



AV4558

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

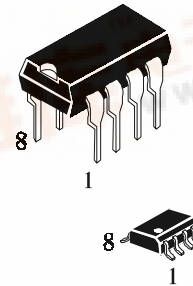
Applications

- Amplifiers
- Filters
- Analog Circuit

Pakage Information

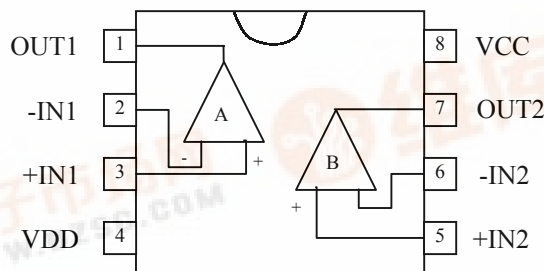
AV4558P P-Plastic
AV4558S S-Sop
Temp. Range C= 0° to 70° C for all packages

PACKAGE OUTLINE



AV4558P
AV4558S

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_{amb}=25°C)

Symbol	Parameter	Value		Unit
VCC	Supply Voltage	±18		V
Pd	Power Consumption	DIP8	500	mw
		SIP8	800	
		SOP8	300	
V _{ID}	Differential Input Voltage	±15		V
V _I	Common-Mode Input Voltage	±15		V
T _{amb}	Operating Free-air Temperature Range	0 to +70		°C
T _{stg}	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

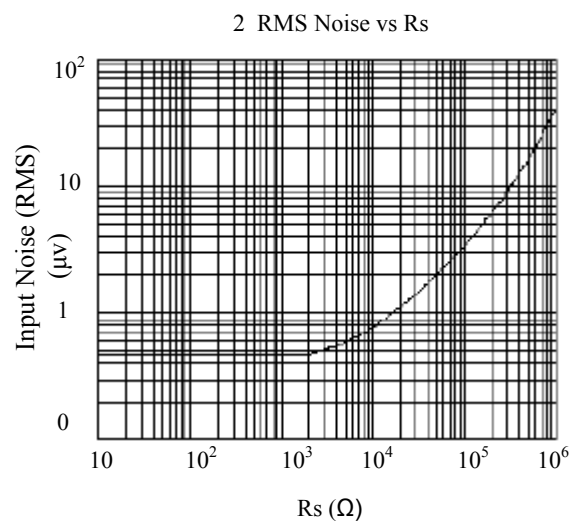
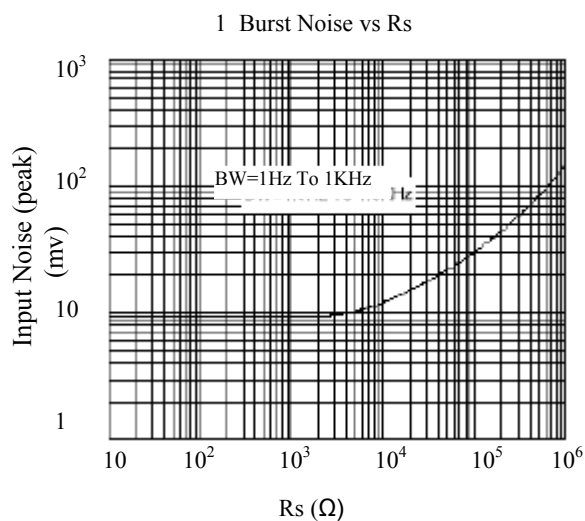
Symbol	Parameter	Min	Max	Unit
V ⁺	Supply Voltage		+15	V
V ⁻	Supply Voltage		-15	V
T _A	Operating Temperature, All Package Types	0	+70	°C

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_{IN} and V_{OUT} should be constrained to the range GND ≤ (V_{IN} or V_{OUT}) ≤ V_{CC}.

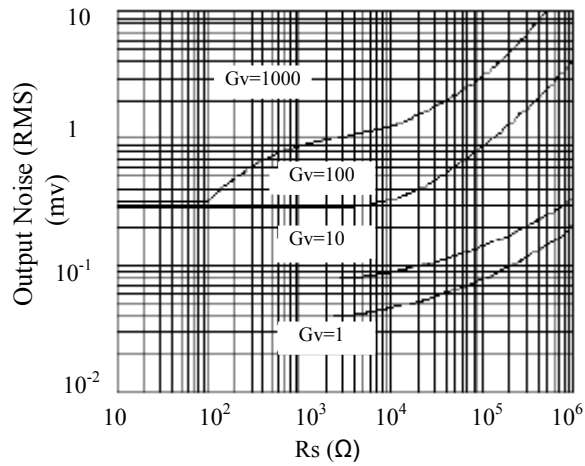
Unused inputs must always be tied to an appropriate logic voltage level (e.g., either GND or V_{CC}). Unused outputs must be left open.

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$, $V^{+} = +15\text{ V}$, $V^{-} = -15\text{ V}$)

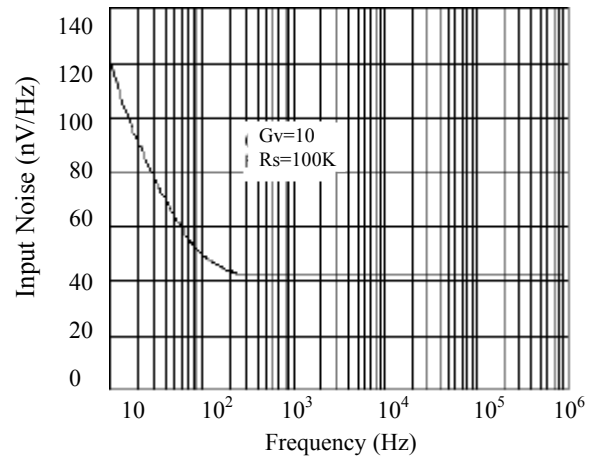
Symbol	Parameter	Test Conditions	Guaranteed Limits			Unit
			Min	Typ	Max	
I_{cc}	Power Current		-	3.5	5.6	mA
V_{IO}	Input Offset Voltage	$R_S \leq 10\text{ K}\Omega$	-	2	6.0	mV
I_{IO}	Input Offset Current		-	5	200	nA
I_{IB}	Input Bias Current		-	30	500	nA
$V_{I@}$	Input Common-Mode Voltage Range		± 12	± 14	-	V
G_V	Large-Signal Voltage Gain	$R_L \leq 2\text{ K}\Omega$, $V_{O(p-p)} = \pm 10\text{ V}$	20	200	-	V/mV
$V_{O(p-p)}$	Output Voltage Swing	$R_L \geq 10\text{ K}\Omega$	± 12	± 14	-	V
		$R_L \geq 2\text{ K}\Omega$	± 10	± 13	-	V
CMRR	Common Mode Rejection Ratio	$R_S \leq 10\text{ K}\Omega$	70	90	-	dB
PSRR	Supply Voltage Rejection Ratio	$R_S \leq 10\text{ K}\Omega$	75	90	-	dB

TYPICAL PERFORMANCE CURVES

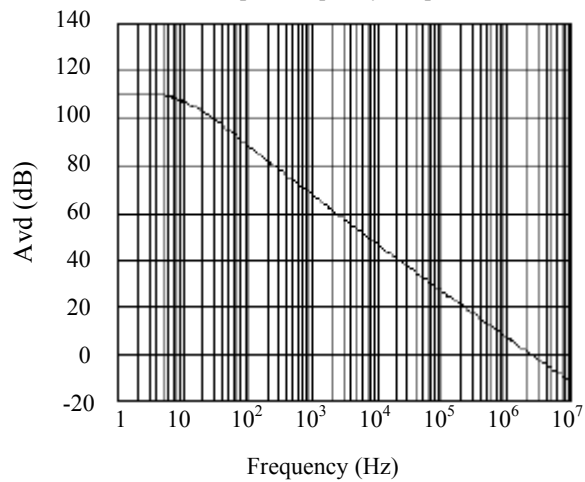
3 Output Noise vs R_s



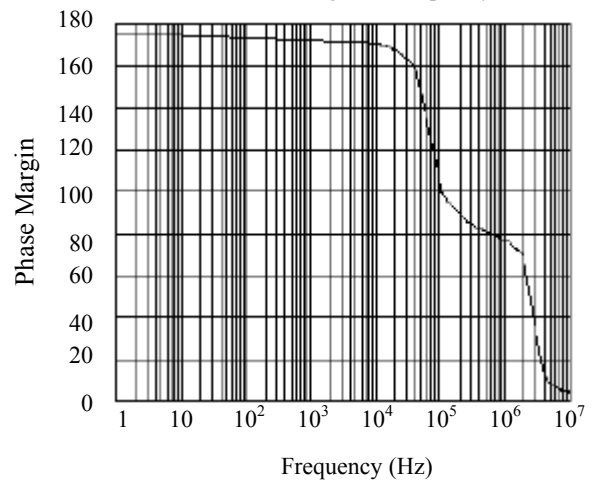
4 Spectral Noise Density



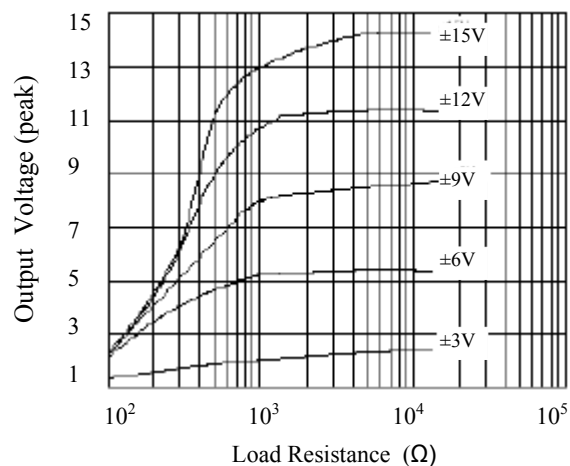
5 Open Frequency Response



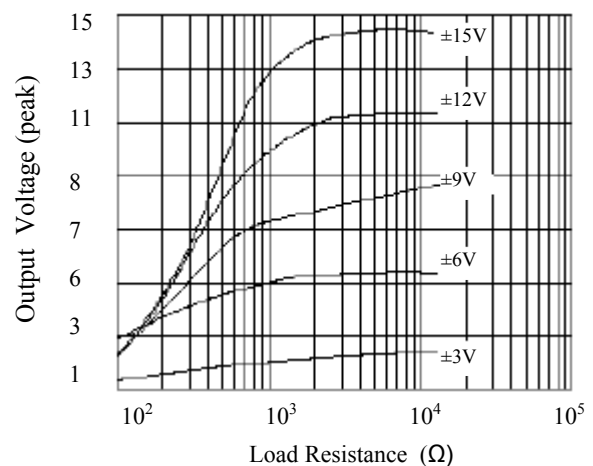
6 Phase Margin vs Frequency



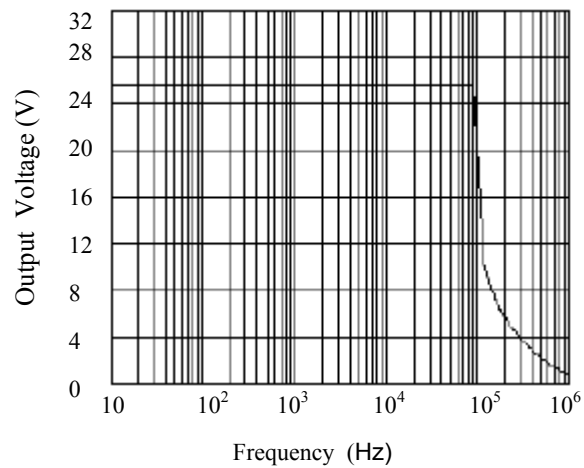
7 Positive Range and Load Resistance



8 Negative Range and Load



9 Output signal and Frequency

**Schematic Diagram (Each Amplifier)**