

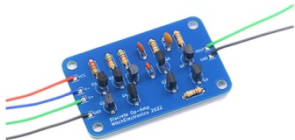
# DISCRETE OP AMP

Electronic Kit | Data Sheet

PRODUCT IMAGE

SCAN FOR INSTRUCTIONS PAGE

SCAN FOR RESOURCE PAGE



MANUFACTURER	MitchElectronics
COUNTRY OF ORIGIN	United Kingdom
ROHS / REACH COMPLIANT	Yes
PRODUCT DESCRIPTION	Operational Amplifiers are key components used in electronics and are found in many (if not most) circuits today! Op-Amps can be used for amplifying voltages, comparing voltages, producing waveforms, and even convert analogue signals into digital numbers but how does an op-amp work? What components make up an op-amp? In this kit, you will build your own simple op-amp that teaches the inner workings of basic op-amps and this discrete op-amp can be used in the many basic configurations including a unity buffer, amplifier, and comparator!

**PRODUCT SPECIFICATION:**

- Component Count: 26
  - Battery Powered?: No
  - Operating Voltage: 5V to 20V
  - Operating Frequency: N/A
  - Output Voltage: 0V to VCC – 1.5V
- Output Current: N/A
  - Dimensions (PCB): 44mm x 29mm
  - Mounting Holes: No
  - Prebuilt: No – Kit form
  - Batteries Not Included

## PARTS INCLUDED:

- 7 x 2N3904
- 2 X 2N3904
- 1 x 10pF Capacitor
- 1 x 1nF Capacitor
- 2 x 100nF Capacitors
- 2 x 100R Resistors
- 1 x 1K5 Resistor
- 2 x 5K6 Resistor
- 1 x 22K Resistor
- 1 x Red Wire
- 1 x Green Wire
- 2 x Blue Wire
- 2 x Black Wire
- 1 x PCB

## APPLICATIONS

The Discrete Op-Amp is a perfect teaching tool for op-amp circuits, and the challenges they suffer due to the poor characteristics of the op-amp. However, the op-amp is still able to be used in basic op-amp configuration, and the in-depth documentation takes the reader through the purpose of every single component including the input bias, amplification, miller capacitor, and output stage. This kit is ideal for educating A-Level and above, and the few components allow for the kit to be built and tested in under an hour.

## KIT INSTRUCTIONS

<https://mitchelectronics.co.uk/resources/discrete-op-amp-kit-instructions/>

## ELECTRONICS CONSTRUCTION MANUAL

<https://www.mitchelectronics.co.uk/documents/electronicsConstructionManual.pdf>

## NOTES

Note that product specifics such as output frequency depend on the tolerance of the components. The numbers provided here are an approximation only. Also take note that the estimated delivery is not guaranteed (unless special delivery is chosen) and free delivery has a maximum waiting time of two weeks. Any product that is returned which is built using lead solder is ineligible for a refund.

All parts sold by MitchElectronics are compliant with RoHS and REACH directives which ensure that they can be used in commercial environments as well as complying with environmental laws.