

HX5532-S/HX5532-P High-performance, low-noise dual op-amp

Overview

The HX5532-S/HX5532-P operational amplifiers stand out with their dual-op-amp design, exceptional high-performance, and ultra-low noise. Compared to most standard op-amps, they exhibit superior noise suppression, significantly enhanced output drive efficiency, and offer high small-signal and power bandwidths. These features make them ideal for high-quality audio equipment, precision instruments, control circuits, and telephone channel amplifiers, ensuring clear and stable signal transmission.

Characteristic

Small Signal Bandwidth: 10MHZ

Output driving capability: 600Ω, 10V effective value

input noise voltage: 5nV/√Hz(Typical value)

DC voltage gain: 50000

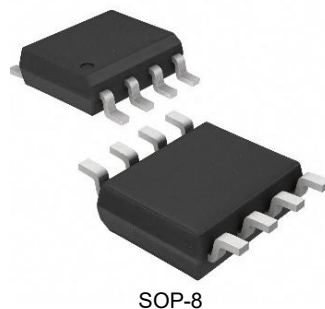
AC voltage gain: 2200Hz~10KHz

power bandwidth: 140KHz

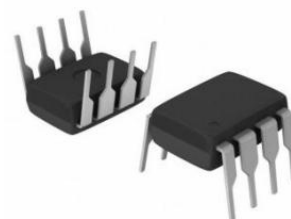
Slew rate: 9V/μs

Power supply voltage range: ±3V~±20V

Unit gain compensation

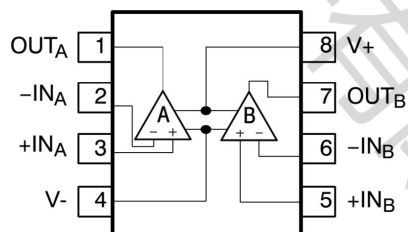


SOP-8

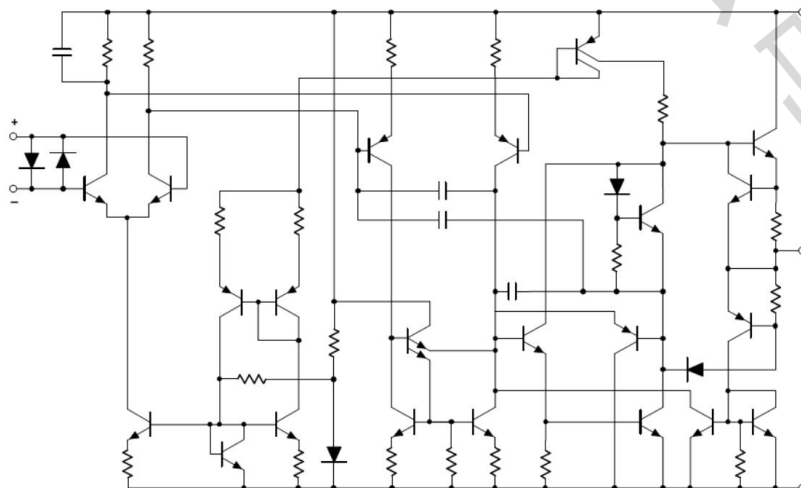


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Pin Diagram



Internal Equivalent Circuit

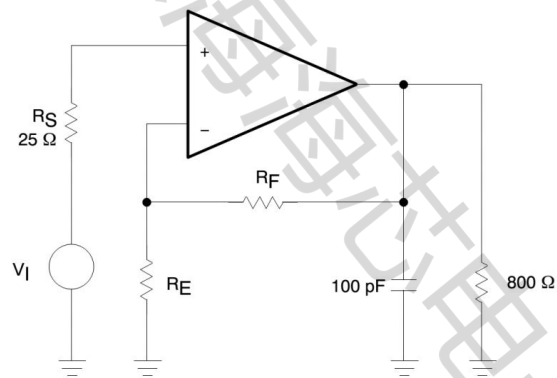


LIMIT PARAMETER			
SYMBOL	PARAMETER	NUMERICAL VALUE	UNIT
VS	Supply Voltage	±22	V
VIN	Input Voltage	±VS	V
VDIFF	Differential Input Voltage	±0.5	V
Tamb	Working Temperature Range	0 to 70	°C
Tstg	Storage Temperature	-65 to 150	°C
Tj	Junction temperature	150	°C
PD	Max power cons, SOP ENCAPSULATION	780	mW
	Tamb = 25 °C DIP ENCAPSULATION	1200	mW
Tsld	Weld Temp (10s Max).	230	°C

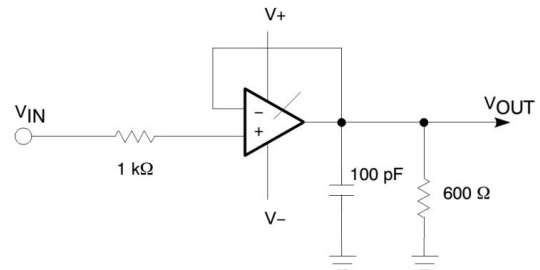
DC CHARS: T=25°C, VS=±15V (UNLESS SPECIFIED)						
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYPICAL	MAX	UNIT
Offset voltage	VOS			0.5	4.0	mV
Offset current	IOS			10	150	nA
Input Current	IB			300	800	nA
static current	ICC			8.0	16	mA
CM range	VCM		±12	±13		V
CMRR	CMRR		70	100		dB
PSRR	PSRR			10	100	uV/V
Large signal gain	AV	RL≥2.0KΩ; Vo=±10V	25	100		V/mV
		RL≥600Ω; Vo=±10V	15	50		
OUTPUT SWING	VOUT	RL≥600Ω	±12	±13		V
		RL≥600Ω; Vs=±18V	±15	±16		
		RL≥2.0KΩ	±13	±13.5		
Input Resistance	RIN		30	200		KΩ
IOS	ISC		10	50		mA

COMM CHARS: T25°C; VS±15V, unless noted.						
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYPICAL	MAX	UNIT
R_out	ROUT	AV = 30dB CL f=10KHz, RL = 600 Ω		0.3		Ω
Overshoot	-	voltage-follower Vin=100mVpp, CL = 100pF; RL = 600 Ω		10		%
Gain	AV	f=10KHz		2.2		V/mV
Gbp	GBW	CL = 100pF; RL = 600 Ω		10		MHz
Slew rate	SR	-		9.0		V/uS
Power bandwidth	-	VOUT = ±10V		140		KHz
		VOUT = ±14V; RL = 600Ω		100		
input noise voltage	VNOISE	fo = 30Hz		8.0		nV/√ Hz
		fo = 1.0KHz		5.0		
Input noise current	INOISE	fo = 30Hz		2.7		pA/√ Hz
		fo = 1.0KHz		0.7		
channel isolation	-	f=1.0KHz; RS = 5.0KΩ		110		dB

Test Line

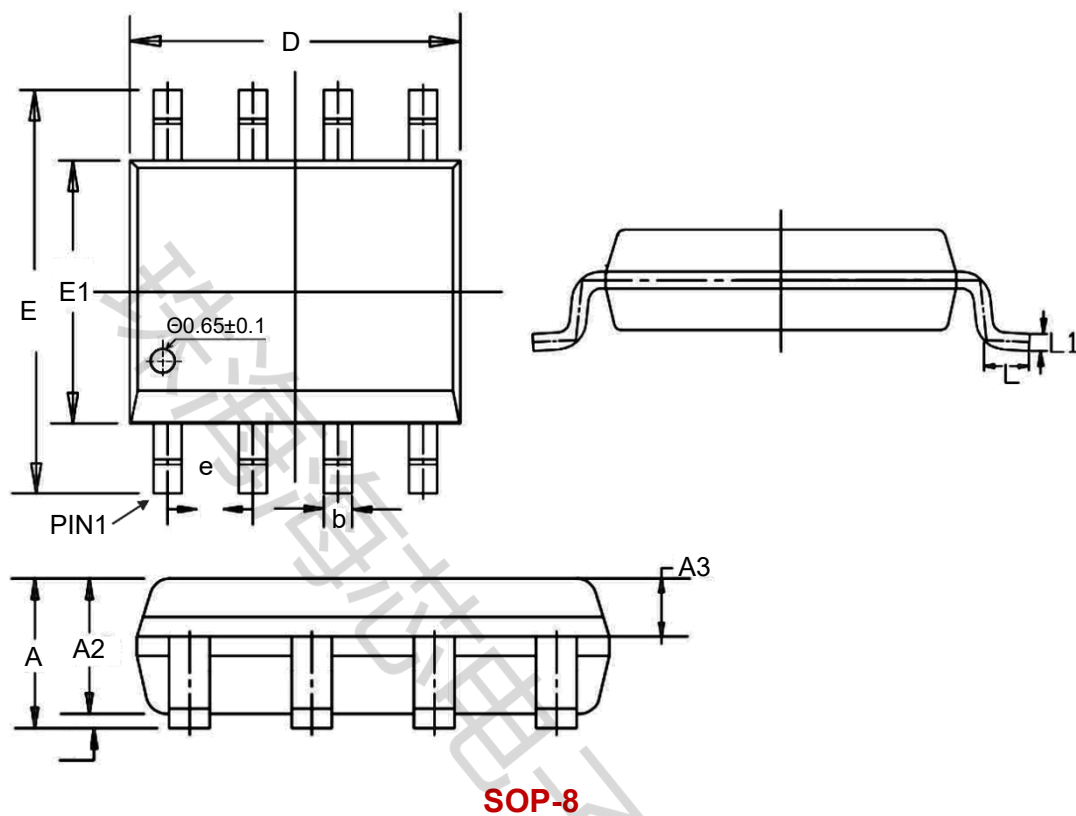


closed-loop frequency response



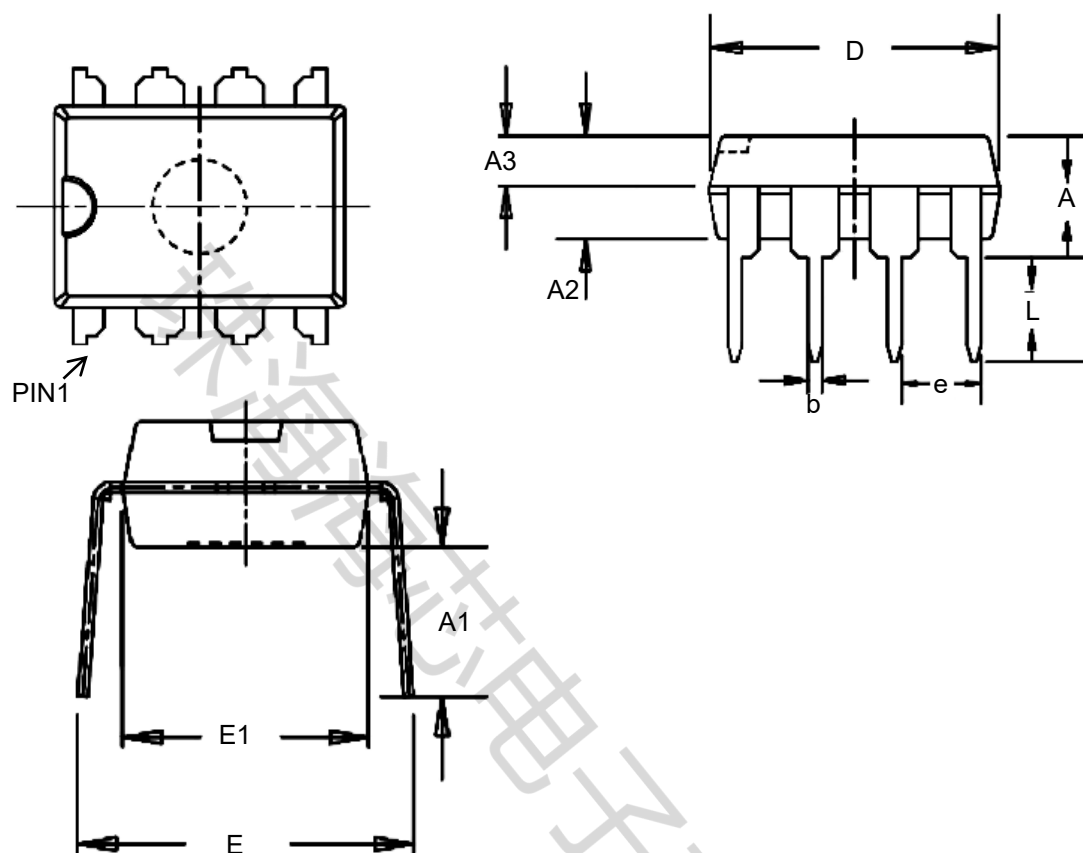
voltage-follower

DIMENSIONAL DRAWINGS



UNIT:mm

	MIN	NOM	MAX
A	1.450	1.550	1.650
A1	0.100	0.150	0.200
A2	1.300	1.400	1.500
A3	0.600	0.650	0.700
b	0.380		0.510
e	1.240	1.270	1.300
D	4.800	4.900	5.000
E	5.800	6.000	6.200
E1	3.800	3.900	4.000
L	0.450	0.600	0.750
L1		0.25BSC	



DIP-8

UNIT:mm

	MIN	NOM	MAX
A	3.600	3.800	4.000
A1	3.786	3.886	3.986
A2	3.200	3.300	3.400
A3	1.550	1.600	1.650
b	0.440		0.490
e	2.510	2.540	2.570
D	9.150	9.250	9.350
E	7.800	8.500	9.200
E1	6.280	6.380	6.480
L	3.000		

Part Number	Package Type	Package	quantity
HX5532-S	SOP-8	Taping	2500
HX5532-P	DIP-8	Taping	1000