T-79-06-20

IR94558/IR94558N/IR94559/IR94559N

Low Noise Dual Operational Amplifier

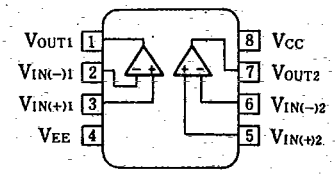
■ Description

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 5MΩ (TYP.)
3. Short circuit protected outputs
4. 8-pin dual-in-line package (IR94558/IR94559)
   8-pin small-outline package (IR94558N/IR94559N)

■ Pin Connections



Top View

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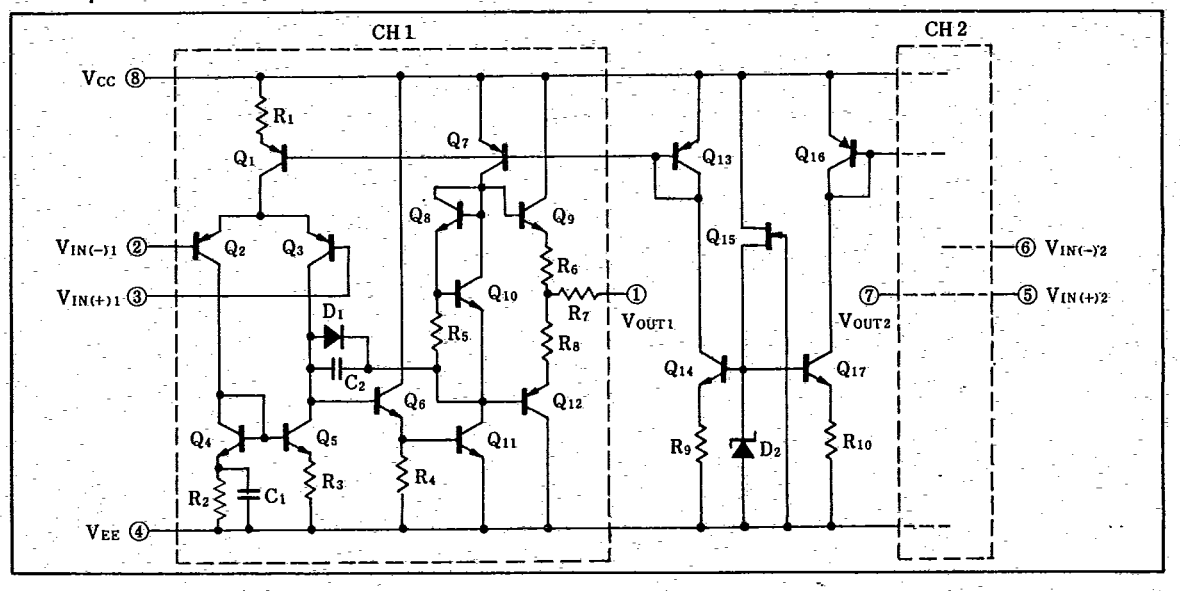
■ Equivalent Circuit



■ Absolute Maximum Ratings

(Ta=25℃)

Parameter	Symbol	Condition		Rating	Unit
Supply voltage	$V_{CC}-V_{EE}$			36	V
Differential input voltage	V_{ID}			±30	V
In-phase input voltage *1	V_{ICM}			±15	V
Power dissipation	P_D	Ta≦25℃	IR94558/IR94559	500	mW
			IR94558N/IR94559N	500	
P_D derating ratio	ΔP_D/℃	Ta>25℃	IR94558/IR94559	5	mW/℃
			IR94558N/IR94559N	4	
Operating temperature	T_{opr}			−20～+75	℃
Storage temperature	T_{stg}			−55～+150	℃

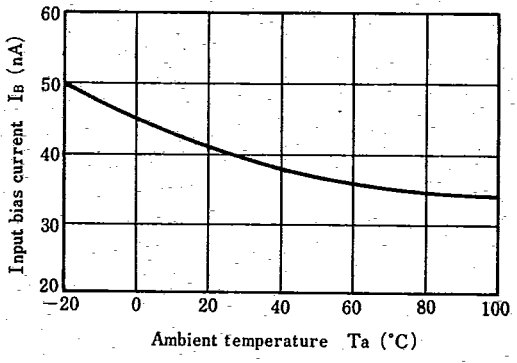
■ Electrical Characteristics

(V_{CC}=15V, V_{EE}=−15V, Ta=25℃)

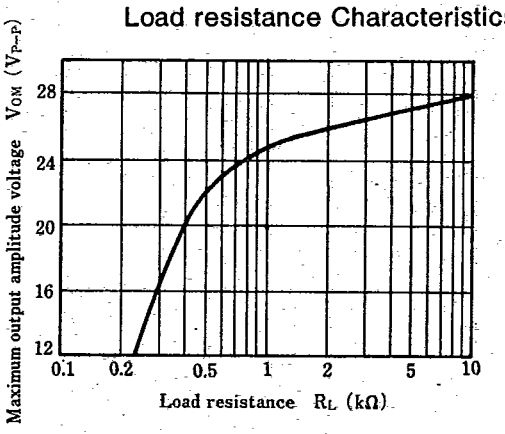
Parameter	Symbol	Condition		MIN.	TYP.	MAX.	Unit
Input offset voltage	V_{IO}	R_S≦10kΩ			0.5	6	mV
Input offset current	I_{IO}				5	200	nA
Input bias current	I_B				40	500	nA
Input impedance	Z_{IN}			0.3	5		MΩ
In-phase input voltage	V_{ICM}			±12	±14		V
Major amplitude voltage gain	A_V	R_L≧2kΩ, V_{OUT}=±10V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

■ Electrical Characteristic Curves (Unless otherwise specified, V_{CC}=15V, V_{EE}=−15V, Ta=25℃)

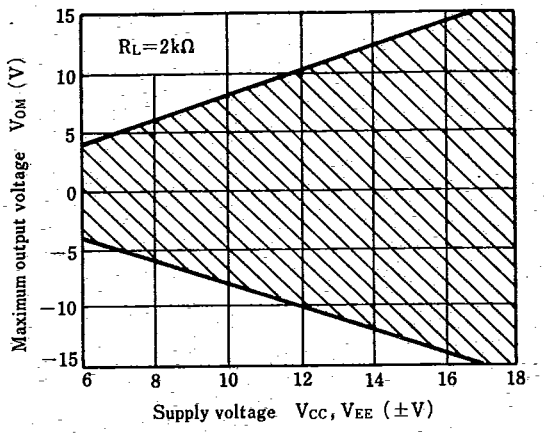
Input bias current—Ambient temperatue Characteristics



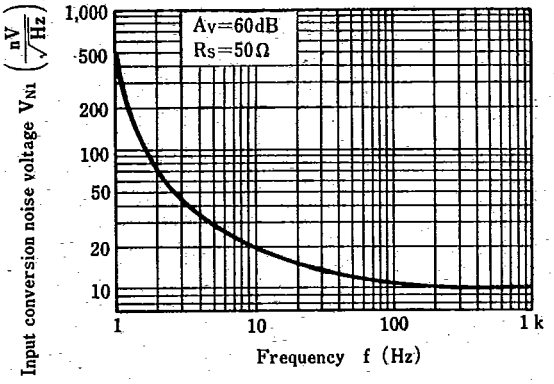
Maximum output amplitude voltage—Load resistance Characteristics



Maximum output voltage—Supply voltage Characteristics



Input conversion noise voltage—Frequency Characteristics



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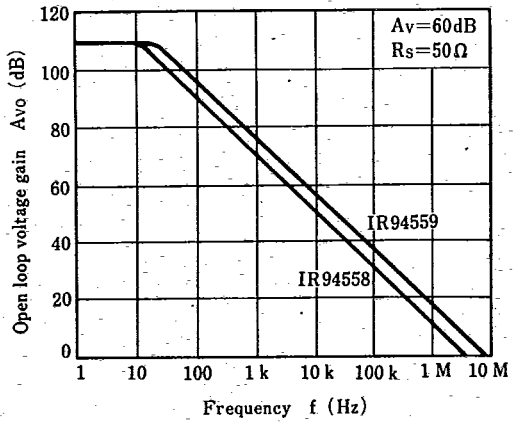
Open loop voltage gain—Frequency Characteristics



Maximum output amplitude voltage—Frequency Characteristics