

NEC

NEC Electronics Inc.

μ PC4062 DUAL J-FET INPUT LOW-POWER OPERATIONAL AMPLIFIER

PRELIMINARY INFORMATION

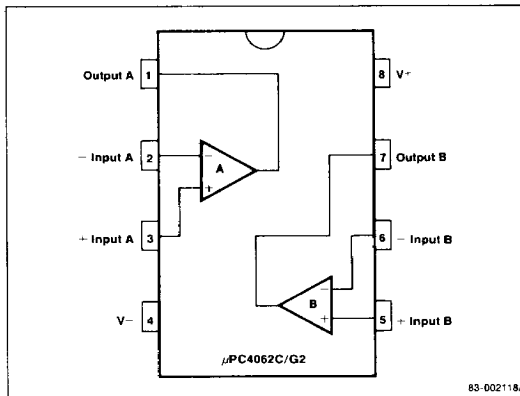
Description

The μ PC4062 is a low-power, J-FET input, operational amplifier featuring low supply voltage operation from ± 1.75 V. Supply current of μ PC4062 is 1/10 the supply current of a μ PC4083 op-amp. With very low input bias current characteristics, the μ PC4062 is an excellent choice for hand-held measurement equipment and other low-power application circuits.

Features

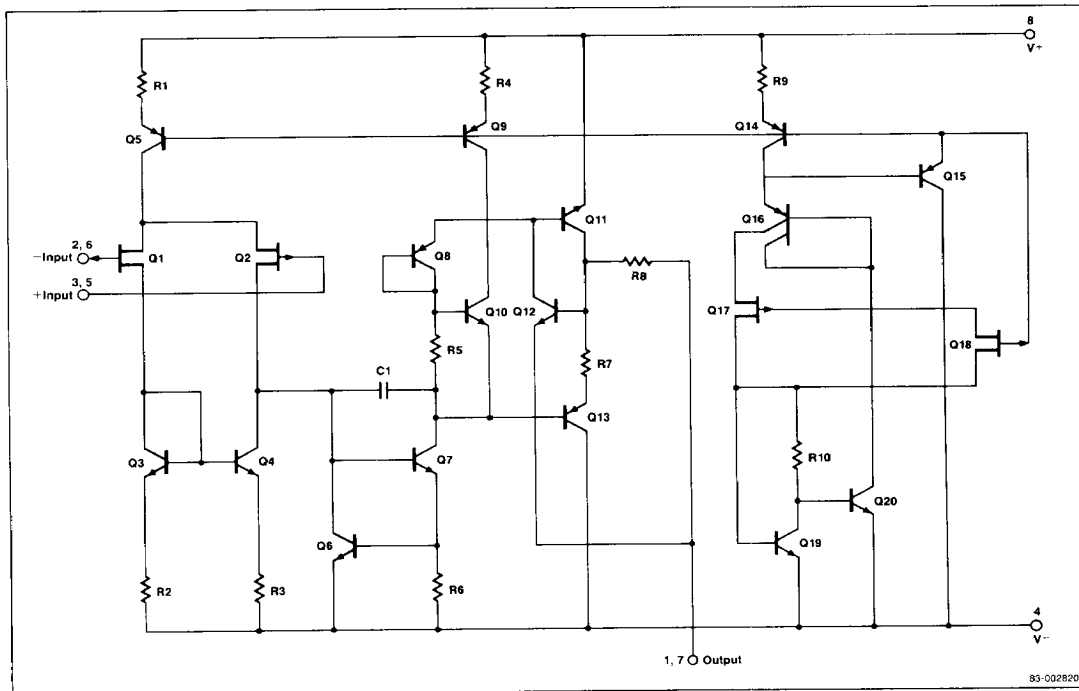
- ☐ Low supply current: 400 μ A
- ☐ Very low input bias and offset currents
- ☐ High slew-rate: 3 V/ μ s
- ☐ High input impedance
- ☐ Low supply voltage operation
- ☐ Output short-circuit protection
- ☐ Internal frequency compensation

Pin Configuration



Equivalent Circuit

1/2 Circuit



Ordering Information

Part Number	Package	Operating Temperature Range
μPC4062C	Plastic DIP	0 to +70°C
μPC4062G2	Plastic Miniflat	0 to +70°C

Recommended Operating Conditions

Parameter	Symbol	Limits			Unit	Test Conditions
		Min.	Typ.	Max.		
Supply Voltage	$V_{\pm}$	±1.75		±16	V	
Output Current	I_O			5	mA	
Load Capacitance (Voltage Follower)	C_L			100	pF	

Electrical Characteristics

$T_A = 25^{\circ}\text{C}$, $V_{\pm} = \pm 15\text{ V}$

Parameter	Symbol	Limits			Unit	Test Conditions
		Min.	Typ.	Max.		
Input Offset Voltage	V_{IO}		2	15	mV	$R_S = 50$
Input Offset Voltage	V_{IO}			20	mV	$R_S = 50$, $T_A = T_{OPT}$
Input Offset Voltage	$\Delta V_{IO}/\Delta T$		7		$\mu\text{V}/^{\circ}\text{C}$	$R_S = 50$, $T_A = T_{OPT}$
Input Offset Current	I_{IO}		5	50	pA	
Input Offset Current	I_{IO}			1.5	nA	$T_A = T_{OPT}$
Input Bias Current	I_b		10	100	pA	
Input Bias Current	I_b			3	nA	$T_A = T_{OPT}$
Large Signal Voltage Gain	A_{VOL}	69	75		dB	$R_L = 10\text{ k}\Omega$, $V_O = \pm 10\text{ V}$
Supply Current	I_{CC}		400	500	μA	
Common Mode Rejection Ratio	CMRR	70	95		dB	
Supply Voltage Rejection Ratio	SVRR	70	95		dB	
Output Voltage Swing	V_{om}	±12	±14		V	$R_L = 10\text{ k}\Omega$
Common Mode Input Voltage	V_{icm}	±12	±15		V	
			−13		V	
Output Current	I_O	±5			mA	$V_{om} = \pm 10\text{ V}$
Slew Rate	SR		3		V/ μs	$R_L = 10\text{ k}\Omega$
Input Noise Voltage	e_n		30		nV/ $\sqrt{\text{Hz}}$	$f = 1\text{ kHz}$
Gain Bandwidth Products	GBW		1		MHz	
Channel Separation			120		dB	$f = 1\text{ to }20\text{ kHz}$

Absolute Maximum Ratings

$T_A = 25^{\circ}\text{C}$

Voltage Between V_+ and V_-	36 V
Power Dissipation (Note 1), C Package	350 mW
Power Dissipation (Note 2), G2 Package	440 mW
Differential Input Voltage	±30 V
Input Voltage (Note 3)	±15 V
Output Short Circuit Duration	Indefinite
Operating Temperature Range	0 to +70°C
Storage Temperature Range	−55 to +125°C

- Notes: 1. Thermal derating factor is 5 mW/ $^{\circ}\text{C}$ for $T_A > +55^{\circ}\text{C}$.
2. Thermal derating factor is 4.4 mW/ $^{\circ}\text{C}$ for $T_A > +25^{\circ}\text{C}$.
3. For supply voltages less than +15 V, the absolute maximum input voltage is equal to the supply voltage.