Electronic Devices

Resistor / Capacitor / Voltage Regulator

10^4 = 10 \times 10^4 \mu F = 100 nF

Input → Output

Gnd (common)
Standard ±5% Resistor Values

First 2 color bands:

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Potentiometers (Trimmers) & Rheostats

Potentiometer / Trimmer (3 terminals)

Rheostat / Variable Resistor (2 terminals)
Capacitors

Electrolytic
- large values
- polar (conduct in 1 direction)
- explode if voltage too high

Ceramic
- small values
- non-polar
- breakdown if voltage too high

Ceramic Capacitors
Electrolytic Capacitors

Diodes / LEDs

Anode         Cathode
+              -
Integrated Circuits (IC)

Datasheets:
www.digikey.com

Sockets / Headers
Breadboard / Prototyping Board
Printed Circuit Board

Banana Cables

Use stranded wire !!!
Altera / Breadboard Cable  
(Project #2)

Use woodworking vise in ThunderLab to press connectors onto ribbon cable

Design Project

- STL Printer
  - 100g material / team
  - Details in SW lecture
  - Email .stl, .sldprt & .sldasm files to 3-D Parts TA
  - Only make parts too complicated to make by hand!

- Electronic Parts
  - Excel order form on website
  - Email completed form to parts TA by midnight before Open Lab session
  - Parts delivered to Open Lab session
Design Project

- Sheet Metal Parts
  - Waterjet cutter
  - Bring drawings to me for verification
  - Must include
    • Material & thickness
    • Overall dimension
  - Email .dxf files to:
    • help@ece.ubc.ca

- PCB
  - Bring drawings to PCB TA for verification
  - Email Gerber files to PCB TA
  - Details in Altium lecture
  - Project #2 only

Design Project

- Other parts
  - See “Suppliers” icon on “Tools” page
  - Fasteners
    • Screws
    • Pins
    • Clips

- Scavenged Parts
  - Toys
  - VCRs
  - Kitchen Appliances
  - Check with TA to make sure you are not using banned parts