BIPOLAR ANALOG INTEGRATED CIRCUIT

μPC4062

DUAL J-FET INPUT LOW-POWER OPERATIONAL AMPLIFIER

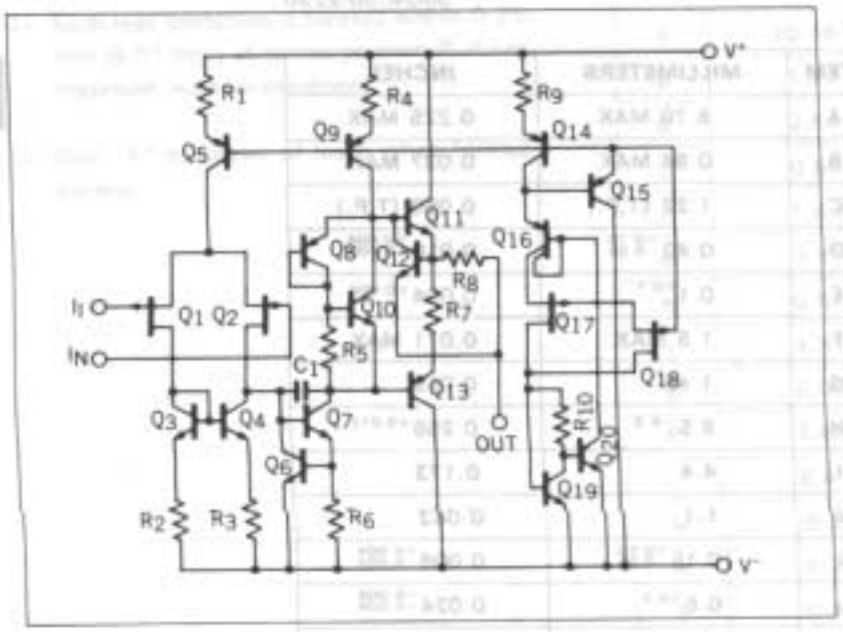
DESCRIPTION

The μPC4062 is a low-power, J-JET input, operational amplifier featuring low supply voltage operation from ±2 V. Supply current of μPC4062 is 1/10 the supply current of a μPC4083 op-amp. With very low input bias current characteristics, the μPC4062 is an excellent choice for hand-held measurement equipment and other low-power application circuits.

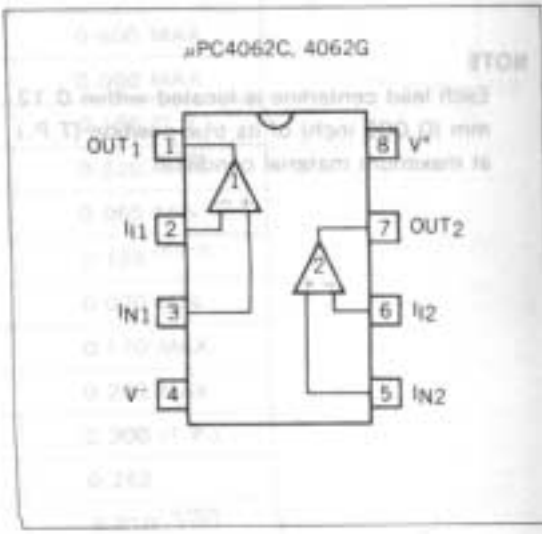
FEATURES

- Low supply current: 400 μA
- Very low input bias and offset currents
- High slew-rate: 3 V/μs
- High input impedance
- Low supply voltage operation
- Output short-circuit protection
- Internal frequency compensation

EQUIVALENT CIRCUIT (1/2 Circuit)



CONNECTION DIAGRAM (Top View)



ORDERING INFORMATION

Part Number	Package
μPC4062C	8 PIN PLASTIC DIP (300 mil)
μPC4062G2	8 PIN PLASTIC SOP (225 mil)

ABSOLUTE MAXIMUM RATINGS (T_a = 25 °C)

PARAMETER		μPC4062	UNIT
Voltage between V^+ and V^-		36	V
Differential Input Voltage		±30	V
Input Voltage (Note 1)		±15	V
Power Dissipation	C Package (Note 2)	350	mW
	G Package (Note 3)	440	mW
Output Short Circuit Duration		Indefinite	s
Operating Temperature Range		−20 to +80	°C
Storage Temperature Range		−55 to +125	°C

Note 1: The absolute maximum input voltage in equal to the supply voltage.
Note 2: Thermal derating factor is −5 mW/°C when ambient temperature is higher than 55 °C.
Note 3: Thermal derating factor is −4.4 mW/°C when ambient temperature is higher than 25 °C.

RECOMMENDED OPERATING CONDITIONS

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply Voltage	$V^{\pm}$	±2		±16	V
Capacitive Load (A_u = +1)	C_L			100	pF
Output Current (SOURCE)	$I_{O\ SOURCE}$			5	mA
Output Current (SINK)	$I_{O\ SINK}$			3.5	mA

ELECTRICAL CHARACTERISTICS (T_a = 25 °C, $V^{\pm}$ = ±15 V)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Input Offset Voltage	V_{IO}		2	10	mV	$R_S \leq 50\ \Omega$
Input Offset Current	I_{IO} (Note 4)		5	50	pA	
Input Bias Current	I_B (Note 4)		10	100	pA	
Large Signal Voltage Gain	A_u	3	9		V/mV	$R_L \geq 10\ k\Omega$, V_O = ±10 V
Supply Current	I_{CC}		400	500	μA	
Common Mode Rejection Ratio	CMR	70	90		dB	
Supply Voltage Rejection Ratio	SVR	70	90		dB	
Output Voltage Swing	V_{om}	±12	+14.0 −13.6		V	$R_L \geq 10\ k\Omega$
Common Mode Input Voltage Range	V_{ICM}	±12	+15 −13		V	
Slew Rate	SR		3		V/μs	A_u = 1
Input Noise Voltage	e_n		30		$nV/\sqrt{Hz}$	R_S = 100 Ω, f = 1 kHz
Unity Gain Frequency	f_{unity}		1		MHz	
Input Offset Voltage	V_{IO}			15	mV	$R_S \leq 50\ \Omega$, T_a = −20 to +70 °C
Offset Voltage Drift	$\Delta V_{IO}/\Delta T$		10		μV/°C	T_a = −20 to +70 °C
Input Bias Current	I_B (Note 4)			3.5	nA	T_a = −20 to +70 °C
Input Offset Current	I_{IO} (Note 4)			2	nA	T_a = −20 to +70 °C

Note 4: Input bias currents are temperature sensitive. Short time measuring method is recommendable to maintain the junction temperature close to the ambient temperature.