

High-performance and low-noise dual-operational amplifier NE 5532

summary:

NE 5532 is a dual operation put high performance low noise operational amplifier. Compared to most standard operational amplifiers, it shows better noise performance, improved output drive capability and fairly high small signal and power bandwidth. This makes the device particularly suitable for applications in high quality and professional sound equipment, instruments and control circuits and telephone channel amplifiers.

characteristic:

- Small signal bandwidth: 10MHz
 - Output drive capability: 600 Ω, 10V valid value
 - Input noise voltage: 5nV / Hz (typical value)
 - DC voltage gain: 50,000
 - AC voltage gain: 2200Hz ~ 10KHz
 - Power Bandwidth: 140KHz
 - Conversion rate: 7V / s
 - Power supply voltage range: ± 3V ~ ± 20V
 - Unit gain compensation
- Internal equivalent circuit:

Packaging form:

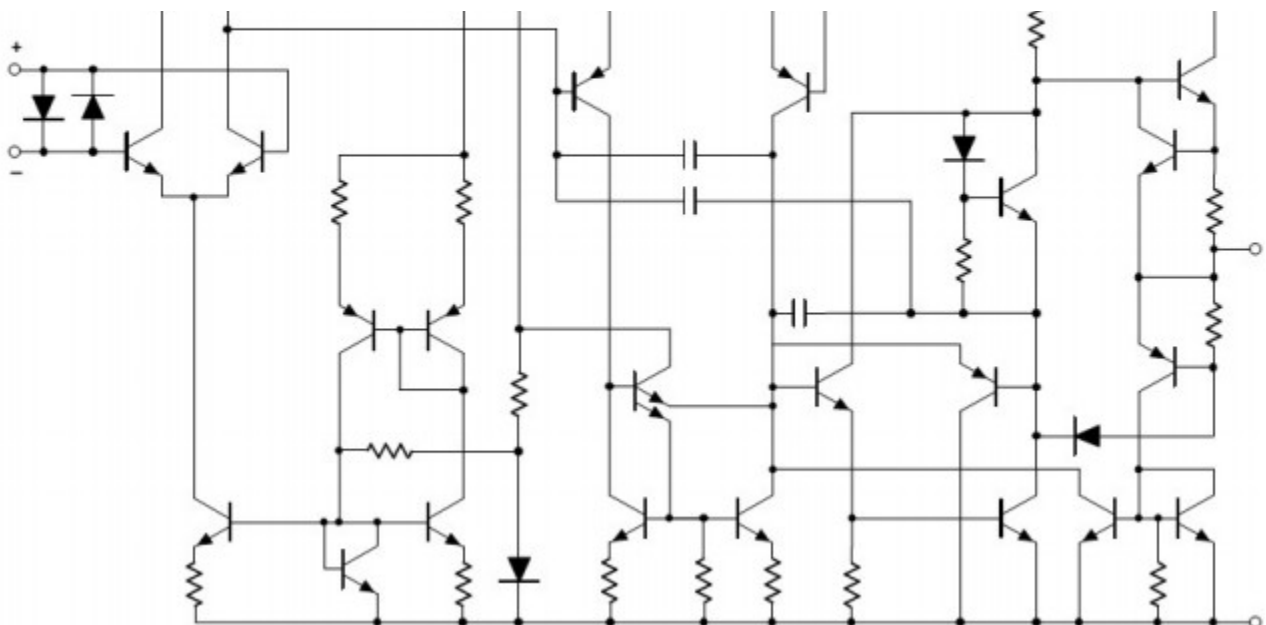


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Pin diagram:



absolute rating:

symbol	parameter		numeric value	unit
VS	supply voltage		± 22	V
V _{IN}	input voltage		$\pm VS$	V
V _{DIF F}	Differential input voltage		± 0.5	V
T _{amb}	operating temperature range		0 to 70	°C
T _{stg}	Storage temperature		-65 to 150	°C
T _j	junction temperature		150	°C
PD	maximum power dissipation,	SOP package	780	m W
	T _{amb} = 25 °C	DIP package	1200	m W
T _{s ld}	Welding temperature (10-s maximum)		230	°C

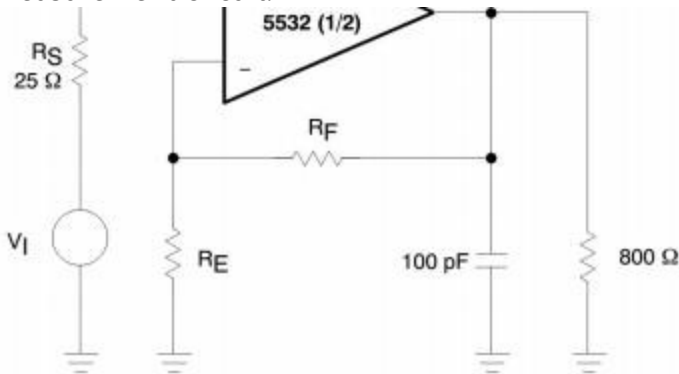
 DC electric gas characteristics: T_{amb}= 25°C; VS= ± 15 V, unless otherwise specified

parameter	symbol	test condition	minimum	typical case	maximum	unit
offset voltage	V _{OS}			0.5	4.0	m V
offset current	I _{OS}			10	150	n A
input current on	I _B			300	800	n A
quiescent current	I _{CC}			8.0	16	m A
Comode input range	V _{CM}		± 12	± 13		V
cmrr	CMR R		70	100		d B
power supply rejection ratio	P SRR			10	100	uV /V
Large signal gain	AV	RL $\geq 2.0K\Omega$; Vo= $\pm 10V$	25	100		V /mV
		RL $\geq 600\Omega$; Vo= $\pm 10V$	15	50		
Output swing	V _{OU T}	RL $\geq 600\Omega$	± 12	± 13		V
		RL $\geq 600\Omega$; Vs = $\pm 18V$	± 15	± 16		
		RL $\geq 2.0K\Omega$	± 13	± 13.5		
input resistance	R _{IN}		30	200		K Ω
Output short circuit current	I _{SC}		10	50	60	m A

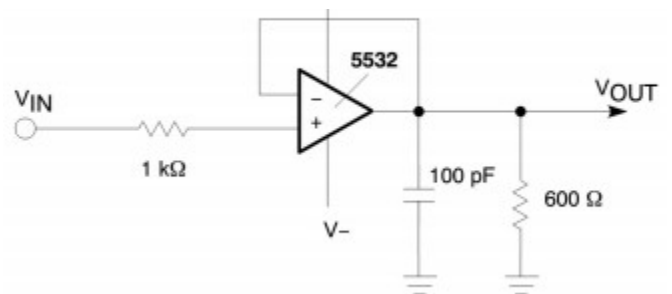
AC features: $T_{amb} = 25^{\circ}\text{C}$; $V_S = \pm 15\text{ V}$, unless otherwise specified

parameter	symbol	test condition	minimum	typical case	maximum	unit
output resistance	R_{OUT}	$A_V = 30\text{dB}$ closed-loop $f = 10\text{KHz}$, $R_L = 600\ \Omega$		0.3		Ω
overshoot		Voltage follows $V_{in} = 100\text{mV}_{pp}$, $C_L = 100\text{pF}$; $R_L = 600\ \Omega$		10	0	%
gain	A_V	$f = 10\text{KHz}$		2.2		V/mV
gain bandwidth product	GBW	$C_L = 100\text{pF}; R_L = 600\ \Omega$		10		MHz
slew rate	SR			7.0		V/uS
Power bandwidth		$V_{OUT} = \pm 10\text{V}$		140		KHz
		$V_{OUT} = \pm 14\text{V}$; $R_L = 600\ \Omega$		100		
input noise voltage	V_{NOISE}	$f_o = 30\text{Hz}$		8.0		$\text{nV}/\sqrt{\text{Hz}}$
		$f_o = 1.0\text{KHz}$		5.0		
Enter the noise current	I_{NOISE}	$f_o = 30\text{Hz}$		2.7		$\text{pA}/\sqrt{\text{Hz}}$
		$f_o = 1.0\text{KHz}$		0.7		
Channel isolation		$f = 1.0\text{KHz}; R_S = 5.0\text{K}\Omega$		110		dB

measurement circuit:



closed loop frequency response



Voltage follows