KODENSHI AUK

Semiconductor

http:// www.auk.co.kr

Low Noise Amplifier SN4558

Description

The SN4558 is a monolithic Integrated Circuit designed for dual operational amplifier.

SOP-8

Application

- Active filters
- Audio amplifiers
- VCOs
- Other electronic circuits

Features

- Power consumption as small as about 50mW (typ.)
- Built-in output short-circuit protecting circuit.
- Internal phase consumption type.
- No latch-up
- Wide same phase mode and differential voltage ranges
- High gain. low noise

ORDERING INFORMATION

Product	Marking	Package
SN4558	SN4558	SOP-8

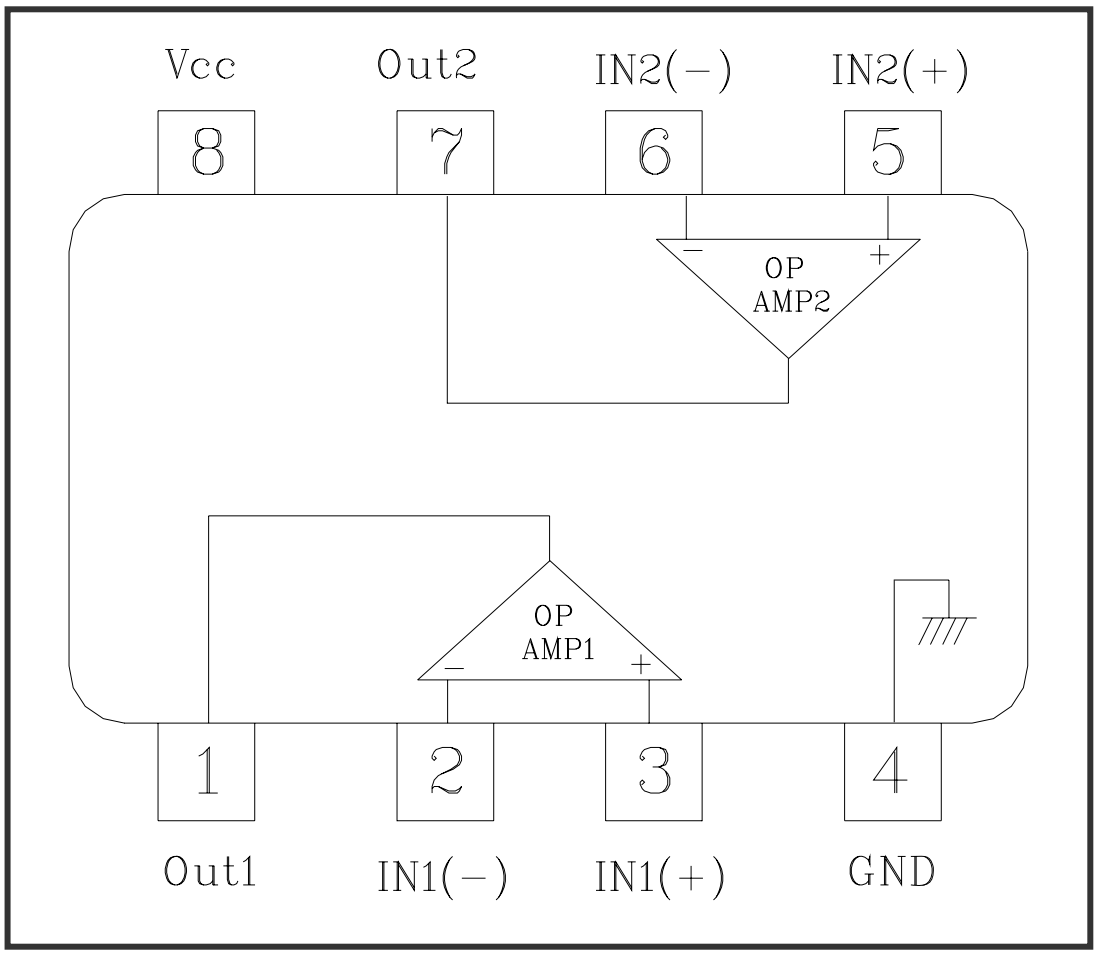
▲ Marking Information

① Device Code

② Year & Week Code

December, 2012 REV. 00

◈ Internal Block Diagram



◈ Pin Description

No	Symbol	I/O	Description
1	Out1	O	OP-Amp1 Output
2	IN1(-)	I	OP-Amp1's Inverting Input
3	IN1(+)	I	OP-Amp1's Non-inverting Input
4	GND	GND	GND
5	IN2(+)	I	OP-Amp2's Non-inverting Input
6	IN2(-)	I	OP-Amp2's Inverting Input
7	Out2	O	OP-Amp2 Output
8	V_{CC}	PWR	V_{CC} for Dual Operational Amplifier

Absolute maximum ratings

Characteristic	Symbol	Ratings	Unit
Supply voltage	V_{CC}	36 or ±18	V
Differential input voltage	V_{IND}	30	V
Input voltage	V_{IN}	±15	V
Power Dissipation	P_D	300	mW
Operating temperature	T_{opr}	-45 ~ +85	°C
Storage temperature	T_{stg}	-55 ~ +150	°C

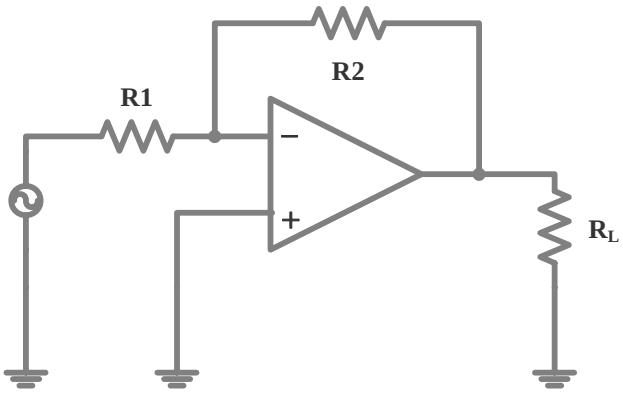
Electrical Characteristics

(Unless otherwise specified. V_{CC} = +15V, V_{EE}=-15V and Ta = 25 °C)

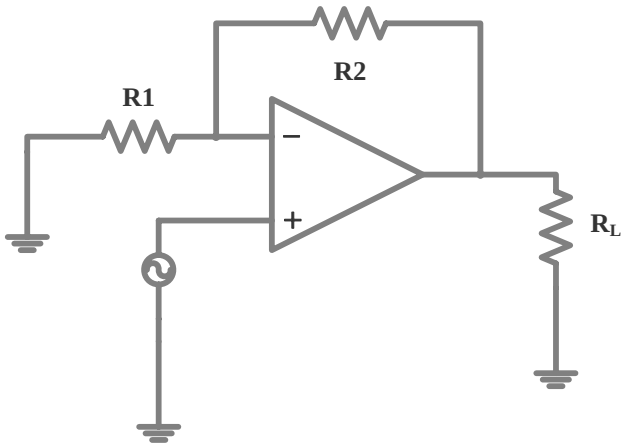
Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input offset voltage	V_{IOS}	Rg ≤10 kΩ	-	0.5	6	mV
Input offset current	I_{IOS}	-	-	5	200	nA
Input bias current	I_{IB}	-	-	60	500	nA
Input common mode Voltage Range	V_{ICR}	-	±12	±14	-	V
Maximum Output Voltage	V_{OM}	R_L≥10 kΩ	±12	±14	-	V
		R_L≥2 kΩ	±10	±13	-	V
Large signal Voltage Gain	G_V	Vout=±10V, RL≥2 kΩ	86	100	-	dB
Common mode rejection ratio	CMRR	Rg ≤10 kΩ	70	90	-	dB
Power supply rejection ratio	PSRR	Rg ≤10 kΩ	-	30	150	uV/V
Slew Rate	SR	G_V=1, R_L≥2 kΩ	-	1.0	-	V/us
Supply Current	I_{CC}	-	-	4.0	6.0	mA
Equivalent input noise voltage	V_{NI}	RIAA, R_S=1 kΩ, f=30 Hz~30 kHz	-	2.5	-	uVrms
Source Current	I_{SOURCE}	-	27	-	-	mA
Sink Current	I_{SINK}	-	27	-	-	mA

Typical Applications

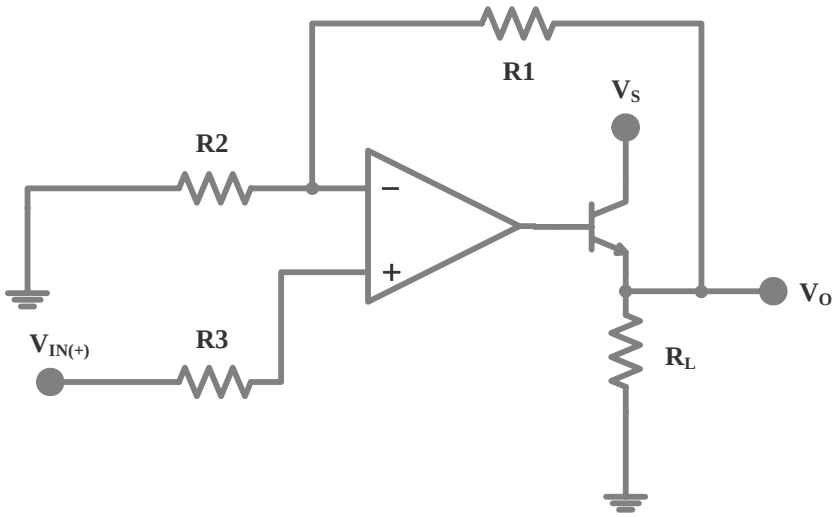
Inverting Amplifier



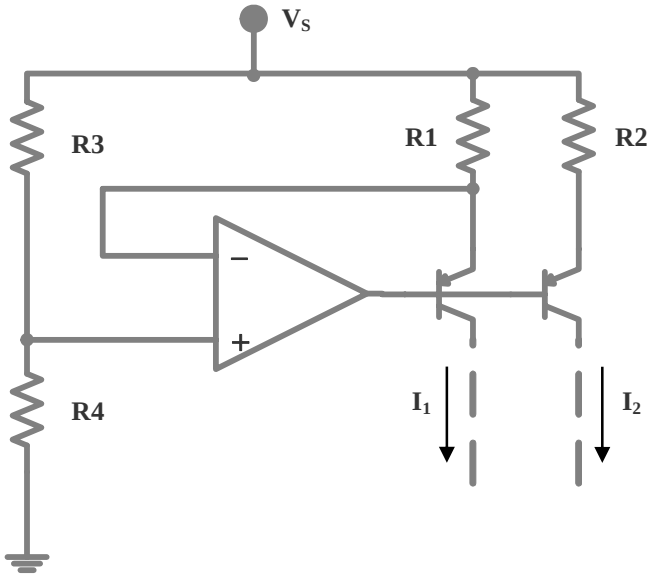
Non-inverting Amplifier



Power Amplifier



Fixed Current Sources



Electrical Characteristic Curves

Fig. 1 G_V - f

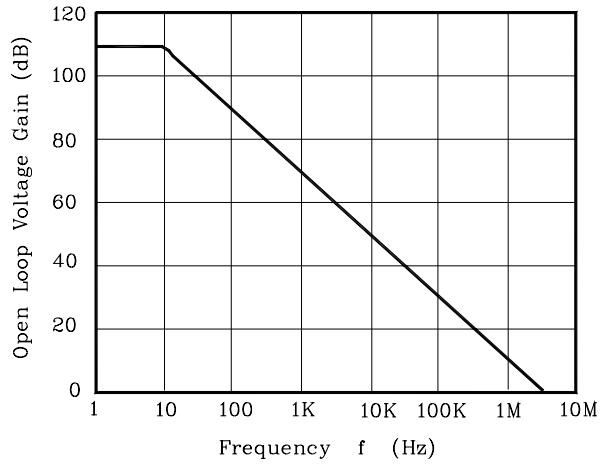


Fig. 2 V_{OP-P} - f

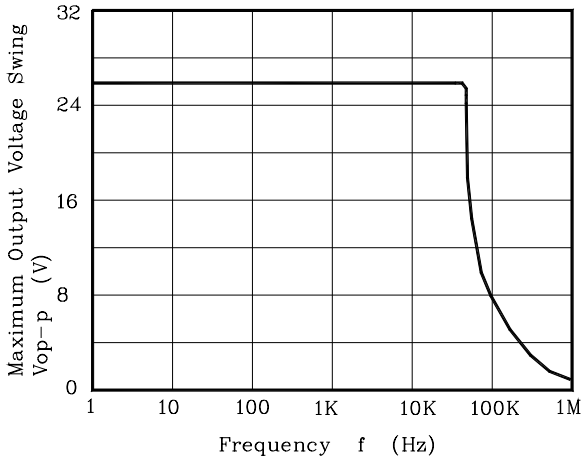


Fig. 3 I_{IB} - T_a

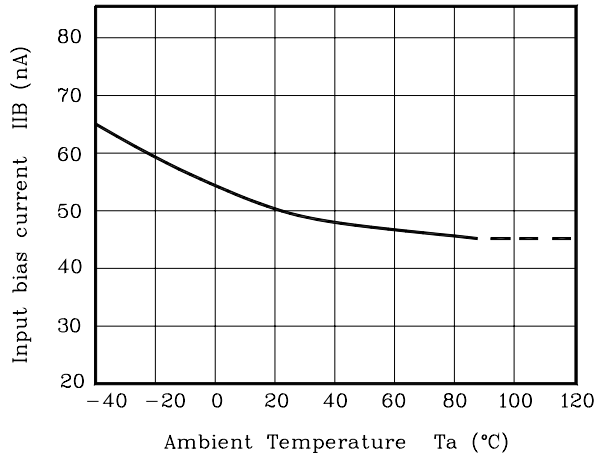


Fig. 4 V_{OM} - V_{CC}, V_{EE}

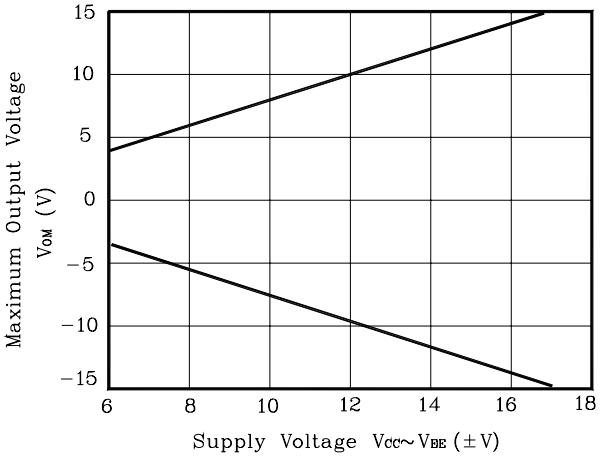


Fig. 5 V_{OP-P} - R_L

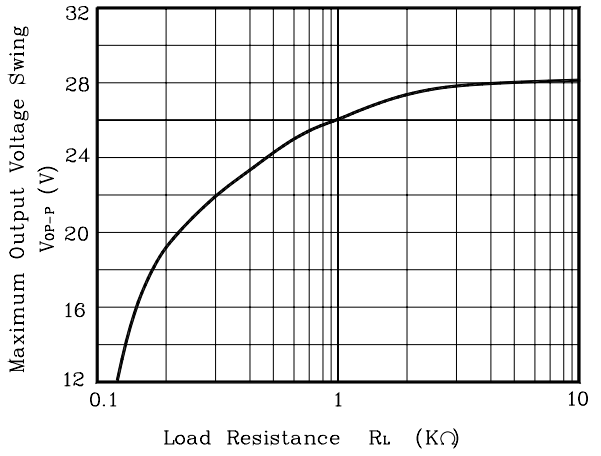
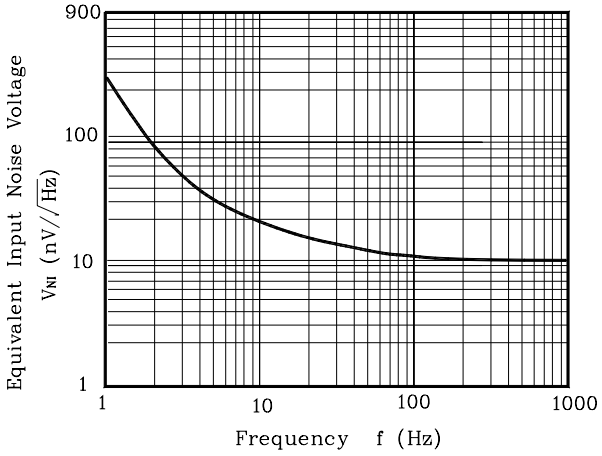
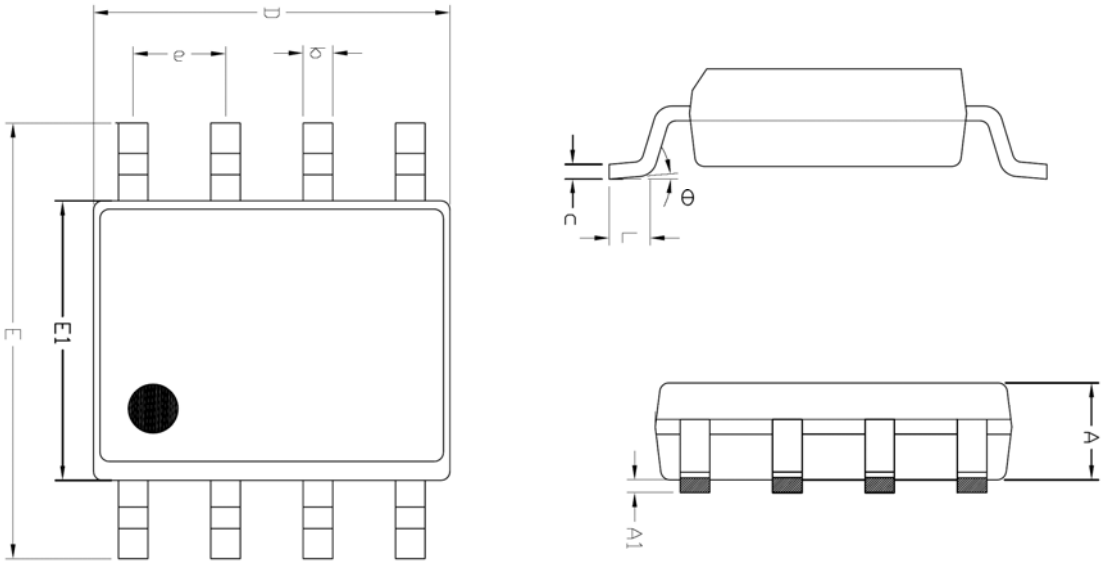


Fig. 6 V_{NI} - f

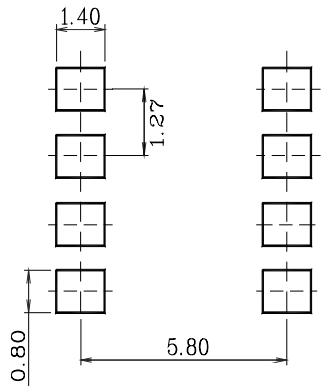


Outline Dimension (Unit : mm)



SYMBOL	MILLIMETER(mm)			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	1.245	—	1.445	
A1	0.125	0.175	0.275	
b	0.320	0.420	0.520	
c	0.170	0.220	0.270	
D	4.802	4.902	5.002	
E	5.870	6.020	6.170	
E1	3.761	3.861	3.961	
e	1.270 BSC			
L	0.462	0.562	0.662	
θ	0 °	—	8 °	

※ Recommend PCB solder land (Unit : mm)



The AUK Corp. products are intended for the use as components in general electronic equipment (Office and communication equipment, measuring equipment, home appliance, etc.).

Please make sure that you consult with us before you use these AUK Corp. products in equipments which require high quality and / or reliability, and in equipments which could have major impact to the welfare of human life(atomic energy control, airplane, spaceship, transportation, combustion control, all types of safety device, etc.). AUK Corp. cannot accept liability to any damage which may occur in case these AUK Corp. products were used in the mentioned equipments without prior consultation with AUK Corp..

Specifications mentioned in this publication are subject to change without notice.