



钜地半导体
Tudi Semiconductor

Product Specification

TUDI-NE5532/SA5532

Dual low-noise operational amplifier

网址 www.sztdbdt.com Q

用芯智造 · 卓越品质

**semiconductor device
manufacturer**

- Design
- research and development
- production
- and sales

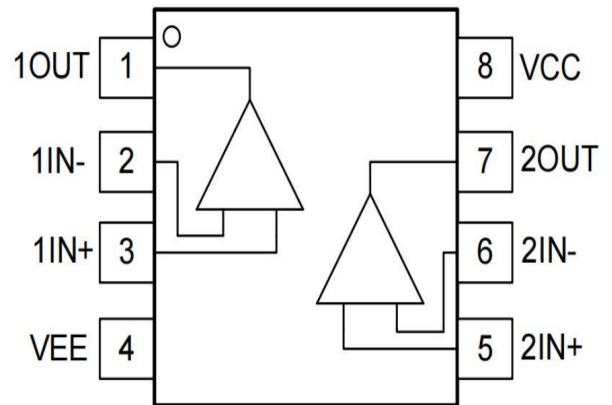


Features

- Low input noise voltage
- Low distortion: approx. 0.0005%
- Internal ESD protection
- Slew rate: 9V/uS
- Unity gain bandwidth: 15MHz

Explanation

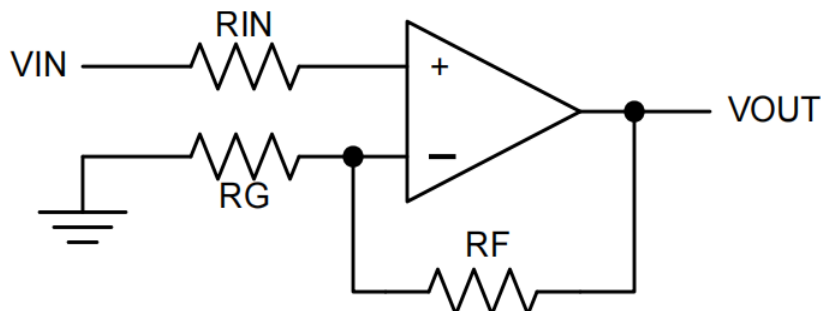
The NE5532/SA5532 devices high-performance operational amplifiers with excellent DC and AC characteristics. These devices feature extremely low noise, high output drive capability, high unity-gain bandwidth, maximum output swing low distortion, high slew rate, input protection diodes, and output short-circuit protection. These operational amplifiers are internally compensated for unity-gain operation. These devices a rated maximum value for equivalent input noise voltage.



Application

- AV receiver
- Embedded personal computer (PC)
- Netbook
- Video broadcasting and infrastructure: scalable platform
- DVD recorder and
- Multi-channel video transmission encoder
- Professional audio mixer

Simplified Schematic





Pin Description

Pin number	Pin Name	I/O	describe
1	1OUT	O	Route 1 Op-Amp Output
2	1IN-	I	Route 1: Operational Amplifier Reverse Input
3	1IN+	I	Route 1: Op-Amp Positive Input
4	VEE	P	Negative power supply
5	2IN+	I	Channel 2 Op-Amp Positive Input
6	2IN-	I	Channel 2 Op-Amp Reverse Input
7	2OUT	O	Channel 2 Op-Amp Output
8	Vcc	P	Positive power supply

Absolute maximum ratings (unless otherwise specified, Tamb=25°C)

Parameter	Characteristic	Price
supply voltage	Vs	±22V
Differential input voltage	VID	±20V
Maximum operating junction temperature	Tj	150°C
operating ambient temperature	TA	-40~+85°C
storage temperature	Ts	-65~+150°C
Lead temperature (welding, 10 s)	Tw	260°C

Recommended operating conditions (unless otherwise specified, Tamb=25°C)

parameter	symbol	MIN	MAX	UNIT
Positive power supply	Vcc	+4	+18	V
Negative power supply	VEE	-4	-18	V
common-mode input voltage	VCM	(V cc-)+3	(Vcc+)-3	V



Electrical characteristics (unless otherwise specified, VCC=15V, VEE=-15V, Tamb=25°C)

Parameter	Characteristic	Test condition	MIN	TYP	MAX	UNIT
source current	Icc	RL=∞	-	6	-	mA
Input offset voltage	Vio	Vo=0V	-	±2	±5	mV
input offset current	Iio	Vo=0V	-200	-	200	nA
input bias current	IB	Vo=0V	-500	-	500	nA
common-mode input voltage	ViCM		±12	±13	-	V
Output voltage amplitude	VoM	RL=10kΩ	±12	±14	-	V
		RL=2kΩ	±10	±13	-	V
output(current)	Isource		-120	-	-80	mA
	Isink		100	-	150	mA
open loop voltage gain	AoL	Vo=±10V,Ri<2kΩ	70	100	-	dB
cmrr	CMRR		75	100	-	dB
supply voltage rejection ratio	PSRR		75	100	-	dB
gain bandwidth product	GBWP		-	15	-	MHz
slew rate	SR		-	9	-	V/μS



Characteristic curve

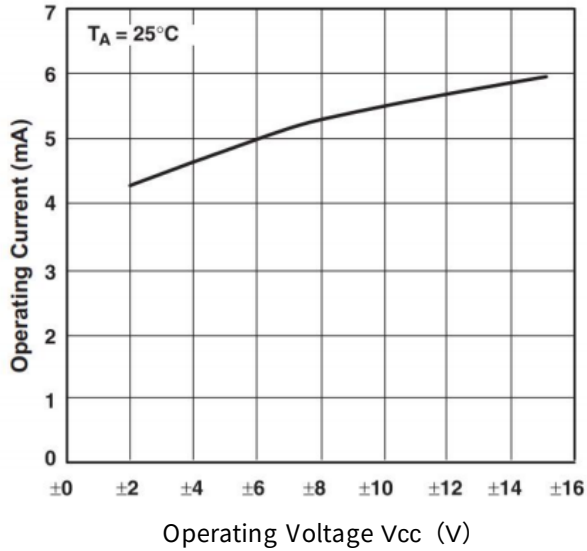


Figure 1 Relationship between power current and power voltage

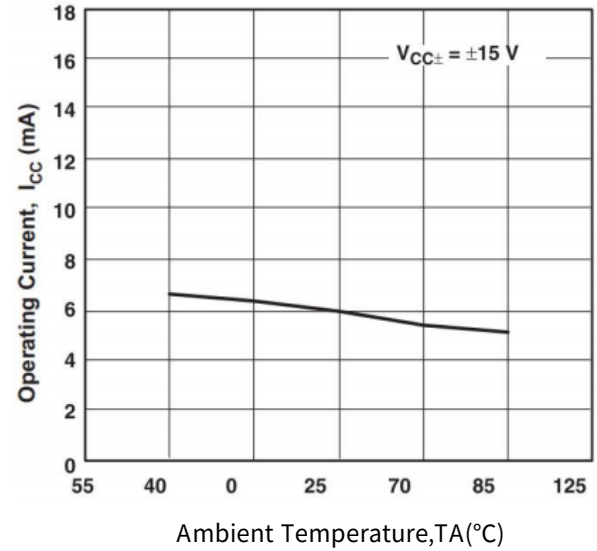


Figure 2 Relationship between power supply current and ambient temperature

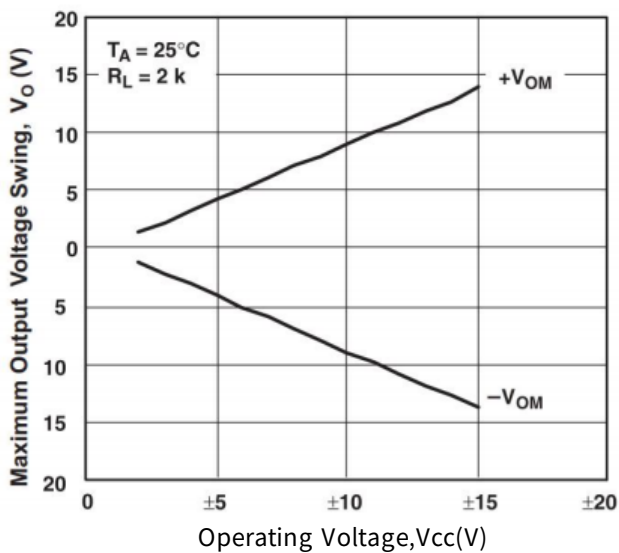


Figure 3 Relationship between maximum output voltage swing and supply voltage

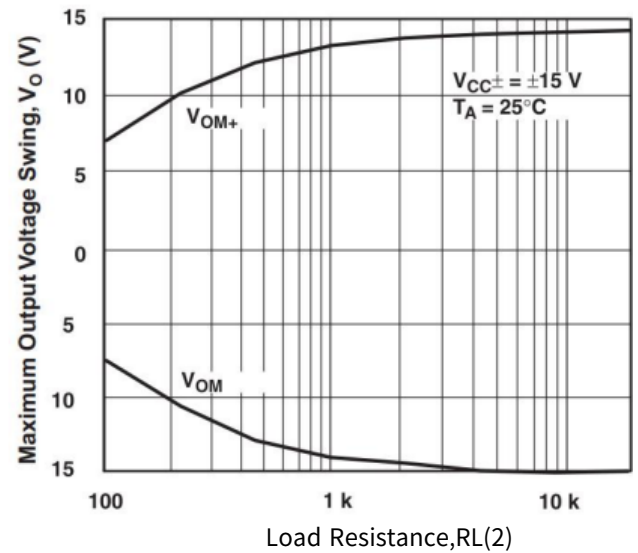


Figure 4 Relationship between maximum output voltage swing and load

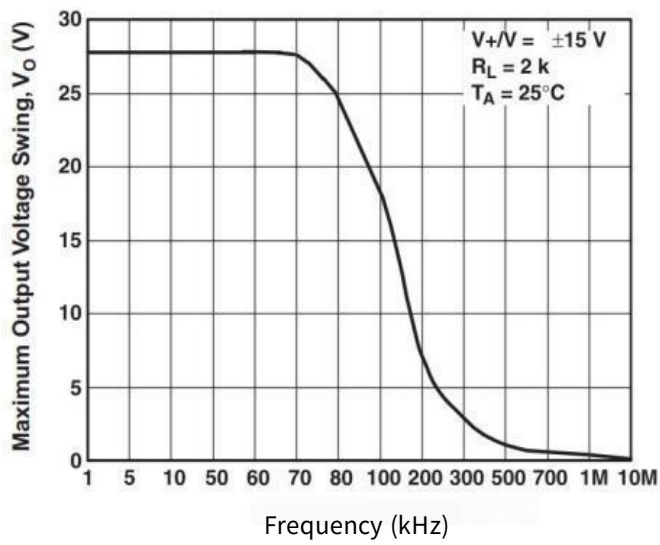


Figure 5 Relationship between maximum output voltage swing and frequency

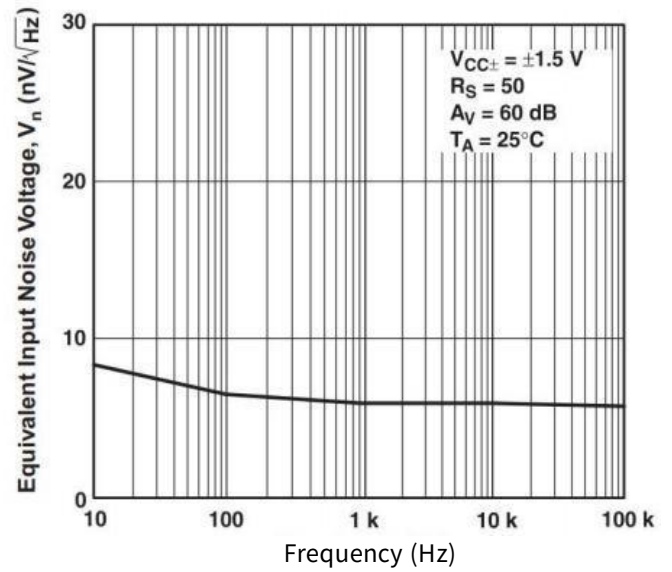
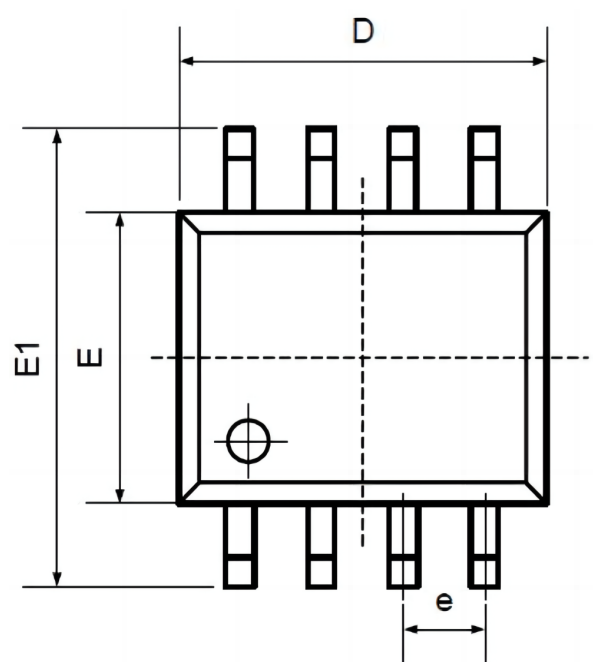
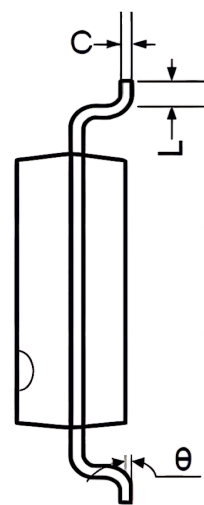


Figure 6 Relationship between input voltage noise and frequency

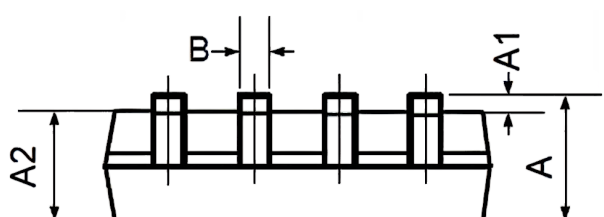
Order information

Order Number	Package	Package Quantity	Marking On The park	Temperature
NE5532ADR-TUDI	SOP8	Tape,Reel,4000	N5532A	0°C to +70°C
NE5532AP-TUDI	DIP8	Tube,50,A box of 2000	NE5532AP	
NE5532DR-TUDI	SOP8	Tape,Reel,4000	N5532	
NE5532P-TUDI	DIP8	Tube,50,A box of 2000	NE5532P	
SA5532ADR-TUDI	SOP8	Tape,Reel,4000	SA5532A	-40°C to +85°C
SA5532AP-TUDI	DIP8	Tube,50,A box of 2000	SA5532AP	
SA5532DR-TUDI	SOP8	Tape,Reel,4000	SA5532	
SA5532P-TUDI	DIP8	Tube,50,A box of 2000	SA5532P	

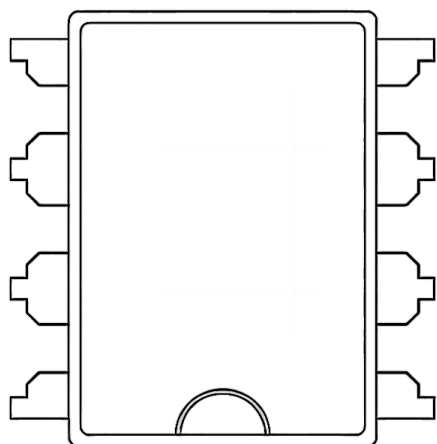
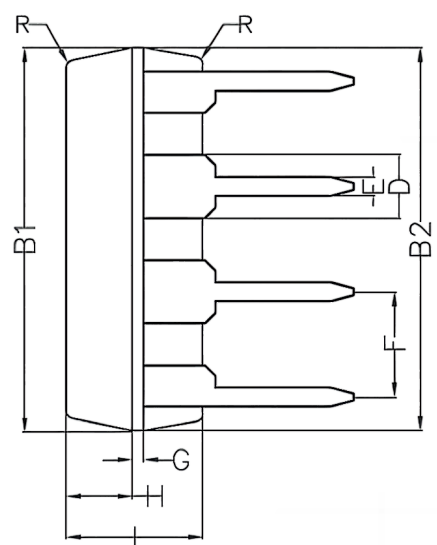
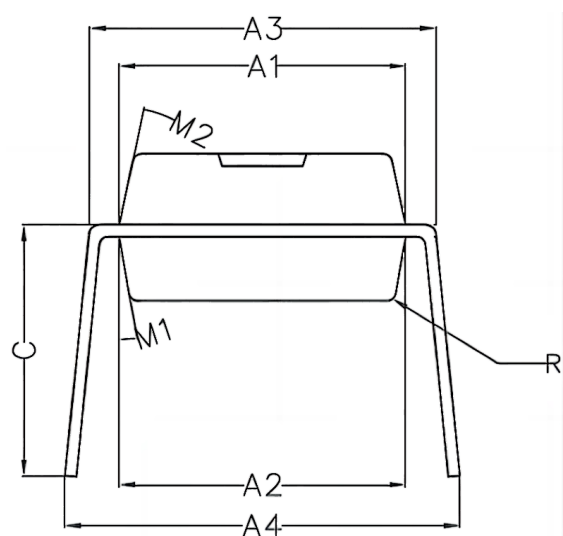
Package SOP8



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°



Package DIP8



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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