

HX072-S/HX072-P/HX072A-S/HX072A-P JFET Low Power Dual Operational Amplifier

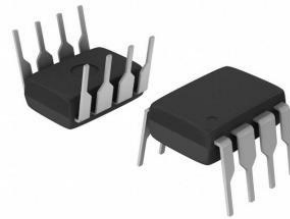
The HX072-S/HX072-P/HX072A-S/HX072A-P is equipped with two separate high gain operational amplifiers that feature internal frequency compensation. These op-amps can function effectively within a wide voltage range using a single power supply or a split power supply. The device exhibits low power supply current drain, regardless of the power supply voltage, making it an ideal choice for battery-operated applications. When your project requires a traditional op-amp function, you can now 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 HX072-S/HX072-P/HX072A-S/HX072A-P is a versatile and durable component that can be utilized for a myriad of purposes, including amplifying signals from different 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.

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

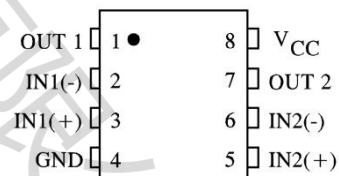


SOP-8



DIP-8

PIN ASSIGNMENT



Product Information

	Package Information	temperature	Orchestration	quantity
HX072-S	SOP-8	0°C~70°C	Taping	2500
HX072-P	DIP-8	0°C~70°C	Taping	1000
HX072A-S	SOP-8	-40°C~85°C	Taping	2500
HX072A-P	DIP-8	-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	0	+70	°C

MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	Power Supply Voltages	32 $\pm$ 16	V
V_{IDR}	Input Differential Voltage Range ^a	$\pm$ 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	$^{\circ}$ C
T_{stg}	Storage Temperature	-55 to +125	$^{\circ}$ C
I_{IN}	Input Current, per pin ^b	50	mA
T_L	Lead Temperature, 1mm from Case for 10 Seconds	260	$^{\circ}$ C

Notes

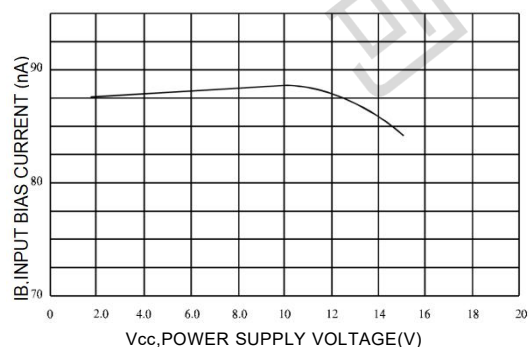
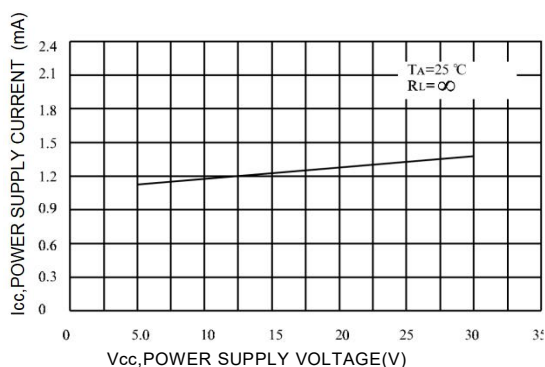
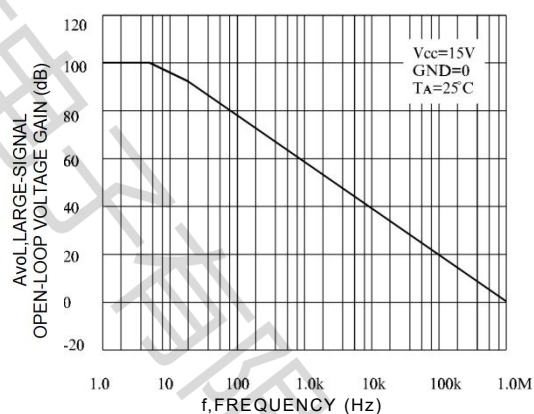
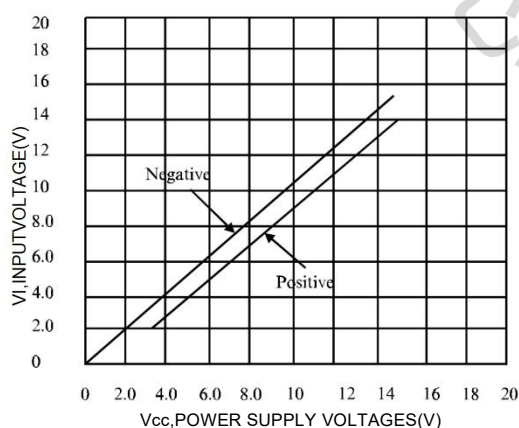
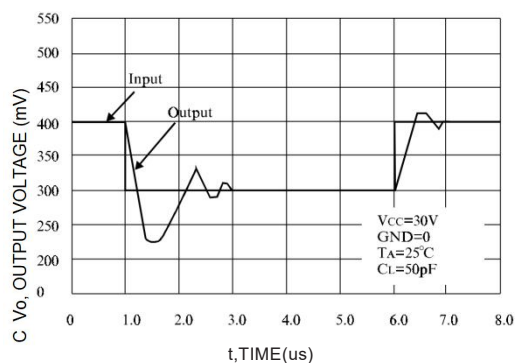
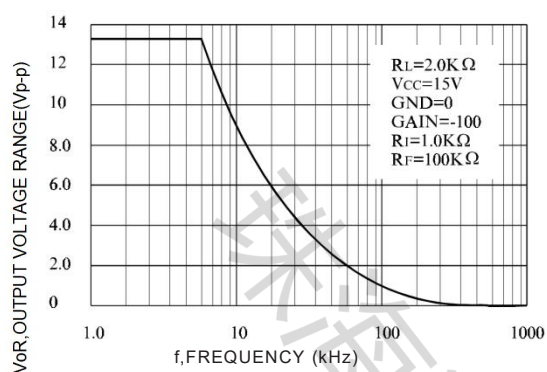
a. Split Power Supplies.

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 ($T_A = 0$ to $+70^{\circ}C$)

Symbol	Parameter	Test Conditions	Guaranteed Limit			Unit
			Min	Typ	Max	
V_{IO}	Maximum Input Offset Voltage	$V_O = 1.4V$, $V_{CC} = 5.0-30V$; $R_S = 0\Omega$ $V_{ICM} = 0V$ to $V_{CC} - 1.7V$			9.0	mV
$\Delta V_{IO}/\Delta T$	Input Offset Voltage Drift	$R_S = 0\Omega$, $V_{CC} = 30V$		7.0		$\mu V/^{\circ}C$
I_{IO}	Maximum Input Offset Current	$V_{CC} = 5.0V$			150	nA
$\Delta I_{IO}/\Delta T$	Input Offset Current Drift	$R_S = 0\Omega$, $V_{CC} = 30V$		10		$pA/^{\circ}C$
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	$R_L = \dots$, $V_{CC} = 30V$, $V_O = 0V$ $R_S = \dots$, $V_{CC} = 5V$, $V_O = 0V$			3	mA
A_{VOL}	Minimum Large Signal Open-Loop Voltage Gain	$V_{CC} = 15V$, $R_L \geq 2K\Omega$	15			V/mV
V_{OH}	Minimum Output High- Level Voltage Swing	$V_{CC} = 30V$, $R_L = 2K\Omega$ $V_{CC} = 30V$, $R_L = 10K\Omega$	26 27			V
V_{OL}	Maximum Output Low- Level Voltage Swing	$V_{CC} = 5V$, $R_L = 10K\Omega$			20	mV
CMR	Common Mode Rejection	$V_{CC} = 30V$, $R_S = 10K\Omega$	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*	mA
I_{source}	Minimum Source Output Current	$V_{IN+} = 1V$, $V_{IN-} = 0V$, $V_{CC} = 15V$, $V_O = 0V$	10			mA
I_{sink}	Minimum Output Sink Current	$V_{IN+} = 0V$, $V_{IN-} = 1V$, $V_{CC} = 15V$, $V_O = 15V$ $V_{IN+} = 0V$, $V_{IN-} = 1V$, $V_{CC} = 15V$, $V_O = 0.2V$	5 12 _a			mA μA
V_{IDR}	Differential Input	All $V_{IN} \geq GND$ or V-Supply (if used)			V_{CCa}	V

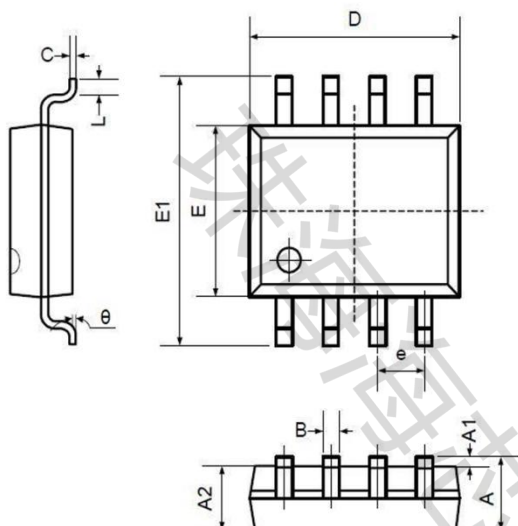
Notes

a. $\text{@}25^{\circ}C$



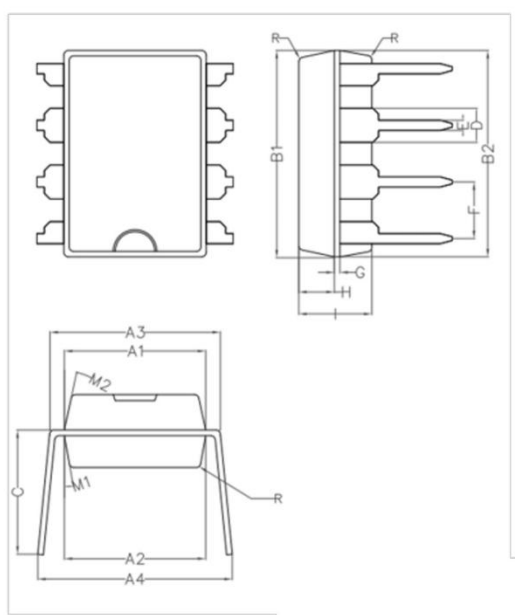
Package Information

SOP8 (Package Outline Dimensions)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
B	0.330	0.510	0.013	0.020
C	0.190	0.250	0.007	0.010
D	4.780	5.000	0.188	0.197
E	3.800	4.000	0.150	0.157
E1	5.800	6.300	0.228	0.248
e	1.270TYP		0.050TYP	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

DIP8 (Package Outline Dimensions)



Symbol	Min	Non	Max
A1	6.28	6.33	6.38
A2	6.33	6.38	6.43
A3	7.52	7.62	7.72
A4	7.80	8.40	9.00
B1	9.15	9.20	9.25
B2	9.20	9.25	9.30
C		5.57	
D		1.52	
E	0.43	0.45	0.47
F		2.54	
G		0.25	
H	1.54	1.59	1.64
I	3.22	3.27	3.32
R		0.20	
M1	9°	10°	11°
M2	11°	12°	13°

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