TL082IP

General Purpose JFET Dual Operational Amplifiers

Descriptions

Consisted of high voltage J-FET and bipolar transistors, the TL082IP is a high speed J-FET dual- channel operational amplifier, featured with high slew rate,low input offset and bias current and low offset voltage temperature rate. The TL082IP provides DIP-8(PDIP-8) package forms.

Feature

- Lower Power Consumption
- Wide Common-Mode And Differential Voltage Ranges
- Low Input Bias And Offset Currents
- Output Short-Circuit Protection
- High Input Impedance
- High Slew Rate
- High Gain-Bandwidth up to 4MHz

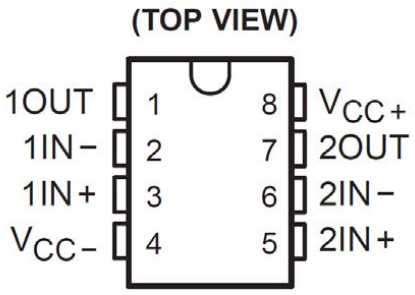
Applications

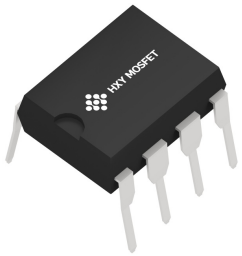
- Battery test equipment
- Pro audio mixers
- Single phase online UPS
- Solar energy: string and central inverter
- Three phase UPS
- Motor drives: AC and servo drive control and power stage modules

Ordering Information

Product Model	Package Type	Packing	Packing Qty
TL082IP	DIP-8(PDIP-8)	Tube	50pcs/Box

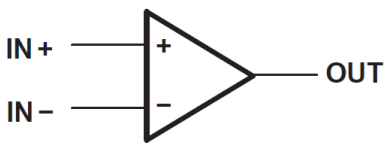
Pins Diagram



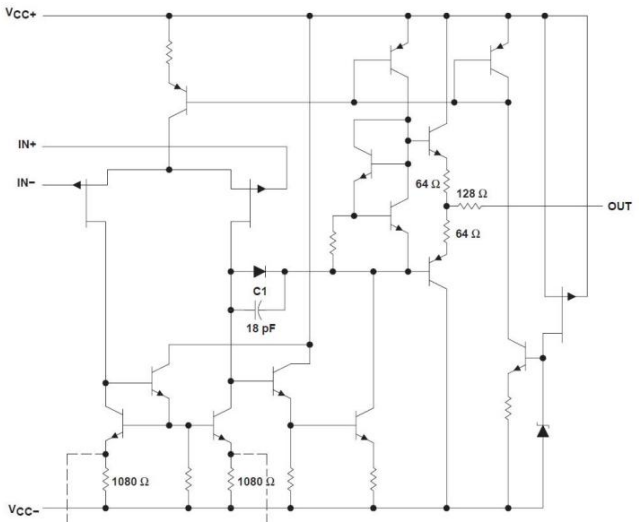


PIN1

Symbol



Internal Diagram



Absolute Maximum Ratings

Symbol	Description	Parameter	Unit
V_{CC}	Supply Voltage	±18	V
V_i	Input Voltage	±14	V
V_{id}	Differential Input Voltage	±28	V
T_{oper}	Operating Temperature Range	0~70	℃
T_{stg}	Storage Temperature Range	-65~+150	℃

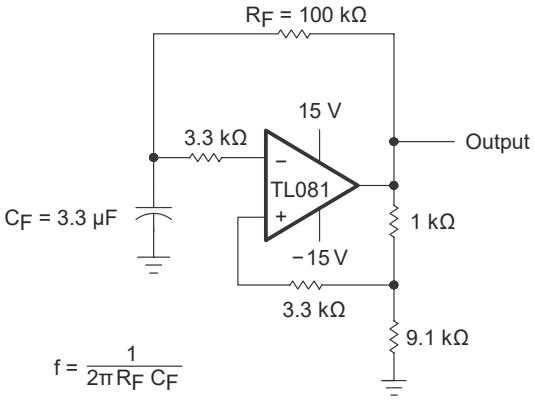
Electrical Parameter Characteristics

(V_{CC}=±15, Tamp=25 ℃ , Unless otherwise specified)

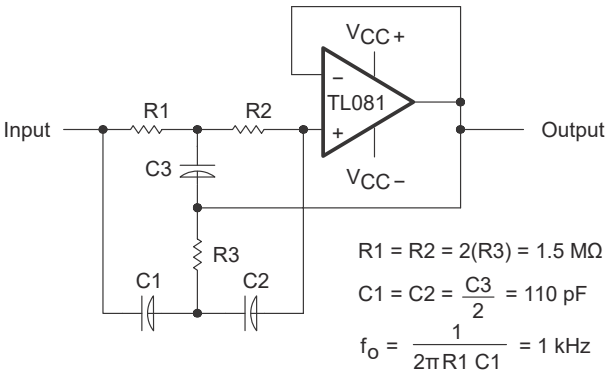
Symbol	Parameter Name	Test Conditions	Parameter			Unit
			Min.	Typ.	Max.	
V_{IO}	Input Offset Voltage	Vo=0V		3	6	mV
I_{IO}	Input Offset Current	Vo=0V			1.5	pA
I_{ib}	Input Bias Current	Vo=0V			2.5	nA
V_{icr}	Input Common Mode Voltage Range		-12	±11	15	V
V_{OM}	Maximum Peak Output Voltage Swing	R_L = 10 kΩ R_L ≥ 2 kΩ	±12 ±10	±13.5 ±12.5		V
A_{VD}	Large-signal differential voltage amplification	R_L ≥ 2 kΩ , Vo = ±10 V	80	95		dB
B1	Gain Bandwidth			3		MHz
CMRR	Common Mode Rejection Ratio		70	85		dB
kSVR	Supply Voltage Re ection Ratio	V_{CC} = ±15 V to ±9 V， Vo=0V	70	86		dB
I_{CC}	Static Supply Current (eachamplifier)			1.4	2.8	mA
SR	Slew Rate	V_I = 10 V	8	13		V/us
t_R	Rise time			0.05		us

Typical Application (Including One Amplifier)

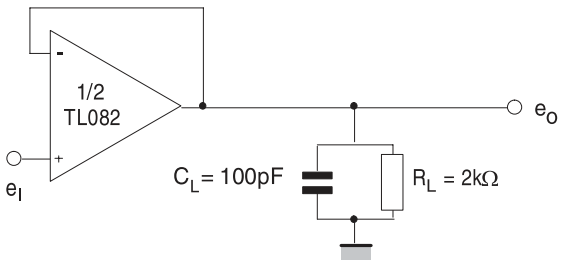
Typical lines



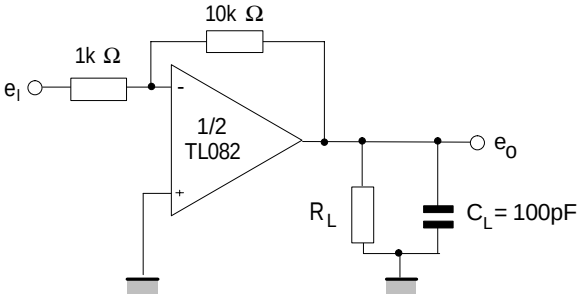
0.5-Hz Square-Wave Oscillator



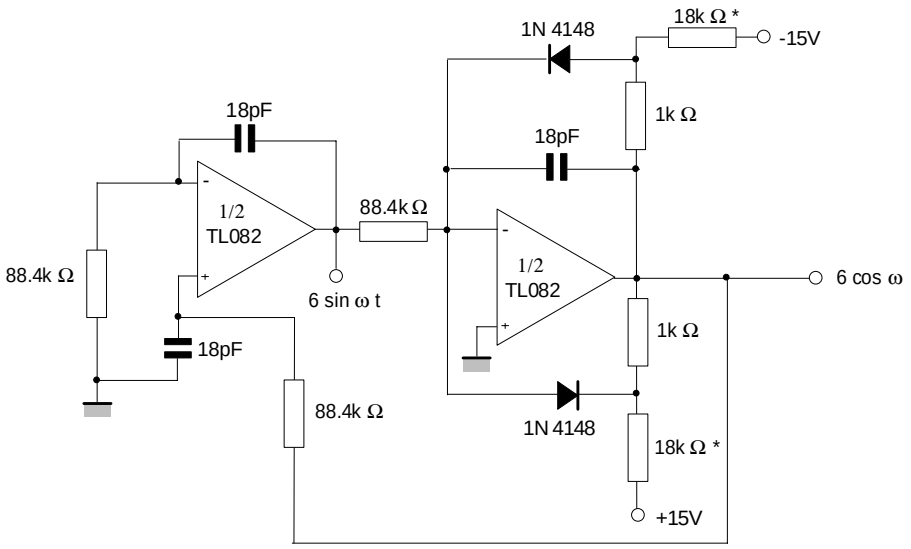
High-Q Notch Filter



Voltage follower

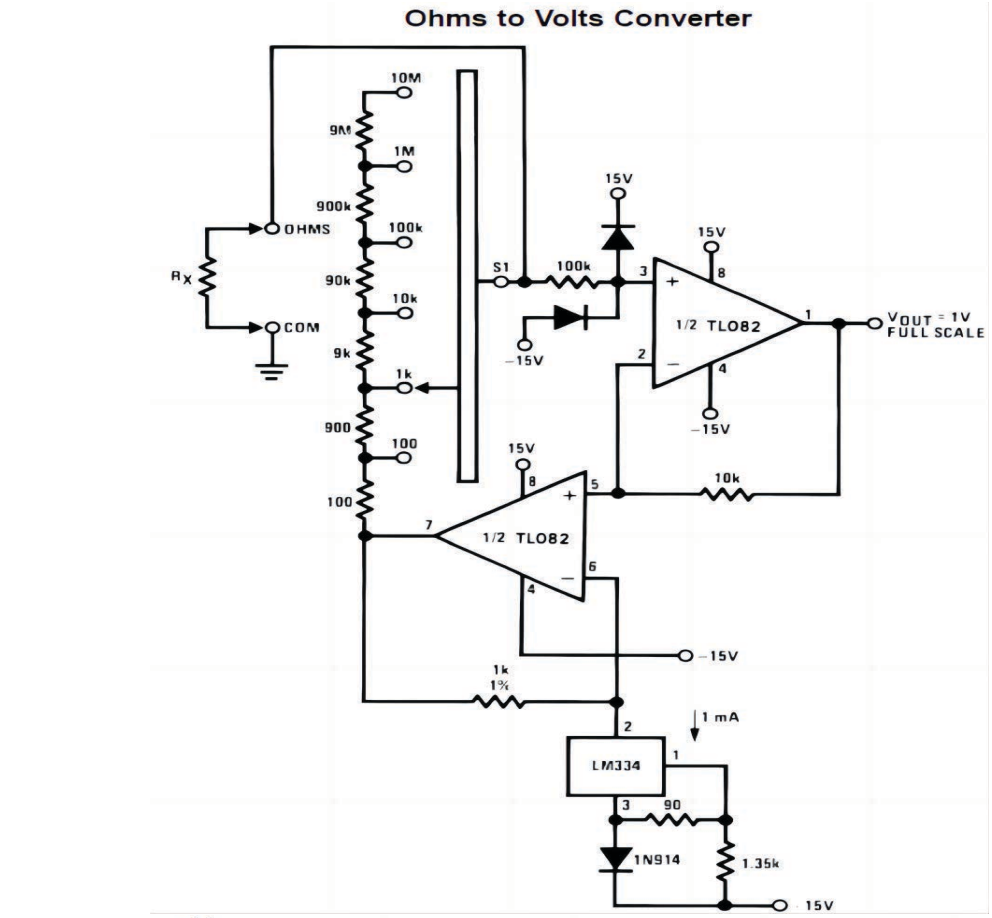


Gain-of-10 inverting amplifier



* These resistor values may be adjusted for a symmetrical output

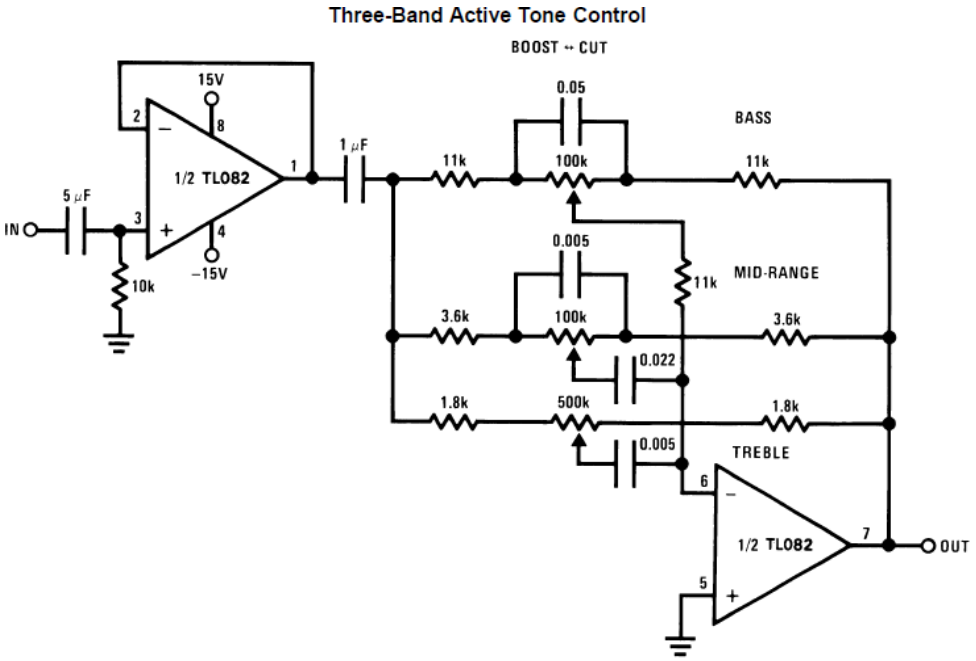
100kHz quadruple oscillator



$$V_O = \frac{1V}{R_{LADDER}} \times R_X$$

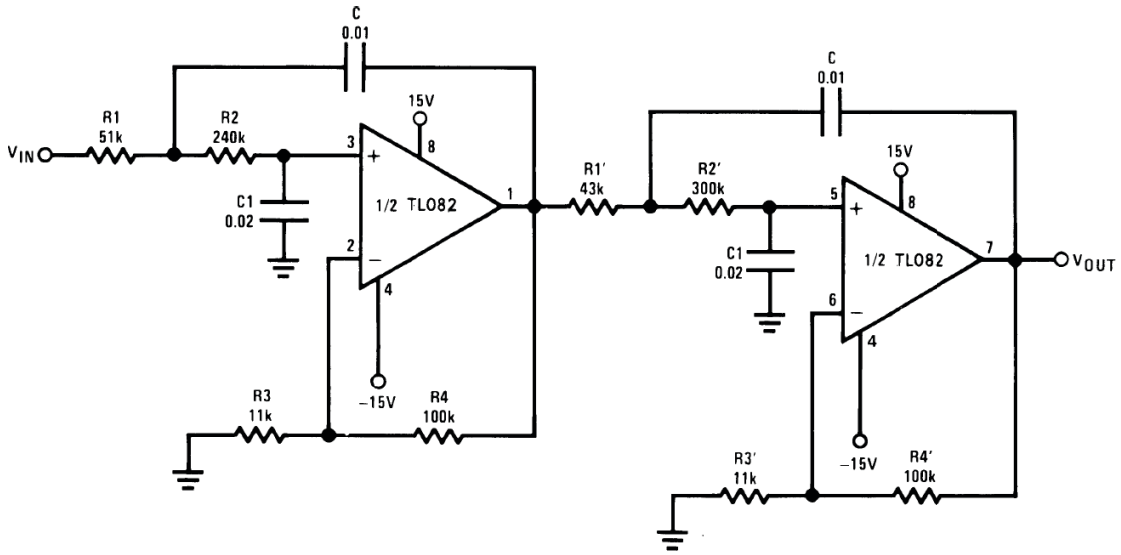
Where R_{LADDER} is the resistance from switch S1 pole to pin 7 of the **TL082CN** .

Resistance-to-Voltage Conversion



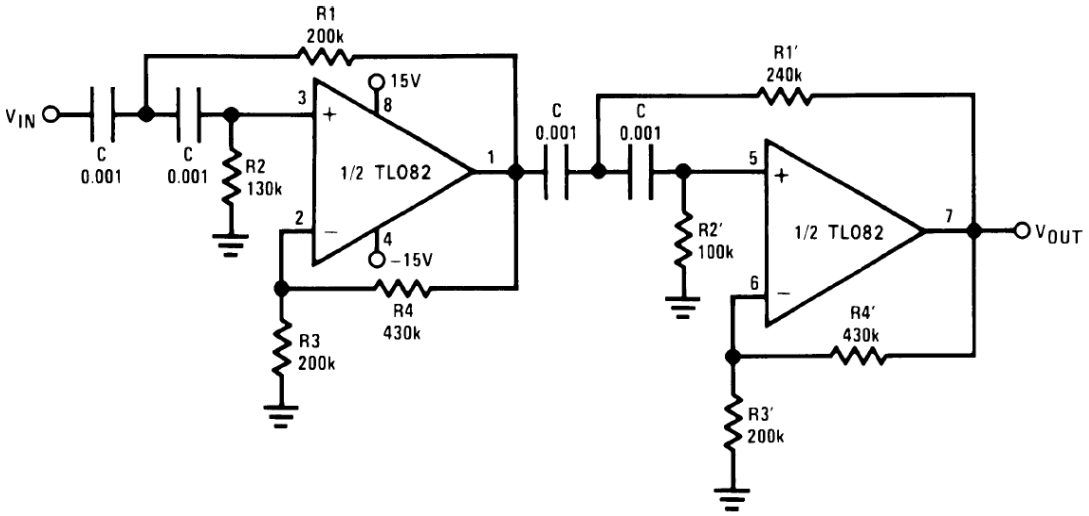
Three-Band Active Tone Control

Fourth Order Low Pass Butterworth Filter



Fourth-order Low Pass Butterworth Filter

Fourth Order High Pass Butterworth Filter

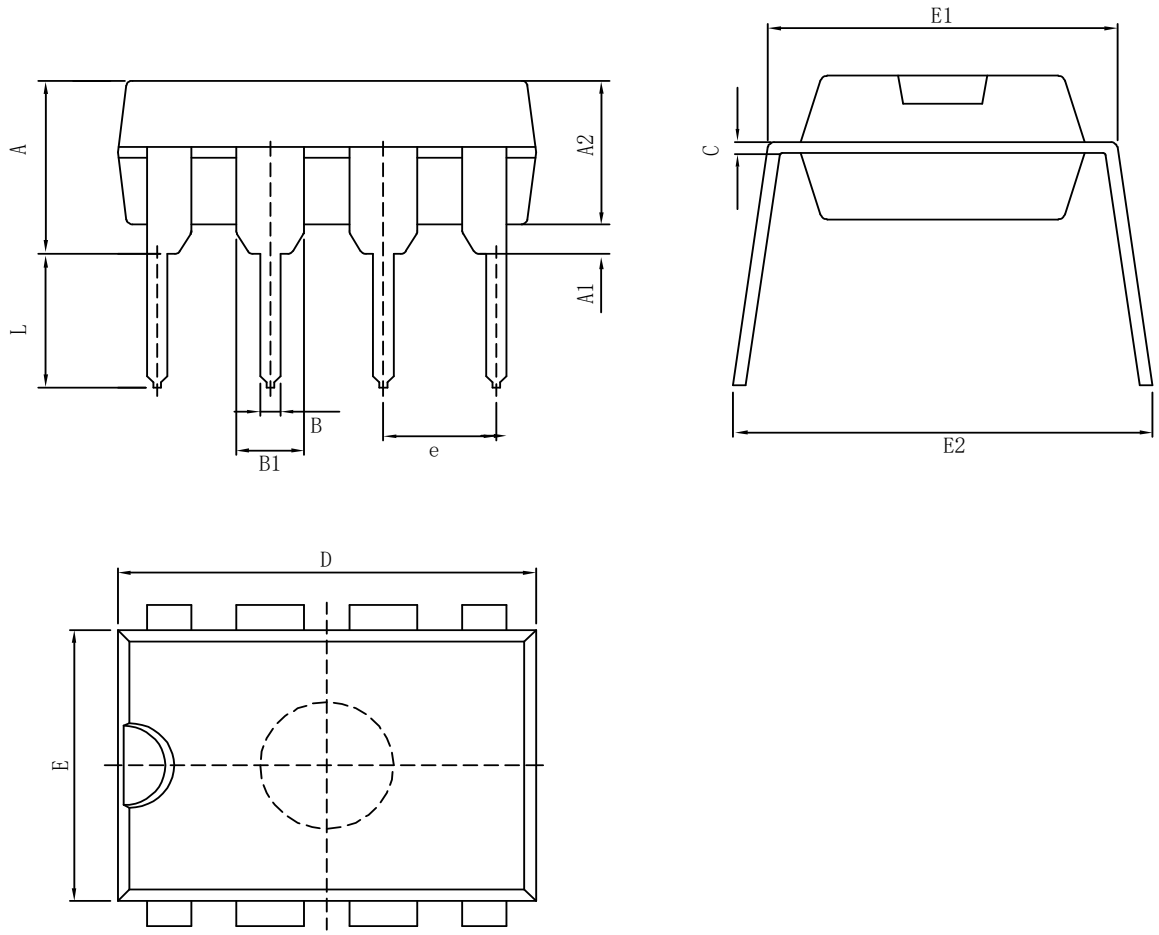


- Corner frequency (f_C) $= \sqrt{\frac{1}{R1R2C^2}} \cdot \frac{1}{2\pi} = \sqrt{\frac{1}{R1'R2'C^2}} \cdot \frac{1}{2\pi}$
- Passband gain (H_O) = (1 + R4/R3) (1 + R4′/R3′)
- First stage Q = 1.31
- Second stage Q = 0.541
- Circuit shown uses closest 5% tolerance resistor values for a filter with a corner frequency of 1 kHz and a passband gain of 10

Fourth Order High Pass Butterworth Filter

Package Information

DIP-8(PDIP-8)



Size / Symbol	Dimensions In Millimeters		Size / Symbol	Dimensions In Inches	
	Min(mm)	Max(mm)		Min(in)	Max(in)
A	3.710	4.310	A	0.146	0.170
A1	0.510		A1	0.020	
A2	3.200	3.600	A2	0.126	0.142
B	0.380	0.570	B	0.015	0.022
B1	1.524(BSC)		B1	0.060(BSC)	
C	0.204	0.360	C	0.008	0.014
D	9.000	9.400	D	0.354	0.370
E	6.200	6.600	E	0.244	0.260
E1	7.320	7.920	E1	0.288	0.312
e	2.540(BSC)		e	0.100(BSC)	
L	3.000	3.600	L	0.118	0.142
E2	8.400	9.000	E2	0.331	0.354

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