

# AN6557, AN6558, AN6558S

## Dual Low Noise, High Slew Rate Operational Amplifiers

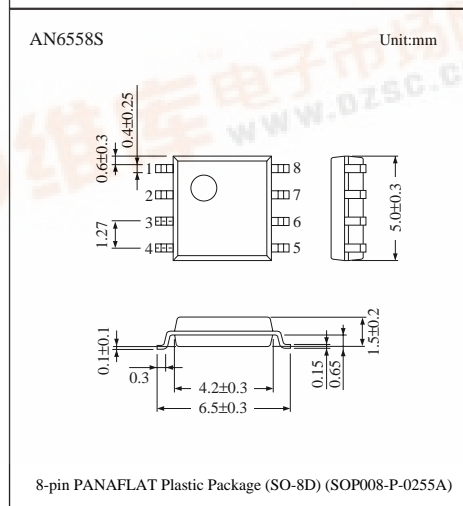
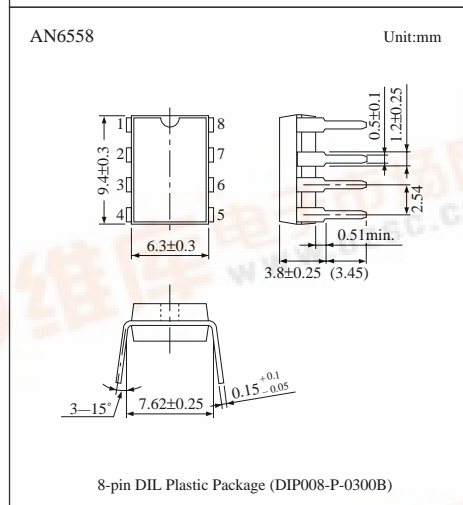
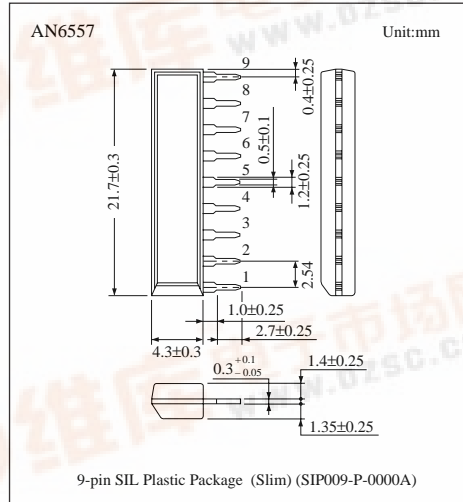
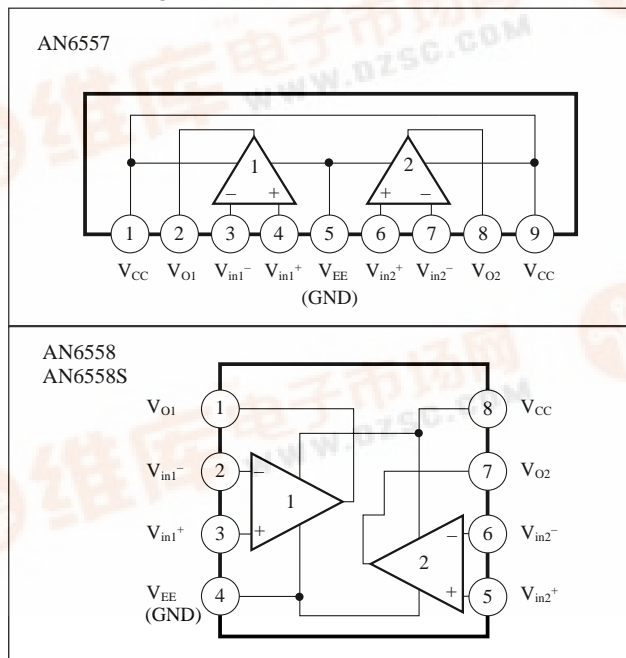
### Overview

The AN6557, the AN6558, and the AN6558S are low noise, high slew rate dual operational amplifiers with phase compensation circuits built-in. They are suitable for application to various electronic circuits such as active filters and audio preamplifiers. Moreover, they are high output current type and can also be used as headphone amplifiers.

### Features

- Phase compensation circuit
- High voltage gain:  $G_v=100\text{dB}$  typ.
- Low noise:  $V_{ni}=0.9\mu\text{Vrms}$  typ.
- High slew rate:  $SR=6\text{V}/\mu\text{s}$  typ.
- High output current:  $I_o=25\text{mA}$  typ.

### Block Diagram



## ■ Pin Descriptions

〈AN6557〉

Pin No.	Pin name
1	V <sub>CC</sub>
2	Ch. 1 output
3	Ch. 1 inverting input
4	Ch. 1 non inverting input
5	V <sub>EE</sub> (GND)
6	Ch. 2 non inverting input
7	Ch. 2 inverting input
8	Ch. 2 output
9	V <sub>CC</sub>

〈AN6558, AN6558S〉

Pin No.	Pin name
1	Ch. 1 output
2	Ch. 1 inverting input
3	Ch. 1 non inverting input
4	V <sub>EE</sub> (GND)
5	Ch. 2 non inverting input
6	Ch. 2 inverting input
7	Ch. 2 output
8	V <sub>CC</sub>

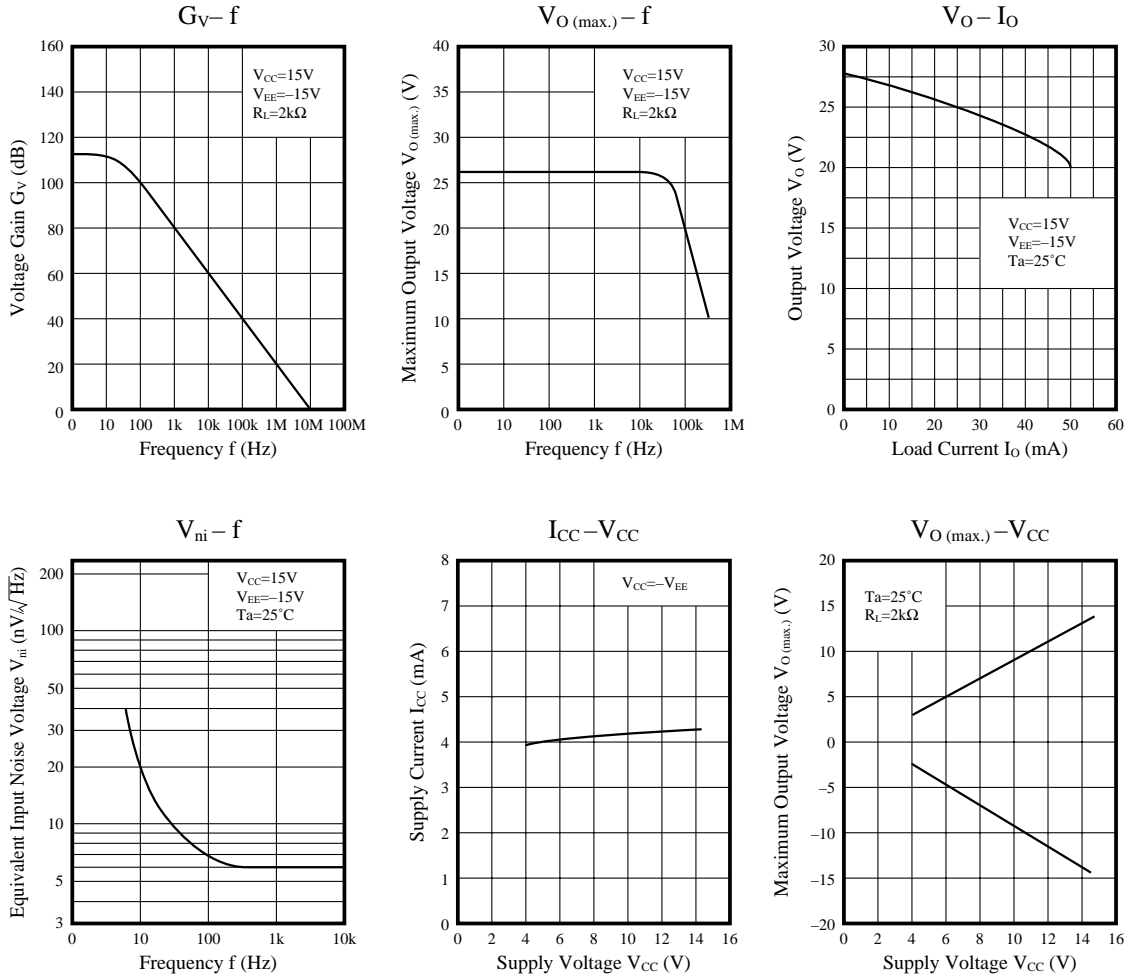
## ■ Absolute Maximum Ratings (T<sub>a</sub>=25°C)

Parameter		Symbol	Rating	Unit
Voltage	Supply voltage	V <sub>CC</sub>	±18	V
	Differential input voltage	V <sub>ID</sub>	±30	V
	Common-mode input voltage	V <sub>ICM</sub>	±15	V
Power dissipation	AN6557, AN6558	P <sub>D</sub>	500	mW
	AN6558S		360	
Operating ambient temperature		T <sub>opr</sub>	-20 to +75	°C
Storage temperature	AN6557, AN6558	T <sub>stg</sub>	-55 to +150	°C
	AN6558S		-55 to +125	

## ■ Electrical Characteristics (V<sub>CC</sub>=15V, V<sub>EE</sub>=-15V, T<sub>a</sub>=25°C)

Parameter	Symbol	Condition	min	typ	max	Unit
Input offset voltage	V <sub>I(offset)</sub>	R <sub>S</sub> ≤ 10kΩ	—	0.3	3	mV
Input offset current	I <sub>IO</sub>		—	10	200	nA
Input bias current	I <sub>Bias</sub>		—	1300	2000	nA
Voltage gain	G <sub>V</sub>	R <sub>L</sub> ≥ 2kΩ, V <sub>O</sub> = ±10V	86	100	—	dB
Maximum output voltage	V <sub>O(max.)</sub>	R <sub>L</sub> ≥ 10kΩ	±12	±14	—	V
		I <sub>O</sub> = 25mA	±10	±12	—	V
Common-mode input voltage width	V <sub>CM</sub>		±12	±14	—	V
Common-mode rejection ratio	CMR		70	100	—	dB
Supply voltage rejection ratio	SVR		—	10	150	μV/V
Power consumption	P <sub>C</sub>	R <sub>L</sub> = ∞	—	150	240	mW
Slew rate	SR	R <sub>L</sub> ≥ 2kΩ	—	6	—	V/μs
Equivalent input noise voltage	V <sub>ni</sub>	R <sub>S</sub> = 1kΩ, DIN/AUDIO	—	0.9	—	μVrms

## ■ Characteristics Curve



## ■ Application Circuit

### RIAA Amplifier

