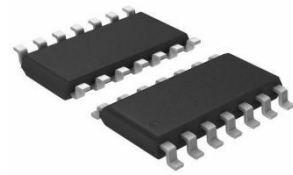
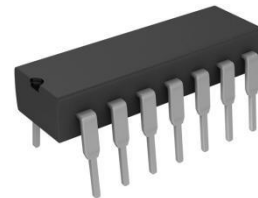


HX084-S/HX084-P/HX084A-S/HX084A-P Low Power Quad Operational Amplifier

The HX084-S/HX084-P/HX084A-S/HX084A-P features four independent high gain operational amplifiers with internal frequency compensation. These four op-amps operate over a wide voltage range using either a single power supply or a split power supply. The device exhibits low power supply current drain, regardless of the power supply voltage, making it suitable for battery-operated applications. When your project requires a traditional op-amp function, you can simplify your design by utilizing a single +5VDC power supply commonly found in various digital systems or personal computer applications, eliminating the need for an additional 15V power supply solely for interface electronics. The HX084-S/HX084-P/HX084A-S/HX084A-P is a versatile and durable component capable of amplifying signals from various transducers, serving as a dc gain block, or performing any op-amp function. The accompanying pages provide useful instructions that will expedite the progress of your project.



SOP-14

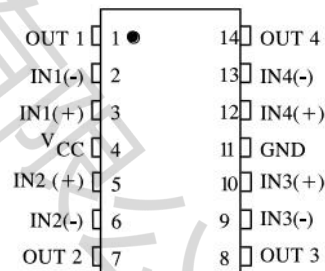


DIP-14

FEATURES

- Internally frequency compensated for unity gain
- Large DC voltage gain: 100dB
- Wide power supply range:
3V ~ 32V (or $\pm 1.5V \sim \pm 16V$)
- Input common-mode voltage range includes ground
- Large output voltage swing: 0V DC to $V_{CC}-1.5V$ DC
- Power drain suitable for battery operation
- Low input offset voltage and offset current
- Differential input voltage range equal to the power supply voltage

PIN ASSIGNMENT



Product Information

	Package Information	temperature	Orchestration	quantity
HX084-S	SOP-14	0°C~70°C	Taping	2500
HX084-P	DIP-14	0°C~70°C	Taping	1000
HX084A-S	SOP-14	-40°C~85°C	Taping	2500
HX084A-P	DIP-14	-40°C~85°C	Taping	1000

RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Min	Max	Unit
V _{CC}	DC Supply Voltage	± 2.5 or 5.0	± 15 or 30	V
T _A	Operating Temperature, All Package Types	-40	+105	°C

MAXIMUM RATINGS			
Symbol	Parameter	Value	Unit
V _{CC}	Power Supply Voltages Single Supply Split Supplies	32±16	V
V _{IDR}	Input Differential Voltage Range ^a	±32	V
V _{ICR}	Input Common Mode Voltage Range	-0.3 to 32	V
I _{SC}	Output Short Circuit Duration	Continuous	
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature Plastic Packages	-55 to +125	°C
I _{IN}	Input Current, per pin ^b	50	mA
T _L	Lead Temperature, 1mm from Case for 10 Seconds	260	°C

Notes

a. Split Power Supplies.

b. V_{IN}<0.3V. This input current will only exist when voltage at any of the input leads is driven negative.

DC ELECTRICAL CHARACTERISTICS (TA=-40 to +105°C)						
Symbol	Parameter	Test Conditions	Guaranteed Limit			Unit
			Min	Typ	Max	
V _{IO}	Maximum Input Offset Voltage	V _O =1.4V V _{CC} =5.0-			7.0	mV
ΔV _{IO} /ΔT	Input Offset Voltage	R _S =0Ω, V _{CC} =30V		7.0		μV/°C
I _{IO}	Maximum Input Offset Current	V _{CC} =5.0V			150	nA
ΔI _{IO} /ΔT	Input Offset Current Drift	R _S =0Ω, V _{CC} =30V		10		pA/°C
I _{IB}	Maximum Input Bias Current	V _{CC} =5.0V			500	nA
V _{ICR}	Input Common Mode Voltage Range	V _{CC} =30V	0		28	V
I _{CC}	Maximum Power Supply Current	R _L =∞, V _{CC} =30V, V _O =0V R _L =∞, V _{CC} =5V, V _O =0V			3 1.2	mA
AVOL	Minimum Large Signal Open-Loop Voltage Gain	V _{CC} =15V, R _L ≥2KΩ	15 25 ^a			V/mV
VOH	Minimum Output High- Level Voltage Swing	V _{CC} =30V, R _L =2KΩ V _{CC} =30V, R _L =10KΩ	26 27			V
VOL	Maximum Output Low- Level Voltage	V _{CC} =5V, R _L =10KΩ			20	mV
CMR	Common Mode	V _{CC} =30V, R _S =10KΩ	65 ^a			dB
PSR	Power Supply Rejection	V _{CC} =30V	65 [*]			dB
CS	Channel Separation	f=1KHz to 20KHz, V _{CC} =30V	-120 ^a			dB
I _{SC}	Maximum Output Short Circuit to GND	V _{CC} =5.0V			60 ^a	mA
I _{source}	Minimum Output Source Current	V _{IN+} =1V, V _{IN-} =0V,	20		50	mA
I _{sink}	Minimum Output Sink Current	V _{IN+} =0V, V _{IN-} =1V,	5			mA
V _{IDR}	Differential Input Voltage Range	All V _{IN} ≥GND or V-Supply (if used)			V _{CC} ^a	V

Notes

a. =@25°C

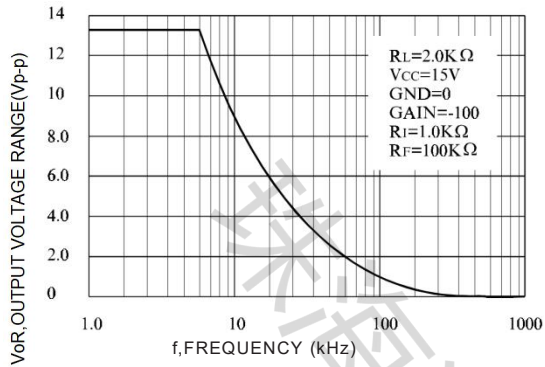


Fig 1. Large-Signal Frequency Response

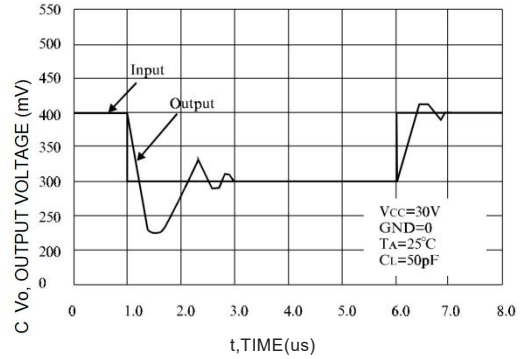


Fig 2. Small-Signal Voltage Follower Pulse Response

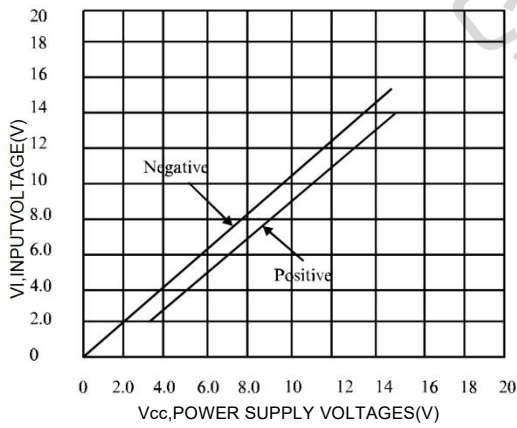


Fig 3. Input Voltage Range

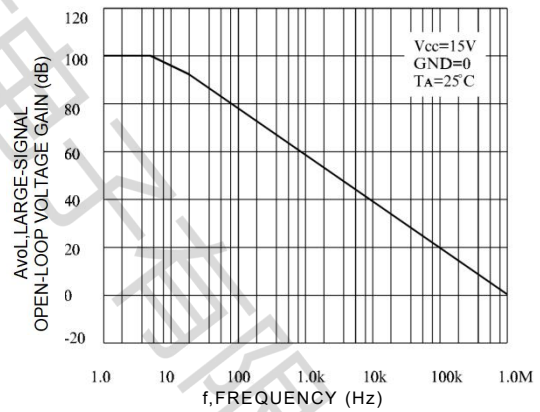


Fig 4. Open-Loop Frequency

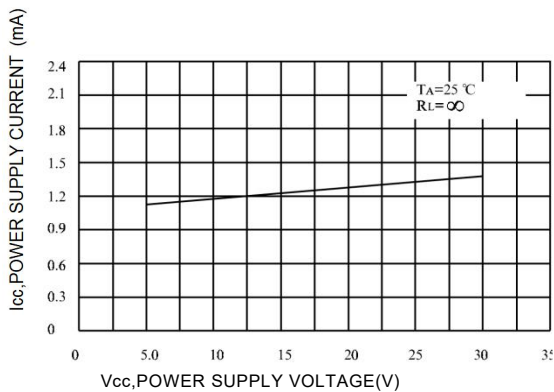


Fig 5. Power Supply Current versus Power Supply Voltage

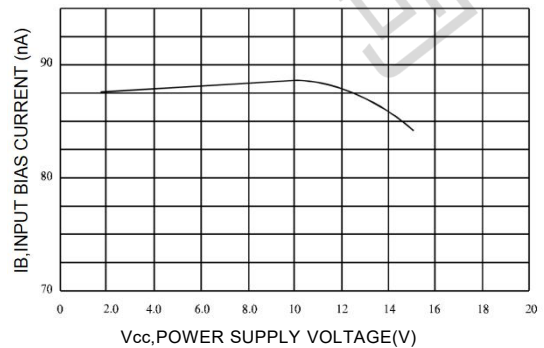
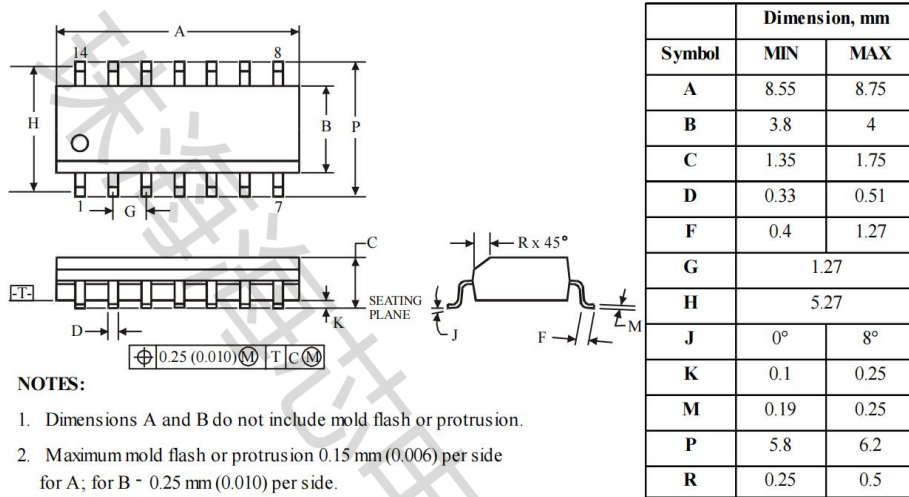


Fig 6. Input Bias Current versus Power Supply Voltage

Package Information

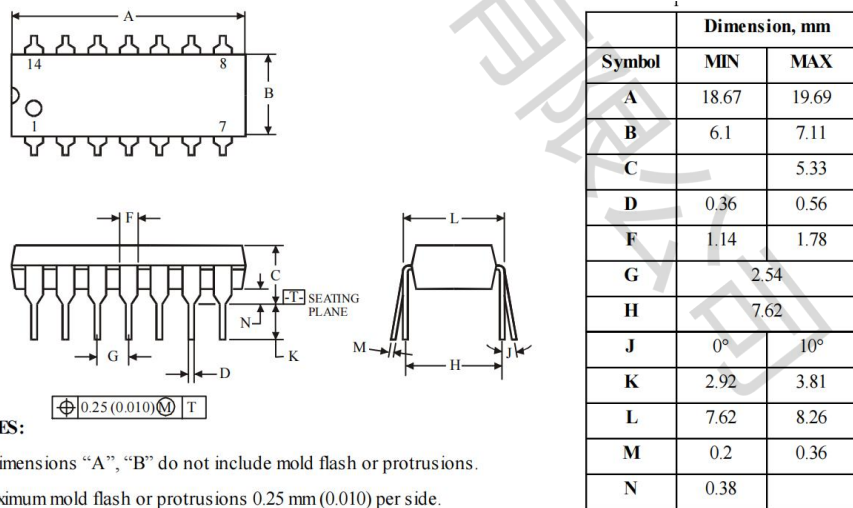
SOP14 (Package Outline Dimensions)



NOTES:

- Dimensions A and B do not include mold flash or protrusion.
- Maximum mold flash or protrusion 0.15 mm (0.006) per side for A; for B - 0.25 mm (0.010) per side.

DIP14 (Package Outline Dimensions)



NOTES:

- Dimensions "A", "B" do not include mold flash or protrusions.
Maximum mold flash or protrusions 0.25 mm (0.010) per side.

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