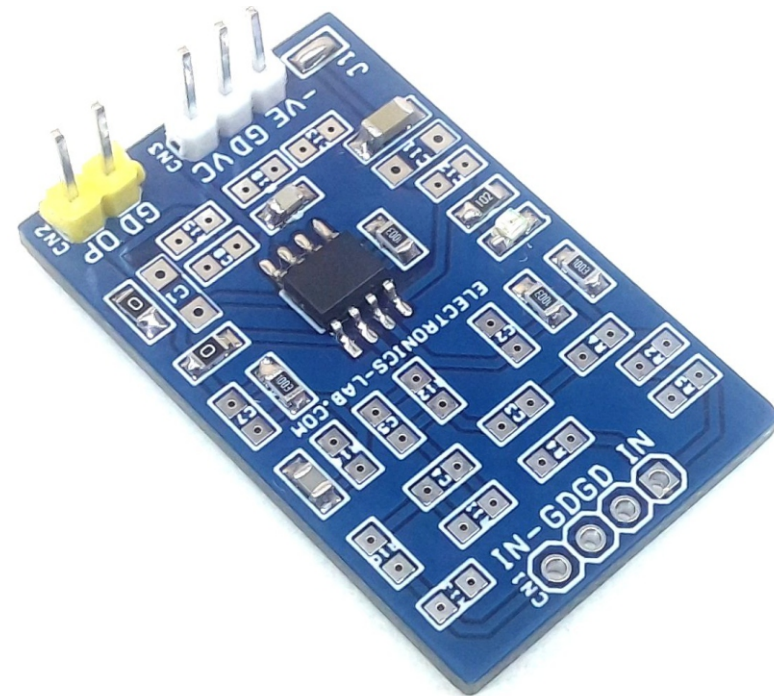# Universal Op-Amp Board for SMD SOIC-8 Package

This is an easy to build and very useful project for hobbyists and students to learn and create OPAMP-based projects. The project accommodates a single op-amp in a SOIC8 package. The project provides the user with multiple choices and extensive flexibility for different applications circuits and configurations. It provides the user with many combinations for various circuit types including active filters, differential amplifiers, external frequency compensation circuits etc. A few examples of application circuits are given below. LM358 op-amp is the right choice to use but any SOIC8 OPAMP with the same pin configuration can be used. It supports dual supply or single supply, Jumper J1 is provided to use this board with a single supply, D1 is the power LED.
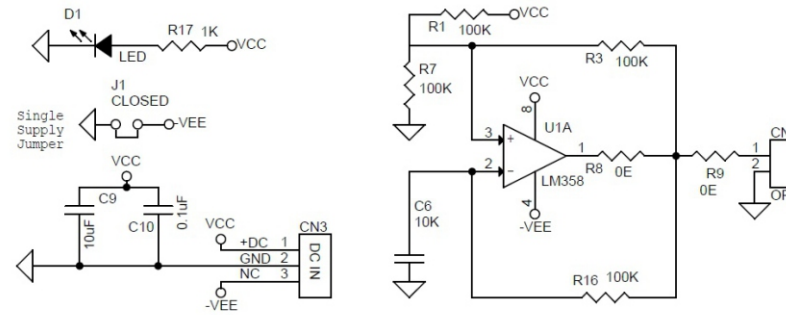
Note: *Refer to example circuit to test the board, it is a bistable multivibrator, with single supply Jumper J1 closed.*

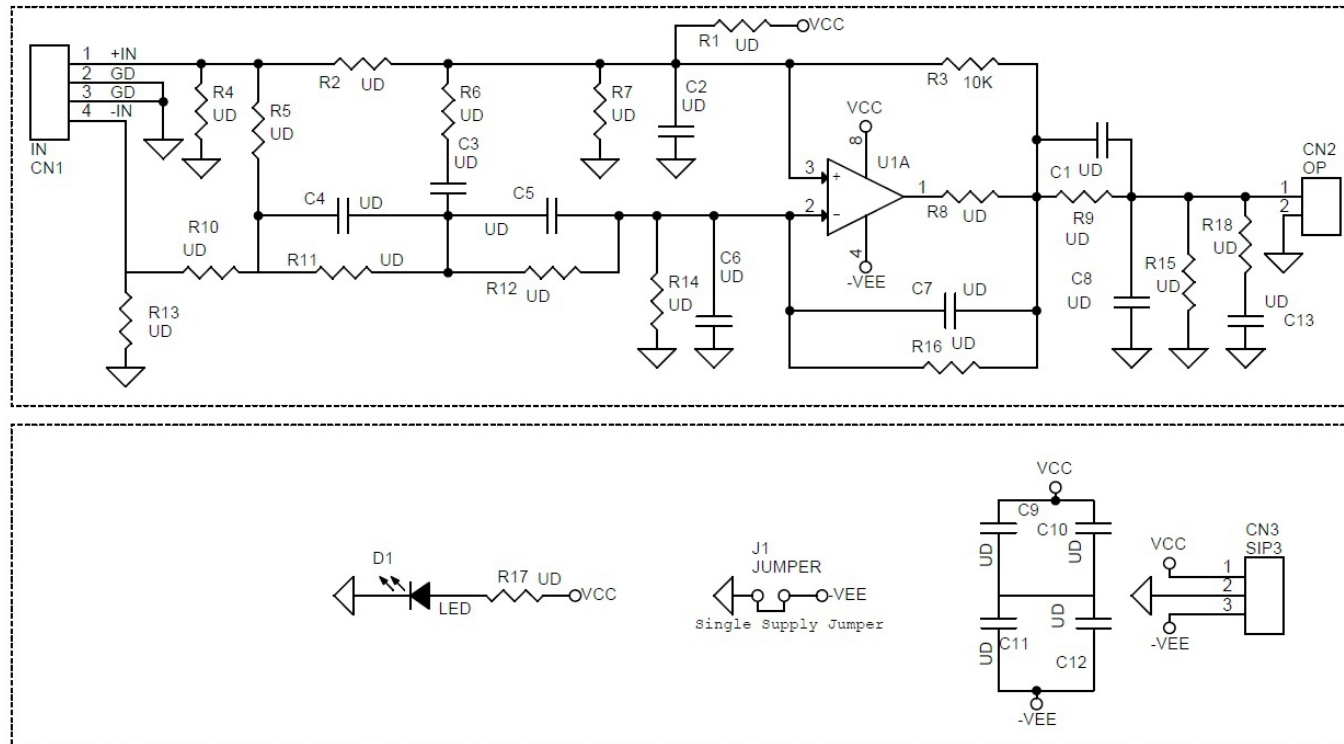**Credits:** *All example schematics are from Analog Devices application note.*

Features
- Single or Dual Supply User defined (Jumper)
- 4 Pin Male Header Connector for inputs
- 3 Pin Male Header for Supply input (Single or Dual)
- Jumper J1 Close for single Supply, Open for Dual Supply
- LED D1 Power LED
- Any SOIC-8 Op-Amp Can be use Pin configuration -Lm358
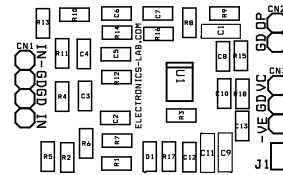- PCB Dimensions 37.31 x 23.50 mm

D1
LED
R17 1K
VCC

J1
CLOSED
VEE

Single
Supply
Jumper

VCC
C9
10uF
C10
0.1uF

VCC
+DC 1
GND 2
NC 3
DC IN
CN3

VEE

R1 100K
VCC
R3 100K
R7
100K

VCC
8
U1A
3 +
2 −
1
LM358
4
-VEE

R8 0E
R9 0E
CN2
1
2
OP

C6
10K

R16 100K

5KHz Pulse Generetor Schematic

1 +IN
2 GD
3 GD
4 -IN
IN
CN1

R4
UD
R5
UD
R2 UD
R6
UD
R7
UD
R1 UD
VCC
C2
UD
R3 10K

VCC
8
3 +
2 −
U1A
1
4
-VEE

R8 UD
C1 UD
R9
UD
CN2
1
2
OP

C3
UD
R10
UD
C4 UD
R11 UD
C5
UD
R12 UD
R14
UD
C6
UD
C7 UD
R16 UD
C8
UD
R15
UD
R18
UD
C13

R13
UD

D1
LED
R17 UD
VCC

J1
JUMPER
VEE
Single Supply Jumper

VCC
C9
C10
UD
UD
C11
UD
C12
UD

VCC
1
2
3
CN3
SIP3
-VEE

-VEE

BOM			
NO.	QNTY	REF.	DESC
1	1	CN1	4 PIN MALE HEADER PITCH 2.54MM
2	1	CN2	2 PIN MALE HEADER PITCH 2.54MM
3	1	CN3	3 PIN MALE HEADER PITCH 2.54MM
4	26	1,C1,R2,C2,R3,C3,R4,C4,C5,R6,C6,R7,R8,C8,R9,R10,R11,R12,R13,C13,R14,R15,R16,R18,R5,C	USER DEFINED
5	2	C9,C11	CAPACITOR SMD SIZE 1206
6	2	C10,C12	CAPACITOR SMD SIZE 0805
7	1	D1	LED RED SMD SIZE 0805
8	1	J1	PCB SOLDER JUMPER
9	1	R17	ALL RESISTORS SIZE 0805
10	1	U1	8 PIN OP-AMP SOIC8

ALL RESISTORS SMD SIZE 0805

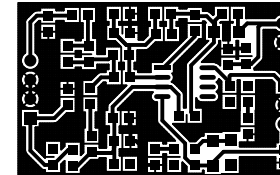| BOM-EXAMPLE SCHEMATIC						
NO.	QNTY.	REF.	DESC.	MANUFACTURER	SUPPLIER	SUPPLIER PART NO
1	1	CN2	2 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5315-ND
2	1	CN3	3 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5316-ND
3	1	C6	1K PF /50V SMD SIZE 0805	MURATA/YAGEO		
4	1	C9	10uF/25V SMD SIZE 1206	MURATA/YAGEO		
5	1	C10	0.1uF/50V SMD SIZE 0805	MURATA/YAGEO		
6	1	D1	LED RED SMD SIZE 0805	OSRAM	DIGIKEY	475-1278-1-ND
7	1	J1	CLOSED-PCB JUMPER			PCB SOLDER JUMPER
8	4	R1,R3,R7,R16	100K 5% SMD SIZE 0805	MURATA/YAGEO		
9	2	R8,R9	0E SMD SIZE 0805	MURATA/YAGEO		
10	1	R17	1K 5% SMD SIZE 0805	MURATA/YAGEO		
11	1	U1	LM358 SOIC8	TI	DIGIKEY	LM358MX/NOPBCT-ND
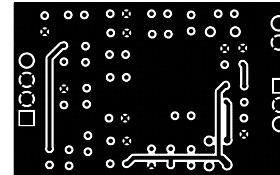
SILK SCREEN TOP   BOTTOM LAYER   TOP LAYER

PCB DIMENSIONS 37.31MM X 23.50MM

-INPUT
GND
GND
+INPUT

OUTPUT
GND

+VCC DC
GND
-VEE DC

JUMPER

PWR LED