mode rejection Ratio	CMRR	Ta=+25°C Tmin≤Ta≤Tmax	70 70	86		dB

UTC074

LINEAR INTEGRATED CIRCUIT

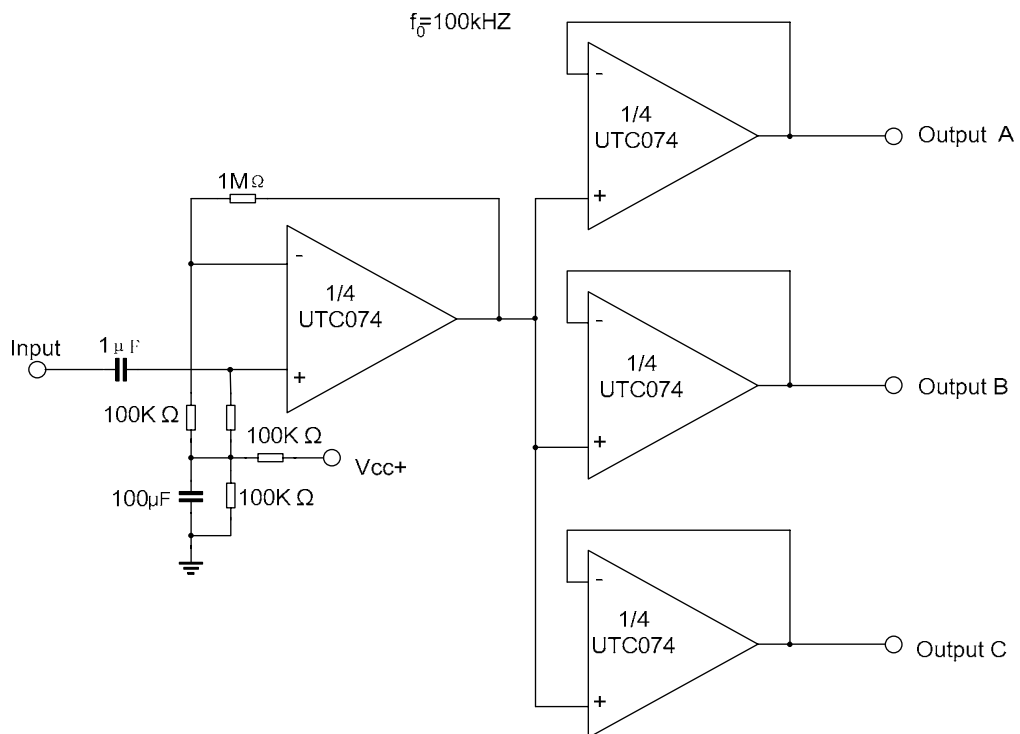
Output Shout-Circuit Current	I _{os}	T _a =+25°C T _{min} ≤T _a ≤T _{max}	10 10	40 60	60 60	mA
Output Voltage Swing	±V _{opp}	T _a =+25°C R _L =2KΩ R _L =10KΩ T _{min} ≤T _a ≤T _{max} R _L =2KΩ R _L =10KΩ	10 12 10 12	12 13.5		V
Slew Rate	SR	T _a =+25°C V _{in} =10V, R _L =2KΩ, C _L =100pF, unity again	8	13		V/μs
Rise Time	T _R	T _a =+25°C V _{in} =20mV, R _L =2KΩ, C _L =100pF, unity again		0.1		μs
Overshoot	K _{OV}	T _a =+25°C V _{in} =20mV, R _L =2KΩ, C _L =100pF, unity again		10		%
Gain Band Product	GBP	T _a =+25°C V _{in} =10mV, R _L =2KΩ, C _L =100pF, f=100kHz	2	3		MHZ
Input Resisance	R _i			10 ¹²		Ω
Total Harmonic Distortion	THD	T _a =+25°C f=1kHz, R _L =2KΩ, C _L =100pF, A _v =20dB, V _o =2Vpp		0.01		%
Equivalent Input Noise Voltage	E _N	R _s =100Ω, f=1KHz		15		$\frac{nV}{\sqrt{Hz}}$
Phase Margin	Φ _M			45		degree
Channel Separation	V _{o1} /V _{o2}	A _v =100		120		dB

UTC074

LINEAR INTEGRATED CIRCUIT

TYPICAL APPLICATIONS

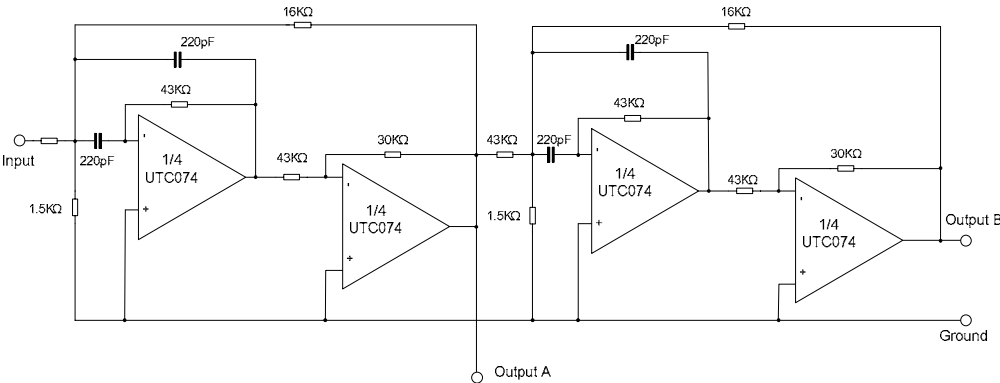
AUDIO DISTRIBUTION AMPLIFIER



UTC074

LINEAR INTEGRATED CIRCUIT

POSITIVE FEEDBACK BANDPASS FILTER



PACKAGE OUTLINE

