

# AN4558 (AN6552), AN4558S (AN6552S)

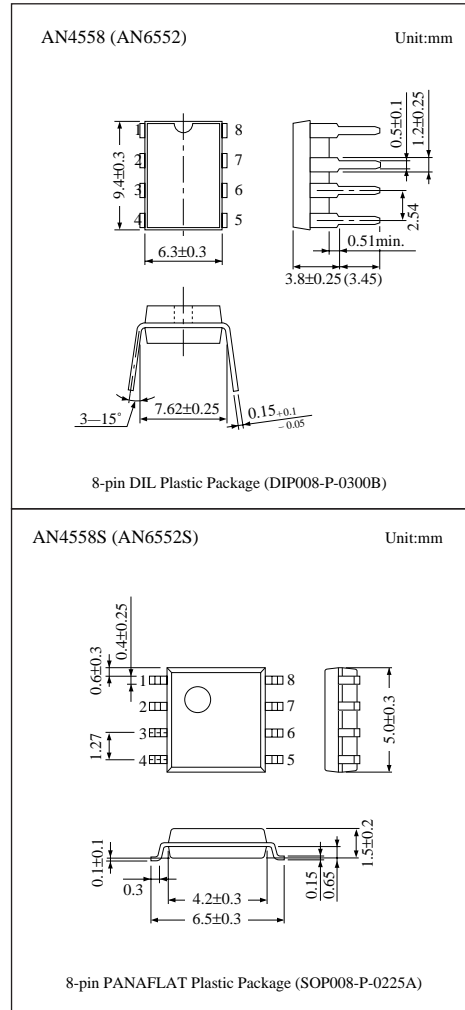
## Dual Operational Amplifiers

### ■ Overview

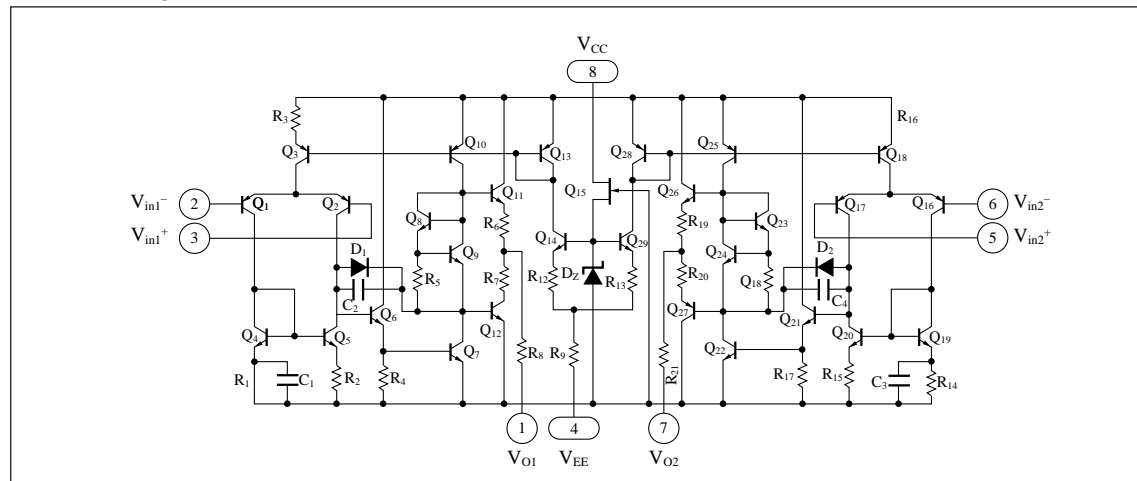
The AN4558 (AN6552) and the AN4558S (AN6552S) are dual operational amplifiers with phase compensation circuits built-in, and suitable for application to various electronic circuits such as active filters and audio preamplifiers.

### ■ Features

- Phase compensation circuit
- High voltage gain, low noise
- Output short-circuit protection
- Slew rate:  $SR=1V/\mu s$  typ.



### ■ Block Diagram



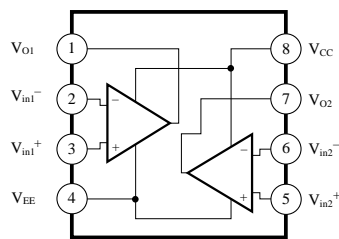
## ■ Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Rating	Unit
Voltage	Supply voltage	$V_{CC}$	$\pm 18$	V
	Differential input voltage	$V_{ID}$	$\pm 30$	V
	Common-mode input voltage	$V_{ICM}$	$\pm 15$	V
Power dissipation	AN4558 (AN6552)	$P_D$	500	mW
	AN4558S (AN6552S)		360	
Temperature	Operating ambient temperature	$T_{opr}$	-20 to +75	°C
	Storage temperature	AN4558 (AN6552)	-55 to +150	°C
		AN4558S (AN6552S)	-55 to +125	

## ■ Electrical Characteristics ( $V_{CC}=15V$ , $V_{EE}=-15V$ , $T_a=25^\circ C$ )

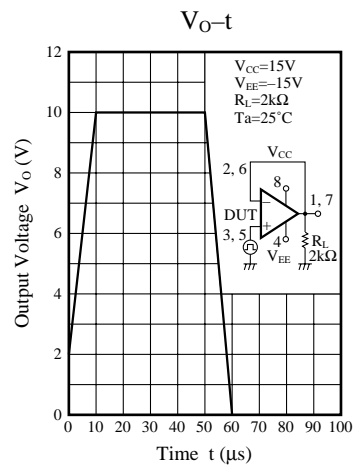
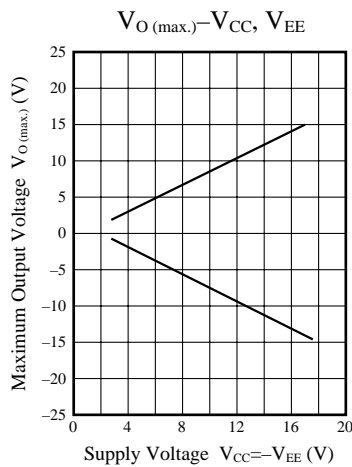
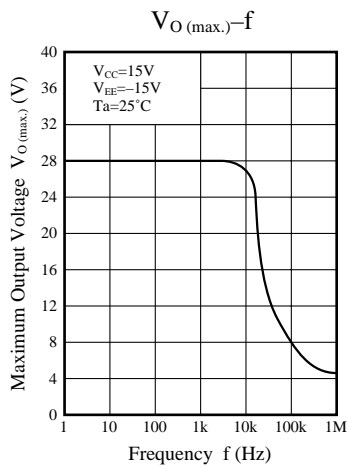
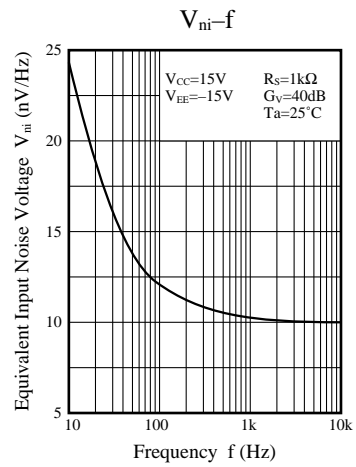
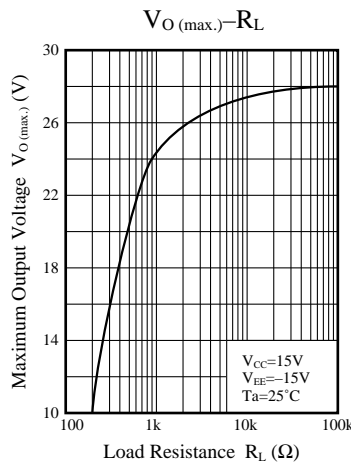
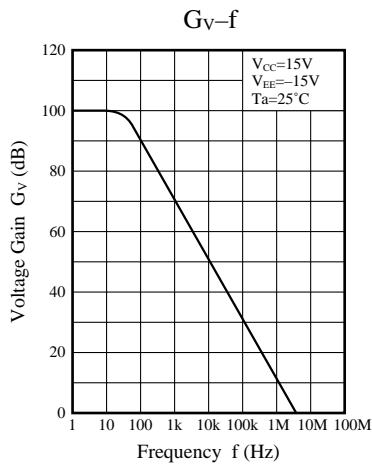
Parameter	Symbol	Condition	min	typ	max	Unit
Input offset voltage	$V_{I(\text{offset})}$	$R_S \leq 10k\Omega$	—	0.5	6	mV
Input offset current	$I_{IO}$		—	5	200	nA
Input bias current	$I_{Bias}$		—	—	500	nA
Voltage gain	$G_V$	$R_L \geq 2k\Omega$ , $V_O = \pm 10V$	86	100	—	dB
Maximum output voltage	$V_{O(\text{max.})}$	$R_L \geq 10\Omega$	$\pm 12$	$\pm 14$	—	V
		$R_L \geq 2k\Omega$	$\pm 10$	$\pm 13$	—	V
Common-mode input voltage width	$V_{CM}$		$\pm 12$	$\pm 14$	—	V
Common-mode rejection ratio	CMR		70	90	—	dB
Supply voltage rejection ratio	SVR		—	30	150	$\mu V/V$
Power consumption	$P_C$	$R_L = \infty$	—	90	170	mW
Slew rate	SR	$R_L \geq 2k\Omega$	—	1.0	—	V/ $\mu s$
Equivalent input noise voltage	$V_{ni}$	$R_S = 1k\Omega$ , $B = 10\text{Hz to } 30\text{kHz}$	—	2.5	—	$\mu V_{rms}$

## ■ Pin Assignments

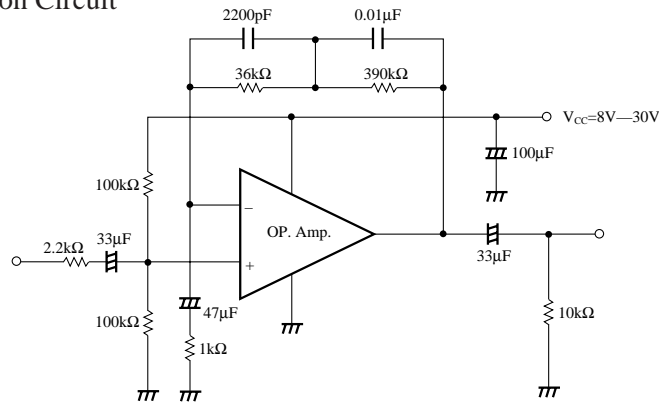


## ■ Pin Descriptions

Pin No.	Pin name
1	Ch.1 output
2	Ch.1 inverting input
3	Ch.1 non inverting input
4	$V_{EE}$ (GND)
5	Ch.2 non inverting input
6	Ch.2 inverting input
7	Ch.2 output
8	$V_{CC}$



■ Application Circuit



RIAA Pre-Amp. (Single Voltage Operation)