

## General Description

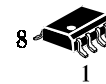
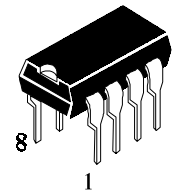
The AV4558 is dual general purpose operational amplifiers. The high common-mode input voltage range and the absence of latch-up make these amplifiers ideal for voltage follower application.

The devices are short circuit protected and the internal frequency compensation ensures stability without external components.

## Features

- Maximum supply voltage :  $\pm 18V$
- Large DC Voltage Gain : 100dB
- Bandwidth (unity gain) : 1 MHz
- Short-Circuit Protection
- Wide common-mode and differential ranges
- No frequency compensation required
- Low power consumption
- No latch-up
- Gain and phase math between amplifiers

## PACKAGE OUTLINE



AV4558P  
AV4558S

## Applications

- Amplifiers
- Filters
- Analog Circuit

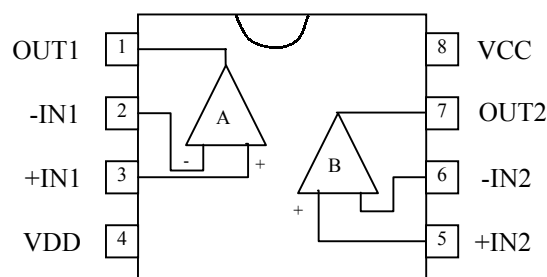
## Package Information

AV4558P P-Plastic

AV4558S S-Sop

Temp. Range C= 0° to 70° C for all packages

## Pin Connections (Top View)



AV4558

**ORDERING INFORMATION**

PIN	SYMBOL	PIN	SYMBOL
1	OUT1	5	IN2(+)
2	IN1(-)	6	IN2(-)
3	IN1(+)	7	OUT2
4	VDD(GND)	8	VCC

**MAXIMUM RATINGS** (T<sub>amb</sub>=25°C)

Symbol	Parameter	Value	Unit
VCC	Supply Voltage	±18	V
Pd	Power Consumption	DIP8	500
		SIP8	800
		SOP8	300
V <sub>ID</sub>	Differential Input Voltage	±15	V
V <sub>I</sub>	Common-Mode Input Voltage	±15	V
T <sub>amb</sub>	Operating Free-air Temperature Range	0 to +70	°C
T <sub>stg</sub>	Storage Temperature Range	-25 to +125	°C

\* Maximum Ratings are those values beyond which damage to the device may occur.  
Functional operation should be restricted to the Recommended Operating Conditions.

**RECOMMENDED OPERATING CONDITIONS**

Symbol	Parameter	Min	Max	Unit
V <sup>+</sup>	Supply Voltage		+15	V
V <sup>-</sup>	Supply Voltage		-15	V
T <sub>A</sub>	Operating Temperature, All Package Types	0	+70	°C

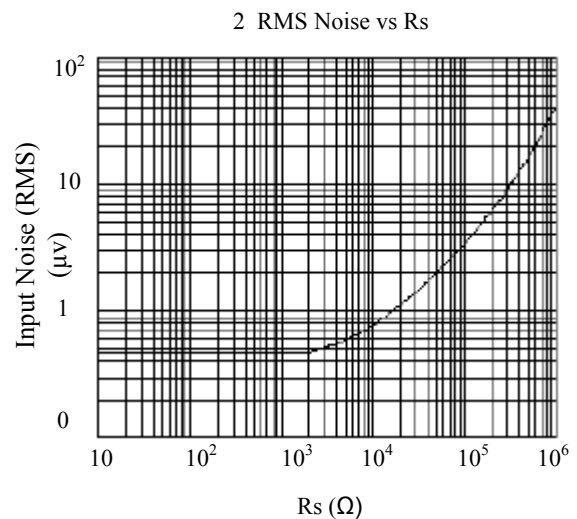
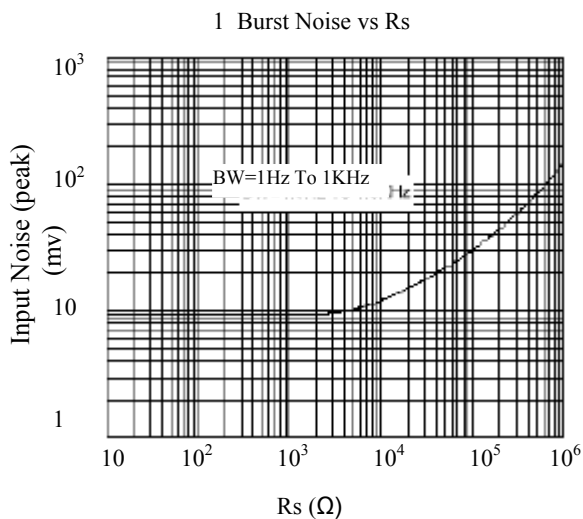
This device contains protection circuitry to guard against damage due to high static voltages or electric fields. However, precautions must be taken to avoid applications of any voltage higher than maximum rated voltages to this high-impedance circuit. For proper operation, V<sub>IN</sub> and V<sub>OUT</sub> should be constrained to the range GND ≤ (V<sub>IN</sub> or V<sub>OUT</sub>) ≤ V<sub>CC</sub>.

Unused inputs must always be tied to an appropriate logic voltage level (e.g., either GND or V<sub>CC</sub>). Unused outputs must be left open.

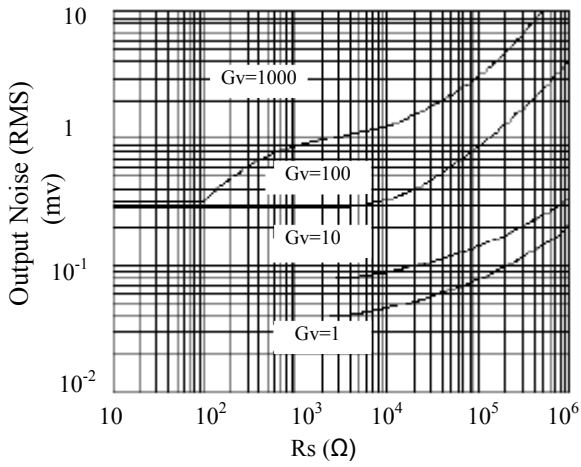
**ELECTRICAL CHARACTERISTICS** (Tamb =25°C, V+ = +15 V, V- = -15 V)

Symbol	Parameter	Test Conditions	Guaranteed Limits			Unit
			Min	Typ	Max	
Icc	Power Current		-	3.5	5.6	mA
V <sub>IO</sub>	Input Offset Voltage	R <sub>S</sub> ≤ 10 KΩ	-	2	6.0	mV
I <sub>IO</sub>	Input Offset Current		-	5	200	nA
I <sub>IB</sub>	Input Bias Current		-	30	500	nA
V <sub>I®</sub>	Input Common-Mode Voltage Range		± 12	± 14	-	V
G <sub>V</sub>	Large-Signal Voltage Gain	R <sub>L</sub> ≤ 2KΩ, V <sub>O(p-p)</sub> = ± 10V	20	200	-	V/mV
V <sub>O(p-p)</sub>	Output Voltage Swing	R <sub>L</sub> ≥ 10KΩ	± 12	± 14	-	V
		R <sub>L</sub> ≥ 2KΩ	± 10	± 13	-	V
CMRR	Common Mode Rejection Ratio	R <sub>S</sub> ≤ 10KΩ	70	90	-	dB
PSRR	Supply Voltage Rejection Ratio	R <sub>S</sub> ≤ 10KΩ	75	90	-	dB

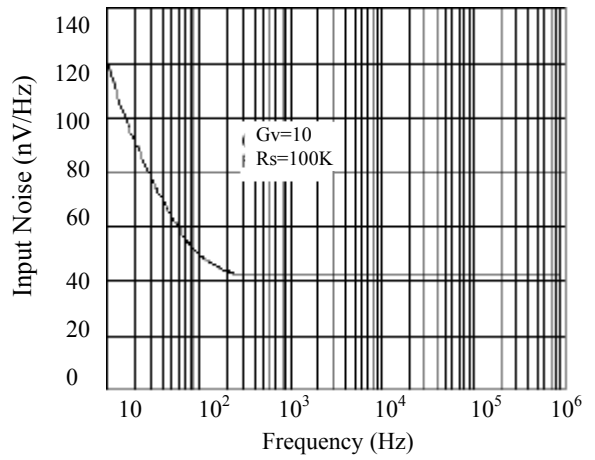
**TYPICAL PERFORMANCE CURVES**



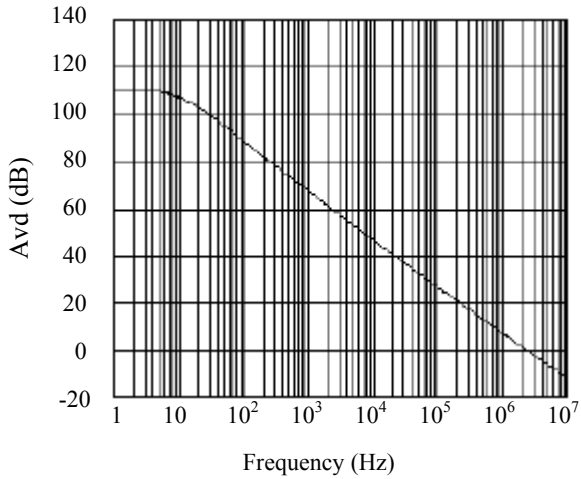
3 Output Noise vs Rs



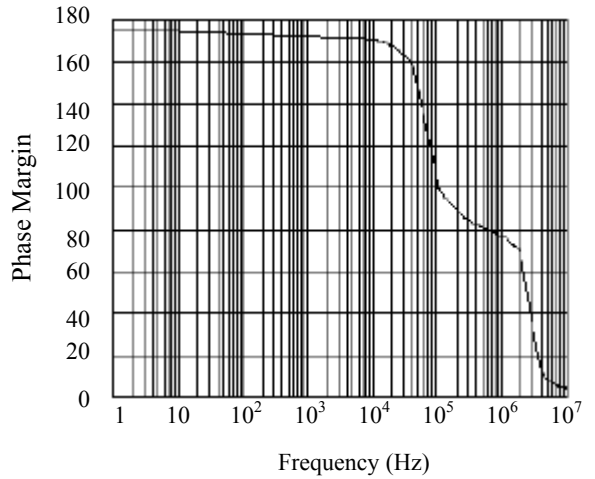
4 Spectral Noise Density



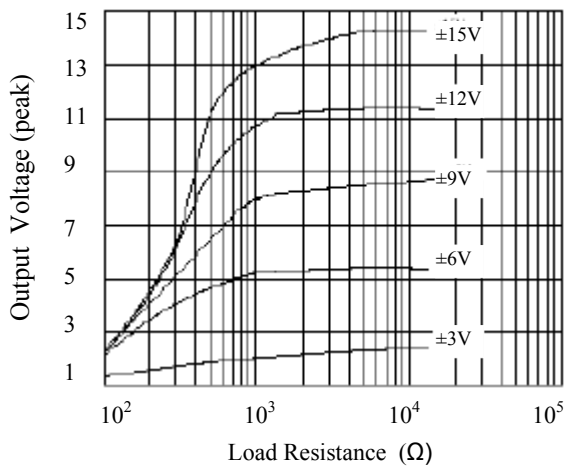
5 Open Frequency Response



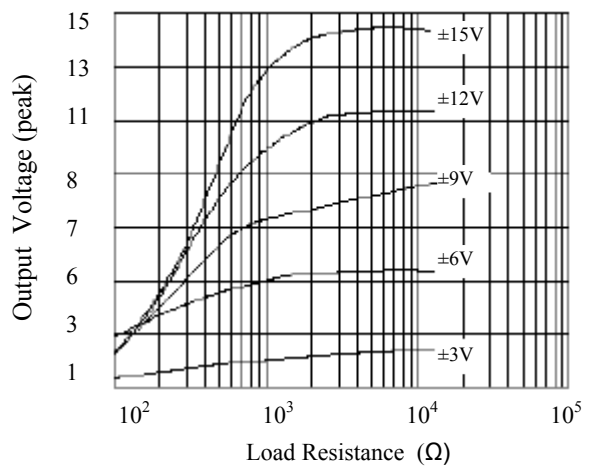
6 Phase Margin vs Frequency



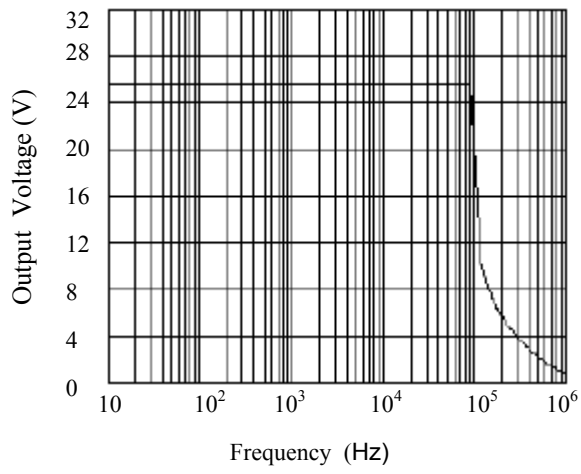
7 Positive Range and Load Resistance



8 Negative Range and Load



9 Output signal and Frequency



Schematic Diagram (Each Amplifier)

