

Operational Amplifier ICs (LM358, TL072)

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | Electronics & Prototyping

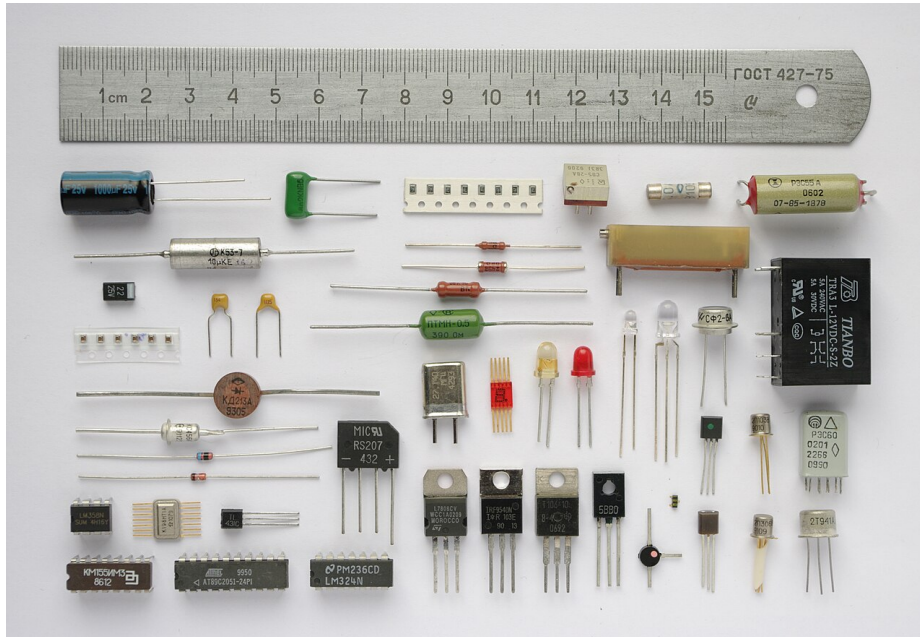


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Operational amplifier ICs amplify and condition sensor signals, build comparators, filters and oscillators: the LM358 is a low-cost dual op-amp for beginners while the TL072 offers lower noise. Both teach the op-amp workhorse.

Key Features

- LM358 dual op-amp, single supply
- TL072 dual JFET op-amp, low noise
- DIP-8 packages
- Wide supply ranges
- Output short-circuit protection

Typical Uses in the Workshop

- Amplify microphone and sensor signals
- Build comparators and Schmitt triggers
- Construct active filters
- Create oscillators and signal generators

Safe Operation

1. Wire the power rails correctly
2. Check the input common-mode range
3. Set gain with the feedback resistor ratio
4. Check input vs output swing
5. Test the circuit on a breadboard

SAFETY NOTES

- Do not exceed the supply voltage
- Mind the output current limits
- Check the inputs stay within the rail
- Keep the IC cool for higher supplies
- Handle with ESD care

Maintenance & Consumables

- Keep ICs in antistatic storage
- Check sockets and solder joints
- Test the chip in a known circuit
- Replace suspect ICs first
- Label the values and pinouts

Specification & Buying Notes

LM358 and TL072 in DIP with sockets cover beginner through advanced analogue work. Quality chips meet the datasheet; surplus batches may be marginal.