T-79-08

IR9022/IR9022N Low Power Dual Operational Amplifier

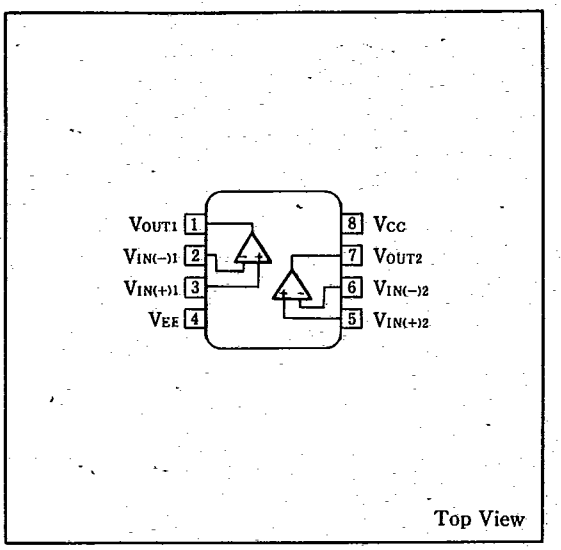
Description

The IR9022/IR9022N is a dual low power operational amplifier for use in variety of low power applications including battery-operated circuits.

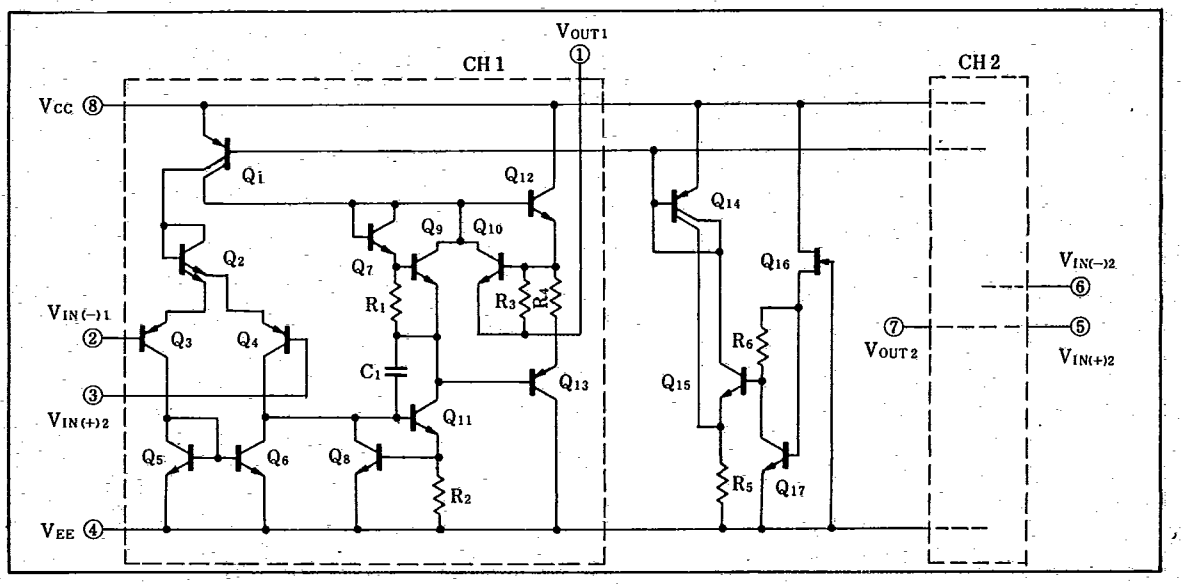
Features

1. Low power dissipation 3.9mW (TYP.)
2. No frequency compensation required
3. Short circuit protected outputs
4. 8-pin dual-in-line package (IR9022)
   8-pin small-outline package (IR9022N)

Pin Connections



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	V_{ICM}			±15	V
Power dissipation	P_D	Ta≦25℃	IR9022	500	mW
			IR9022N	500	
P_D derating ratio	ΔP_D/℃	Ta>25℃	IR9022	5	mW/℃
			IR9022N	4	
Operating temperature	T_{opr}			−20～+70	℃
Storage temperature	T_{stg}		IR9022	−40～+125	℃
			IR9022N	−55～+150	

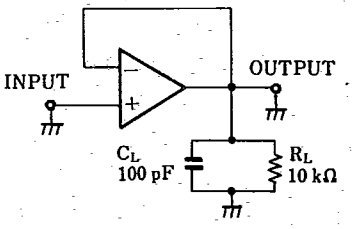
■ Electrical Characteristics

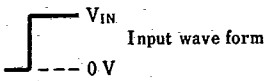
(V_{CC}=15V, V_{EE}=−15V, Ta=25℃)

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Input offset voltage	V_{IO}	R_S≦10kΩ		1	5	mV
Input offset current	I_{IO}			15	80	nA
Input bias current	I_B			100	250	nA
In-phase input voltage	V_{ICM}		±12	±13		V
Major amplitude voltage gain	A_V	R_L≧10kΩ, V_{OUT}=±10V	60	80		dB
Maximum output voltage	V_{OM}	R_L=10kΩ	20	26		V
Common signal rejection ratio	CMR	R_S≦10kΩ	60	72		dB
Supply voltage rejection ratio	SVR	R_S≦10kΩ		30	200	μV/V
Supply current	I_{CC}			130	250	μA
Power dissipation	P_D			3.9	7.5	mW
Output short circuit current	I_{OS}			±6		mA
Input conversion noise voltage	V_{NI}	A_V=20dB, f=1kHz, B=1Hz		50		nV/√Hz
Slew rate	SR	V_{IN}=10V, R_L=10kΩ, C_L=100pF		0.5		V/μs
Rise time	t_r	V_{IN}=20mV, R_L=10kΩ, C_L=100pF		0.3		μs
Overshoot	OS	V_{IN}=20mV, R_L=10kΩ, C_L=100pF		5		%

■ Test Circuit

Overshoot, slew rate, rising time





■ Electrical Characteristic Curve

Power dissipation—Supply voltage Characteristics