

T-79-06-20

IR94558/IR94558N/IR94559/IR94559N

Low Noise Dual Operational Amplifier

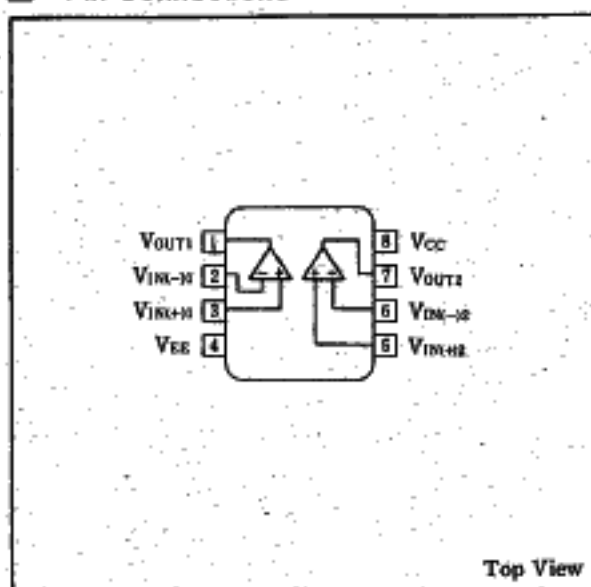
Description

The IR94558/IR94558N and IR94559/IR94559N are low noise dual operational amplifiers. High input resistance, wide common mode input voltage range, and absence of latch-up make these amplifiers ideal for voltage-follower applications.

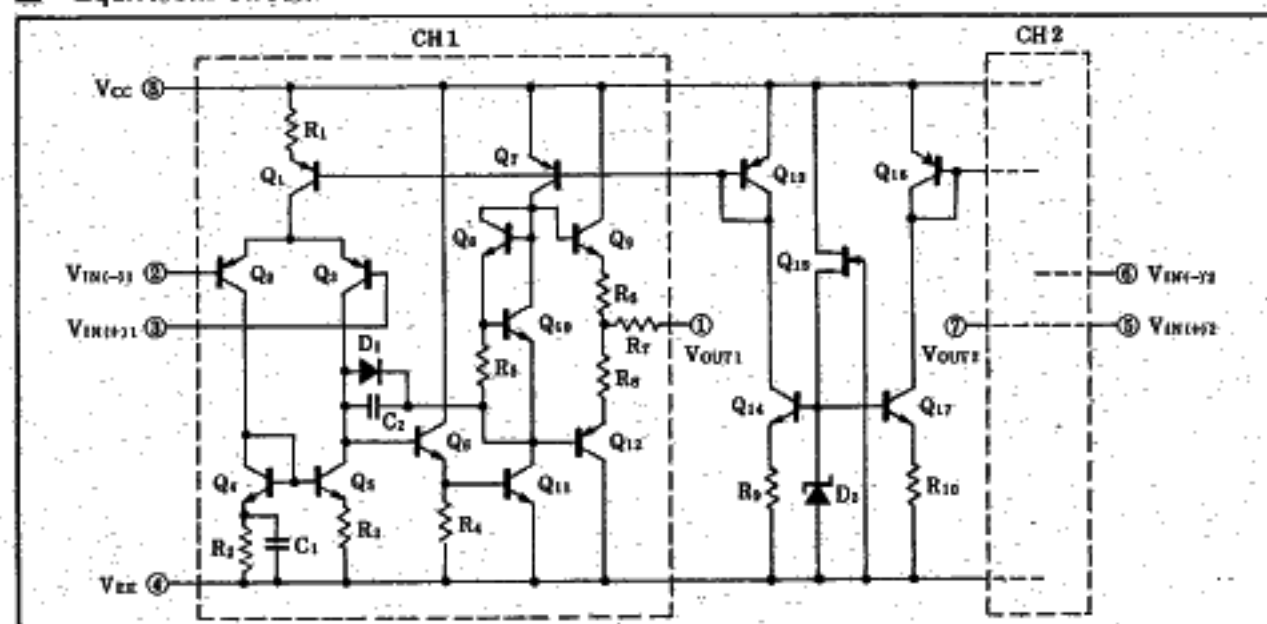
Features

1. No frequency compensation required
2. High input impedance $5M\Omega$ (TYP.)
3. Short circuit protected outputs
4. 8-pin dual-in-line package (IR94558/IR94559)
8-pin small-outline package (IR94558N/IR94559N)

Pin Connections



Equivalent Circuit



SHARP

■ Absolute Maximum Ratings

(Ta=25°C)

Parameter	Symbol	Condition	Rating	Unit
Supply voltage	$V_{CC}-V_{EE}$		36	V
Differential input voltage	V_{ID}		± 30	V
In-phase input voltage*	V_{ICM}		± 15	V
Power dissipation	P_D	$T_a \leq 25^\circ\text{C}$	IR94558/IR94559 500 IR94558N/IR94559N 500	mW
P_D derating ratio	$\Delta P_D/^\circ\text{C}$	$T_a > 25^\circ\text{C}$	IR94558/IR94559 5 IR94558N/IR94559N 4	mW/°C
Operating temperature	T_{opr}		$-20 \sim +75$	°C
Storage temperature	T_{stg}		$-55 \sim +150$	°C

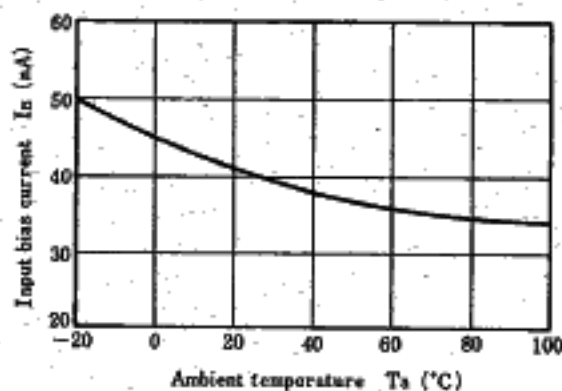
■ Electrical Characteristics

(V_{CC}=15V, V_{EE}=-15V, T_a=25°C)

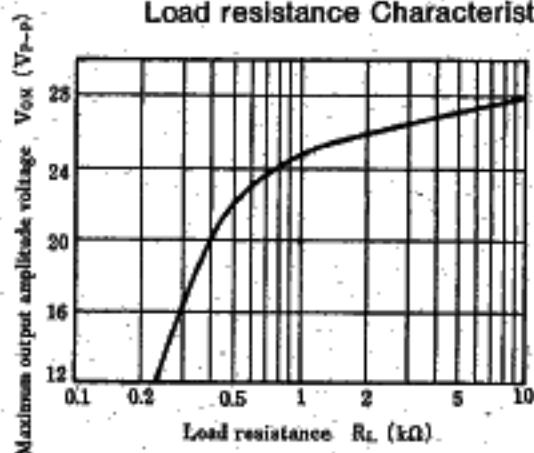
Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Input offset voltage	V_{IO}	$R_S \leq 10\text{k}\Omega$		0.5	6	mV
Input offset current	I_{IO}			5	200	nA
Input bias current	I_B			40	500	nA
Input impedance	Z_{in}		0.3	5		MΩ
In-phase input voltage	V_{ICM}		± 12	± 14		V
Major amplitude voltage gain	A_V	$R_L \geq 2\text{k}\Omega$, $V_{OUT} = \pm 10\text{V}$	86	110		dB
Maximum output voltage	V_{OM}	$R_L \geq 10\text{k}\Omega$	± 12	± 14		V
		$R_L \geq 2\text{k}\Omega$	± 10	± 13		V
Common signal rejection ratio	CMR	$R_S \leq 10\text{k}\Omega$	70	90		dB
Supply voltage rejection ratio	SVR	$R_S \leq 10\text{k}\Omega$		30	150	μV/V
Power dissipation	P_D			105	170	mW
Input conversion noise voltage	V_{NI}	$R_S = 1\text{k}\Omega$, BW=10Hz-30kHz		2.5		μV _{rms}
Gain band product	G.B.	$R_L = 2\text{k}\Omega$	IR94558/IR94558N IR94559/IR94559N	3.0 6.0		MHz
Slew rate	SR	$R_L \geq 2\text{k}\Omega$	IR94558/IR94558N IR94559/IR94559N	1.0 2.0		V/μs

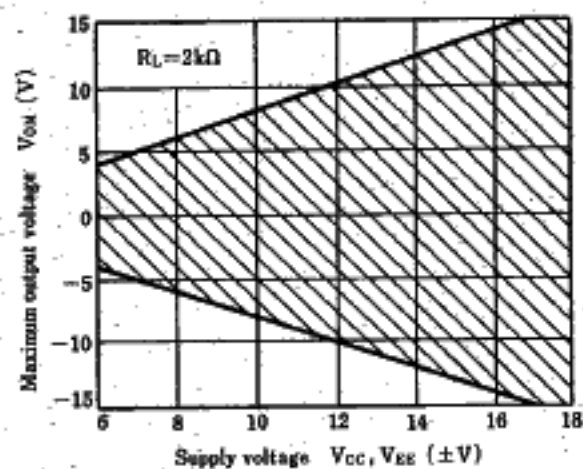
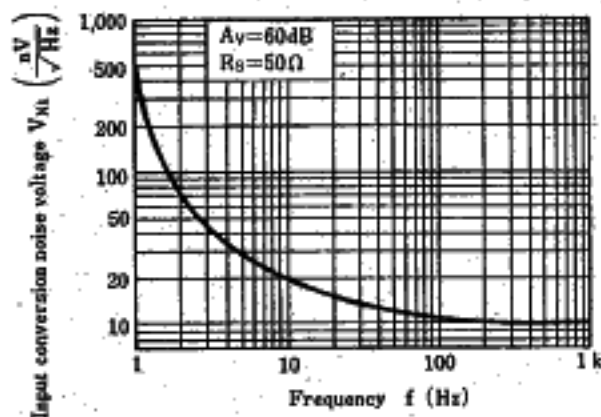
■ Electrical Characteristic Curves (Unless otherwise specified, V_{CC}=15V, V_{EE}=-15V, T_a=25°C)

Input bias current—Ambient temperature Characteristics

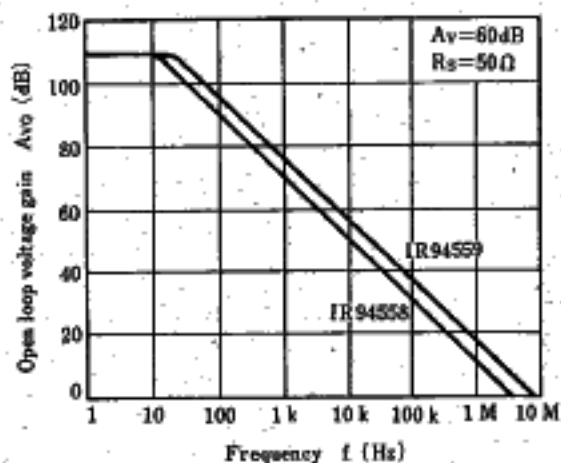


Maximum output amplitude voltage—Load resistance Characteristics



Maximum output voltage—Supply voltage
CharacteristicsInput conversion noise voltage—
Frequency Characteristics

3

Open loop voltage gain—Frequency
CharacteristicsMaximum output amplitude voltage—
Frequency Characteristics