

# NE5532

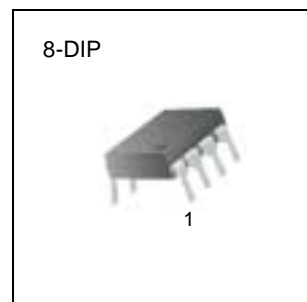
## Dual Operational Amplifier

### Features

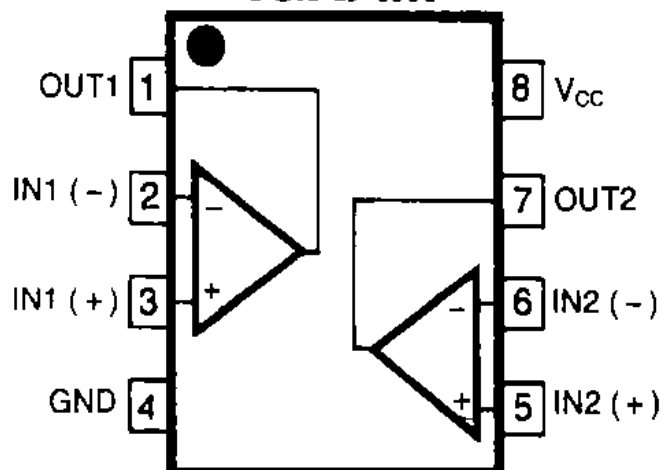
- Internal frequency compensation
- Slew Rate: 8V/μs
- Input noise voltage:  $8nV/\sqrt{Hz}$  ( $f_o = 30Hz$ )
- Full power bandwidth: 140KHz

### Description

The NE5532 is an internally compensated dual low noise OP AMP. The high small signal and power bandwidth provides superior performance in high quality AMP, all control circuits, and telephone applications.



### Internal Block Diagram



## Absolute Maximum Ratings

Parameter	Symbol	NE5532	Unit
Power Supply Voltage	V <sub>CC</sub>	±22	V
Differential Input Voltage	V <sub>IO</sub>	±13	V
Input Voltage	V <sub>I</sub>	Supply Voltage	V
Power Dissipation	P <sub>D</sub>	1000	mW
Operating Temperature Range	T <sub>OPR</sub>	0 ~ + 70	°C

## ELECTRICAL CHARACTERISTICS

(V<sub>CC</sub>=15V, V<sub>EE</sub>= - 15V, T<sub>A</sub> = 25°C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Input Offset Voltage	V <sub>IO</sub>	-	-	0.5	4.0	mV
Input Offset Current	I <sub>IO</sub>	-	-	10	150	nA
Input Bias Current	I <sub>BIAS</sub>	-	-	200	800	nA
Supply Current	I <sub>CC</sub>	-	-	6.0	16	mA
Input Voltage Range	V <sub>I(R)</sub>	-	±12	±13	-	V
Common Mode Rejection Range	CMRR	T <sub>A</sub> = 25 °C	70	100	-	dB
Power Supply Rejection Ratio	PSRR	T <sub>A</sub> = 25 °C	80	100	-	dB
Output Voltage Swing	V <sub>O(P-P)</sub>	R <sub>L</sub> ≥ 600Ω	±12	±13	-	V
Input Resistance	R <sub>I</sub>	T <sub>A</sub> = 25 °C	30	300	-	KΩ
Short Circuit Current	I <sub>SC</sub>	-	-	38	-	mA
Overshoot	OS	R <sub>L</sub> = 600Ω, C <sub>L</sub> = 100pF	-	10	20	%
Voltage Gain	G <sub>V</sub>	f = 10KHz	2	2.2	-	V/mV
Gain Bandwidth Product	GBW	C <sub>L</sub> = 100pF, R <sub>L</sub> = 600Ω	8	10	-	MHz
Slew Rate	SR	R <sub>L</sub> = 1K, C <sub>L</sub> = 100pF, R <sub>L</sub> = 600Ω	6	8.0	-	V/μs
Input Noise Voltage	V <sub>NI</sub>	f <sub>O</sub> = 30Hz f <sub>O</sub> = 1KHz	-	8.0 5.0	-	nV/√Hz

# Typical Performance Characteristics

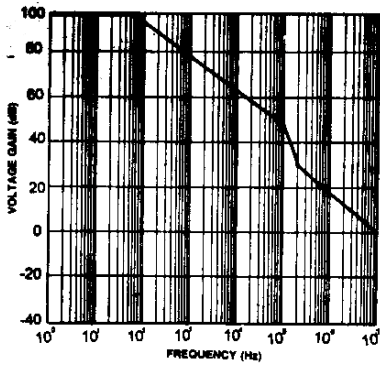


Figure 1. Open Loop Frequency Response

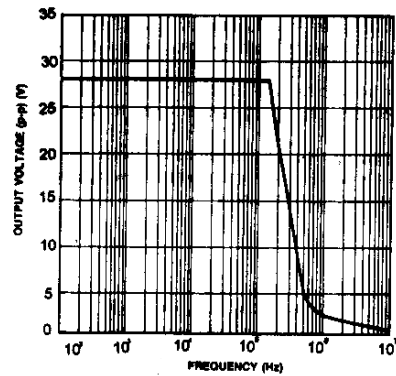


Figure 2. Large Signal Frequency Response

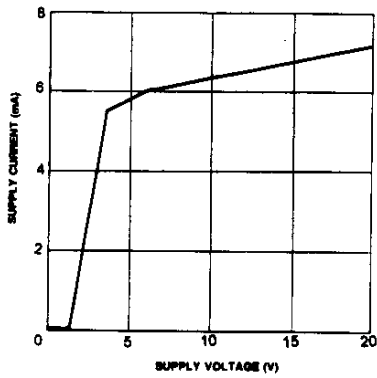


Figure 3. Supply Current vs Supply Voltage

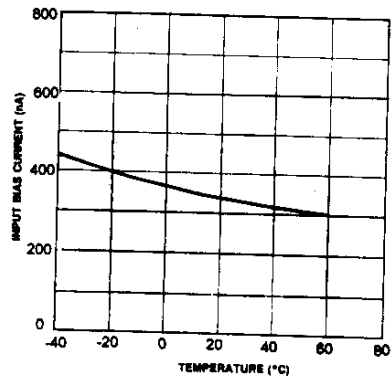


Figure 4. Input Bias Current vs Temperature

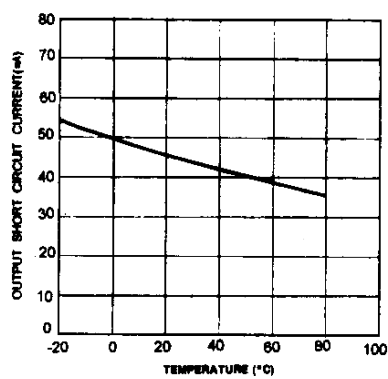


Figure 5. Output Circuit Current vs Temperature

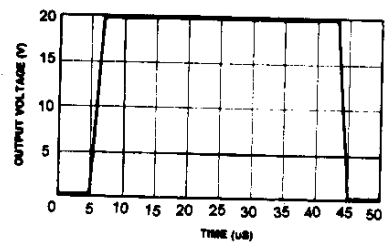
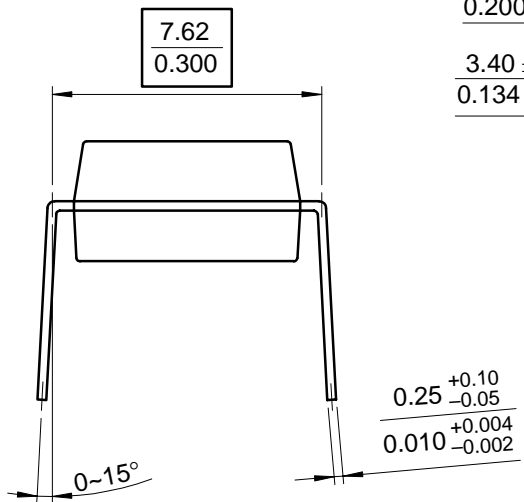
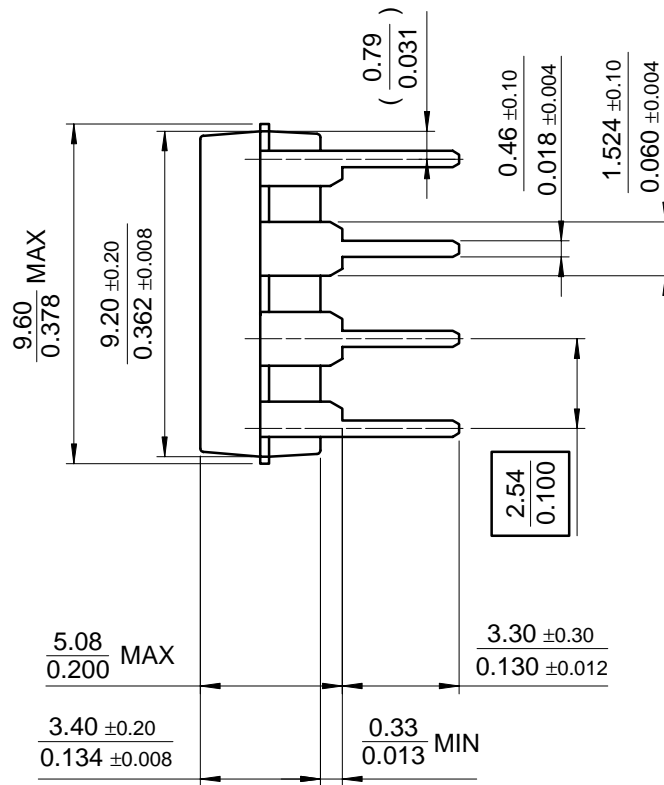
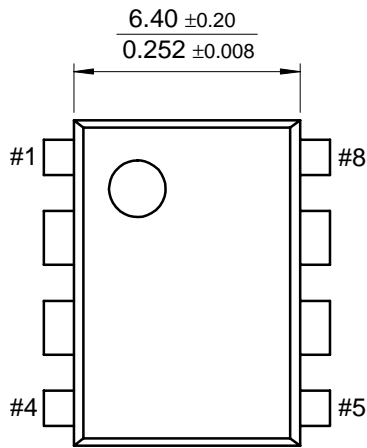


Figure 6. Slew Rate

# Mechanical Dimensions

## Package

### 8-DIP



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**Ordering Information**

<b>Product Number</b>	<b>Package</b>	<b>Operating Temperature</b>
NE5532N	8-DIP	0 ~ + 70°C

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