

D.I.Y Mini Function Generator

Level: Beginner AK-90



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Soldering Guide

- 1) Turn on the iron to 608°F (310°C) if you are using 60 Tin / 40 Lead solder.
- 2) Place in the Resistors first and flip the board, bend the leads outwards to keep the resistor from falling.
- 3) Solder the leads to the pad and then cut of the leads.
- 4) Solder the potentiometers next. Refer to parts list.
- 5) Solder the capacitors following the same rule from the resistor.
- 6) Solder the switch.
- 7) Solder the LED make sure the + is the non-cut side.
- 8) Solder the IC holder then using a table bent the pins Of the IC inwards and then place over the holder. Make sure the notch is matching the white layout for both the IC and holder. Solder the terminal block with the terminal facing outwards.
- 9) Solder the polarized cap paying attention to + and -.

Pinout of IC

- Pin 1 & Pin 12: Adjust the Sine wave using 100kΩ potentiometer
- Pin 2: Sine Wave Output
- Pin 3: Triangle Wave Output
- Pin 4 & Pin 5: Adjust Duty Cycle of Waveform
- Pin 6: 12 VDC +
- Pin 7: Frequency offset (disabled) NC
- Pin 8: Adjust frequency of Waveform
- Pin 9: Square Wave output
- Pin 10: Timing Capacitor Terminal (Disabled) NC
- Pin 11: 12 VDC –
- Pin 13 & Pin 14: Disabled NC

Parts List

QTY	Description	Remarks PCB Reference #
4	33kΩ ½ Watt Resistor	Orange, Orange, Orange, Gold R6, R5, R7, R8
3	10kΩ ½ Watt Resistor	Brown, Black, Orange, Gold R1, R2, R3
1	2000Ω ½ Watt Resistor	Red, Black, Brown, Gold R4
1	2kΩ Potentiometer	Linear Potentiometer with knob RP1
1	20kΩ Potentiometer	20k on the white disc RP2
1	100kΩ Potentiometer	10k on the white disc RP3
2	.1µF Ceramic Capacitor	Brown ceramic capacitor has 104 written on them C2, C3
2	1000µF Tantalum Capacitor	Beige capacitor has 102 written on them C4, C5
1	100µF Radial Capacitor	The white lines in the circle represent (-) of capacitor C1
1	3mm Red L.E.D	+ is the pin that has no flat cut on the round body LED
1	14 pin IC Holder	Make sure the notch lines up to the board tracing IC
1	ICL8038 IC	Goes over the Holder the first must face towards terminal blocks IC
1	Mini SPDT Switch	Any direction S
3	2 pin Terminal block	The screw terminal must face outwards X1, X2, X3
1	Custom PCB	45 x 60 mm

Schematic Diagram

