

NE5532

Dual Operational Amplifier

Features

• Internal Frequency Compensation

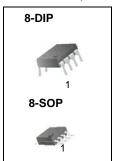
• Slew Rate: 8V/µs

• Input Noise Voltage: $8nV/\sqrt{Hz}$ (fo = 30Hz)

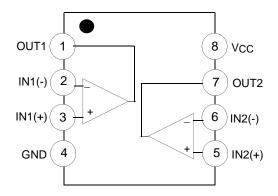
• Full Power Bandwidth: 140kHz

Description

The NE5532 is a 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	Vcc	±22	V
Differential Input Voltage	V(DIFF)	±13	V
Input Voltage	VI	Supply Voltage	V
Power Dissipation, T _A = 25°C 8-DIP 8-SOP	PD	1100 500	mW
Operating Temperature Range	TOPR	0 ~ +70	°C

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-Ambient Max. 8-DIP 8-SOP	Rθja	110 250	°C/W

Electrical Characteristics

 $(VCC = 15V, VEE = -15V, TA = 25^{\circ}C)$

Parameter	Symbol	Conditions	Min.	Тур.	Max.	Unit
Input Offset Voltage	VIO	-	-	0.5	4.0	mV
Input Offset Current	lio	-	-	10	150	nA
Input Bias Current	IBIAS	-	-	200	800	nA
Supply Current	ICC	-	-	6.0	16	mA
Input Voltage Range	VI(R)	-	±12	±13	-	V
Common Mode Rejection Range	CMRR	T _A = 25 °C	70	100	-	dB
Power Supply Rejection Ratio	PSRR	T _A = 25 °C	80	100	-	dB
Output Voltage Swing	VO(P-P)	$R_L \ge 600\Omega$	±12	±13	-	V
Input Resistance	Rı	T _A = 25°C	30	300	-	kΩ
Short Circuit Current	Isc	-	-	38	-	mA
Overshoot	OS	RL = 600Ω, CL = 100pF	=	10	20	%
Large-signal Voltage Gain	G∨	$R_L \ge 2k\Omega$, $V_O = \pm 10V$	25	100	-	\//m\/
		$RL \ge 600\Omega$, $VO = \pm 10V$	15	50		- V/mV
Small-signal Voltage Gain	Gv	f = 10kHz	2	2.2	-	V/mV
Gain Bandwidth Product	GBW	$C_L = 100 pF, R_L = 600 \Omega$	8	10	-	MHz
Slew Rate	SR	RL =1K, CL =100pF, RL = 600Ω	6	8.0	-	V/μs
Input Noise Voltage	e _N	f _O = 30Hz f _O = 1kHz	-	8.0 5.0	-	nV/√Hz

Typical Performance Characteristics

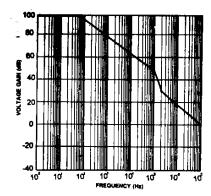


Figure 1. Open Loop Frequency Response

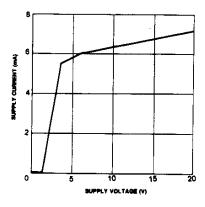


Figure 3. Supply Current vs Supply Voltage

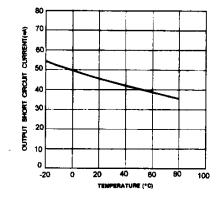


Figure 5. Output Circuit Current vs Temperature

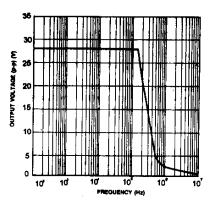


Figure 2. Large Signal Frequency Response

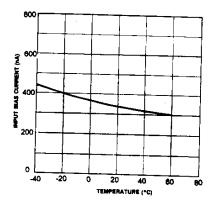


Figure 4. Input Bias Current vs Temperature

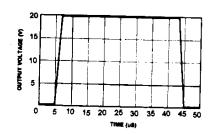
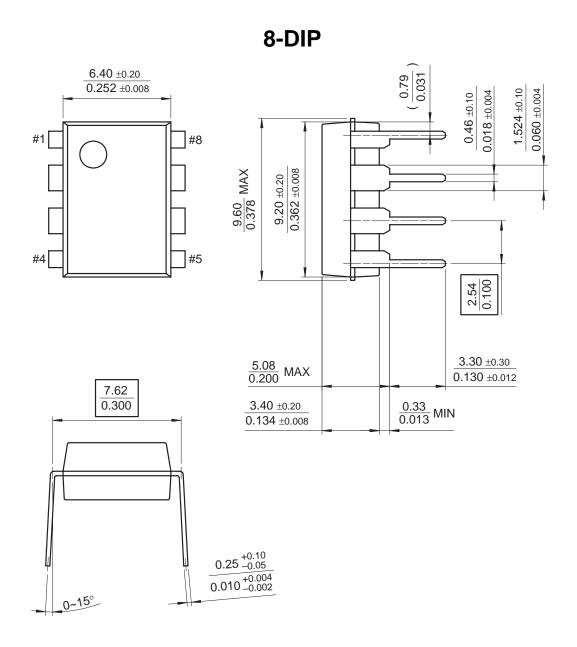


Figure 6. Slew Rate

Mechanical Dimensions

Package

Dimensions in millimeters

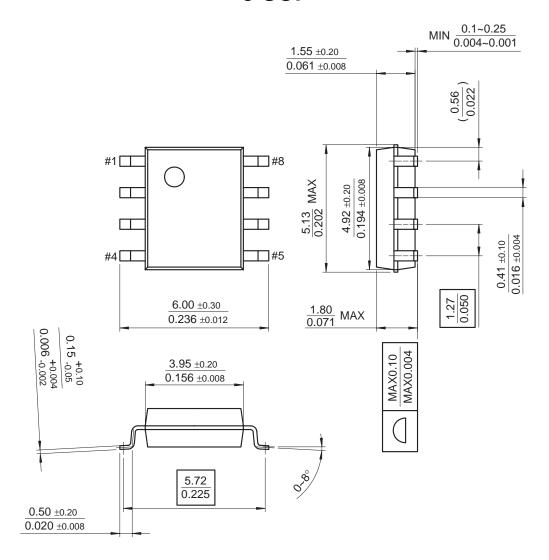


Mechanical Dimensions (Continued)

Package

Dimensions in millimeters

8-SOP



Ordering Information

Product Number	Package	Operating Temperature
NE5532N	8-DIP	0 ~ +70°C
NE5532D	8-SOP	0 ~ +70 C

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