

T-79-05-20

IR91458/IR91458N

General Purpose Dual
Operational Amplifier

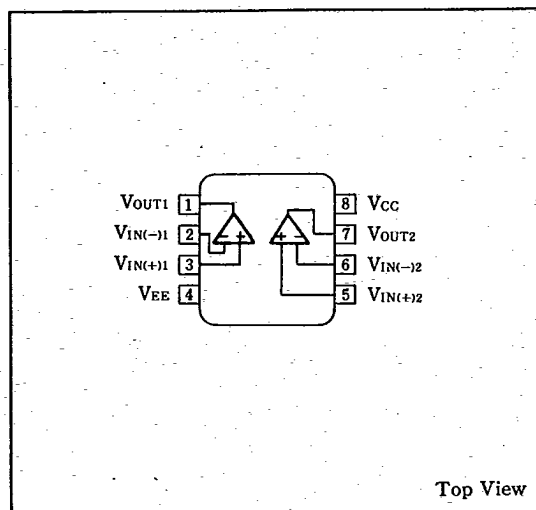
Description

The IR91458/IR91458N is a general purpose dual operational amplifier, which have short-circuit protection for the internal frequency compensation to ensure stability without external components.

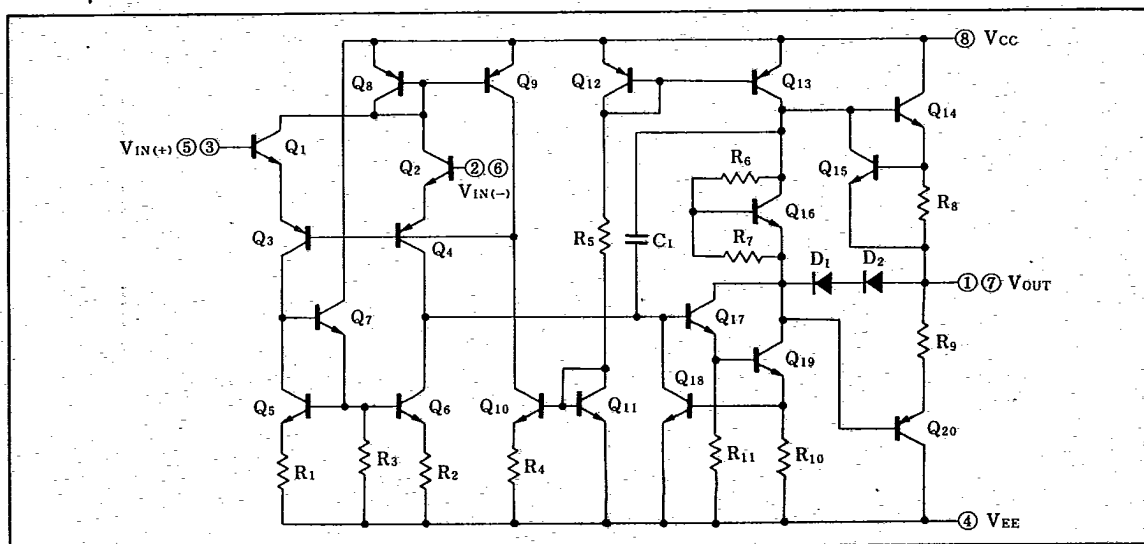
Features

1. Short-circuit protection
2. No frequency compensation required
3. Wide common-mode and differential voltage range
4. Low power dissipation
5. 8-pin dual-in-line package (IR91458)
8-pin small-outline package (IR91458N)

Pin Connections



Equivalent Circuit



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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*1	V_{ICM}			± 15	V
Power dissipation	P_D	$T_a \leq 25^{\circ}\text{C}$	IR91458	500	mW
			IR91458N	400	
P_D derating ratio	$\Delta P_D/^{\circ}\text{C}$	$T_a > 25^{\circ}\text{C}$	IR91458	4	mW/ $^{\circ}\text{C}$
			IR91458N	4	
Operating temperature	T_{opr}			$-20 \sim +70$	$^{\circ}\text{C}$
Storage temperature	T_{sto}			$-55 \sim +150$	$^{\circ}\text{C}$

*1 If supply voltage falls below 15V, input voltage will be equal to the supply voltage

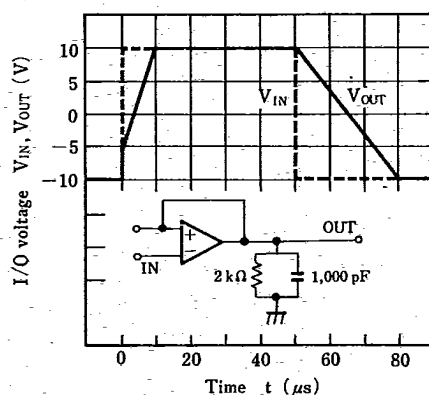
Electrical Characteristics

(V_{CC}=15V, V_{EE}=-15V, Ta=25°C)

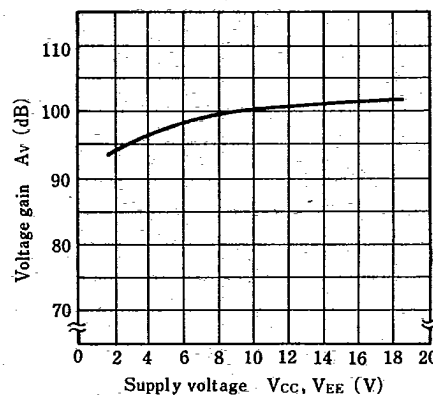
Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Input offset voltage	V_{IO}	$R_S \leq 10\text{k}\Omega$		1.0	6.0	mV
Input offset current	I_{IO}			80	200	nA
Input bias current	I_B			200	500	nA
Input resistance	R_{IN}		0.3	1.0		MΩ
Supply current	I_{CC}			3.0	5.6	mA
Major amplitude voltage gain	A_V	$V_{OUT} = \pm 10\text{V}$, $R_L \geq 2\text{k}\Omega$	86	104		dB
Output voltage amplitude	V_{OS}	$R_L = 10\text{k}\Omega$ $R_L = 2\text{k}\Omega$	± 12 ± 10	± 14 ± 13		V
Input voltage range	V_{ICM}		± 12			V
Common signal rejection ratio	CMR	$R_S \leq 10\text{k}\Omega$	70	90		dB
Supply voltage rejection ratio	SVR	$R_S \leq 10\text{k}\Omega$	77	96		dB

Electrical Characteristic Curves (Unless otherwise specified, Ta=25°C)

Response time Characteristics



Voltage gain—Supply voltage Characteristics



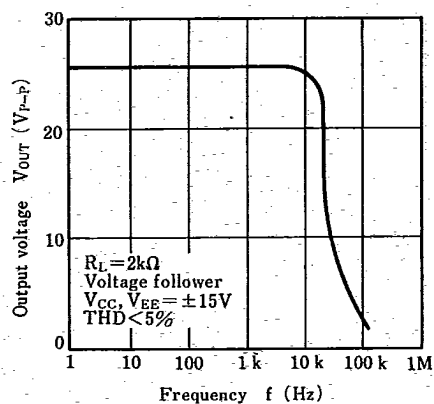
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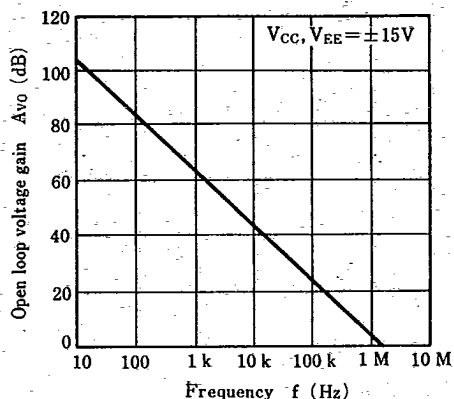
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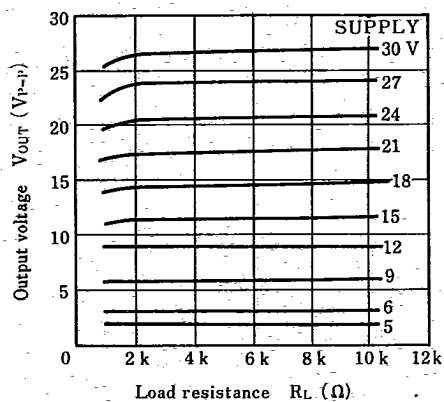
Output voltage — Frequency Characteristics



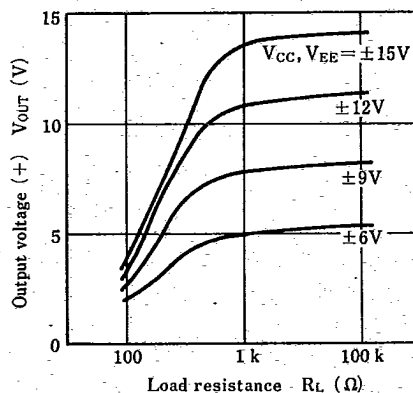
Open loop voltage gain — Frequency Characteristics



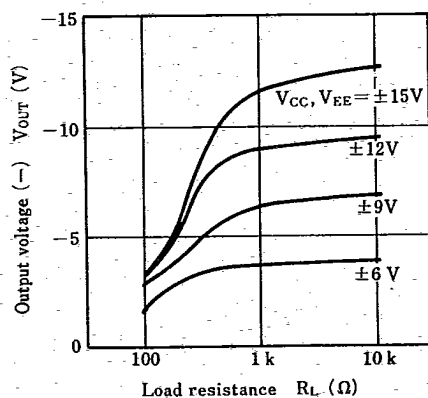
Output voltage — Load resistance Characteristics



Output voltage (+) — Load resistance Characteristics



Output voltage (−) — Load resistance Characteristics



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