

T-79-08

IR9022/IR9022N Low Power Dual Operational Amplifier

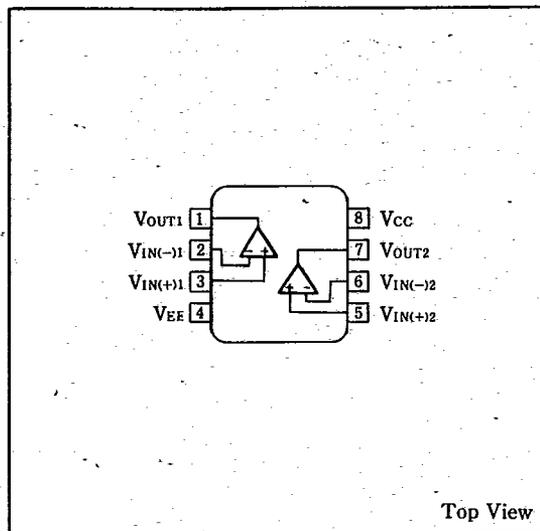
■ Description

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

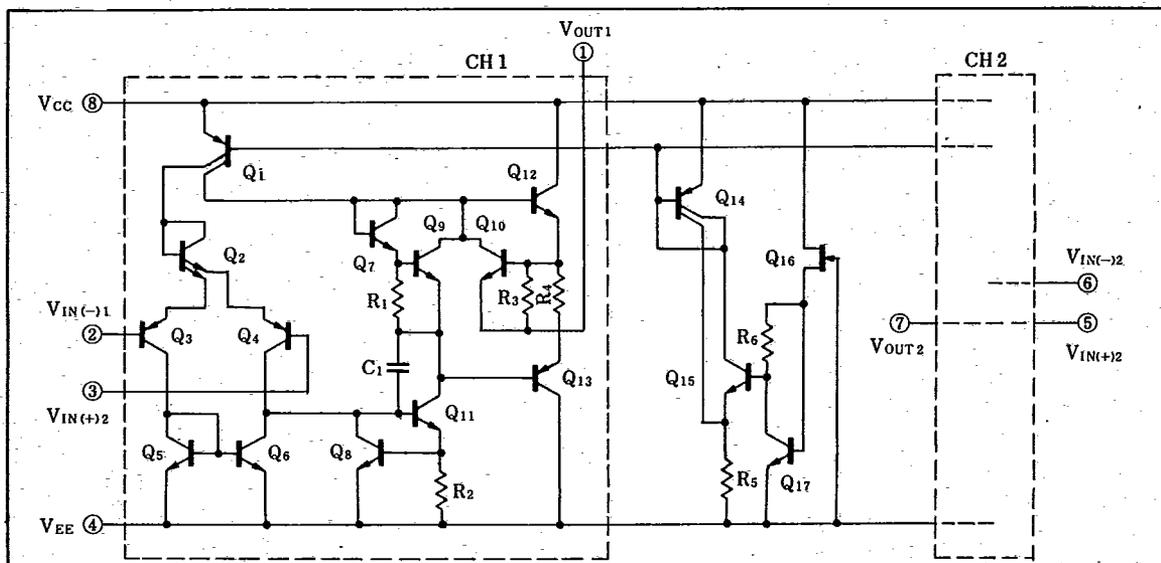
■ Features

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



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	$T_a \leq 25^\circ C$	IR9022	500	mW
			IR9022N	500	
P_D derating ratio	$\Delta P_D/^\circ C$	$T_a > 25^\circ C$	IR9022	5	mW/°C
			IR9022N	4	
Operating temperature	T_{opr}		-20 ~ +70	°C	
Storage temperature	T_{stg}		IR9022	-40 ~ +125	°C
			IR9022N	-55 ~ +150	

Electrical Characteristics

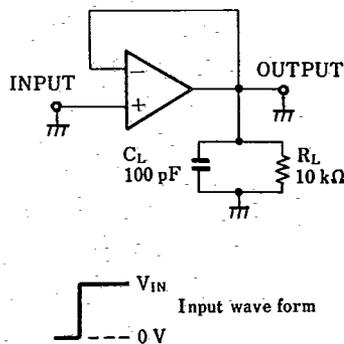
($V_{CC}=15V, V_{EE}=-15V, T_a=25^\circ C$)

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Input offset voltage	V_{IO}	$R_S \leq 10k\Omega$		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	$R_L \geq 10k\Omega, V_{OUT} = \pm 10V$	60	80		dB
Maximum output voltage	V_{OM}	$R_L = 10k\Omega$	20	26		V
Common signal rejection ratio	CMR	$R_S \leq 10k\Omega$	60	72		dB
Supply voltage rejection ratio	SVR	$R_S \leq 10k\Omega$		30	200	$\mu V/V$
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/\sqrt{Hz}
Slew rate	SR	$V_{IN} = 10V, R_L = 10k\Omega, C_L = 100pF$		0.5		$V/\mu s$
Rise time	t_r	$V_{IN} = 20mV, R_L = 10k\Omega, C_L = 100pF$		0.3		μs
Overshoot	OS	$V_{IN} = 20mV, R_L = 10k\Omega, C_L = 100pF$		5		%



Test Circuit

Overshoot, slew rate, rising time



Electrical Characteristic Curve

Power dissipation—Supply voltage Characteristics

