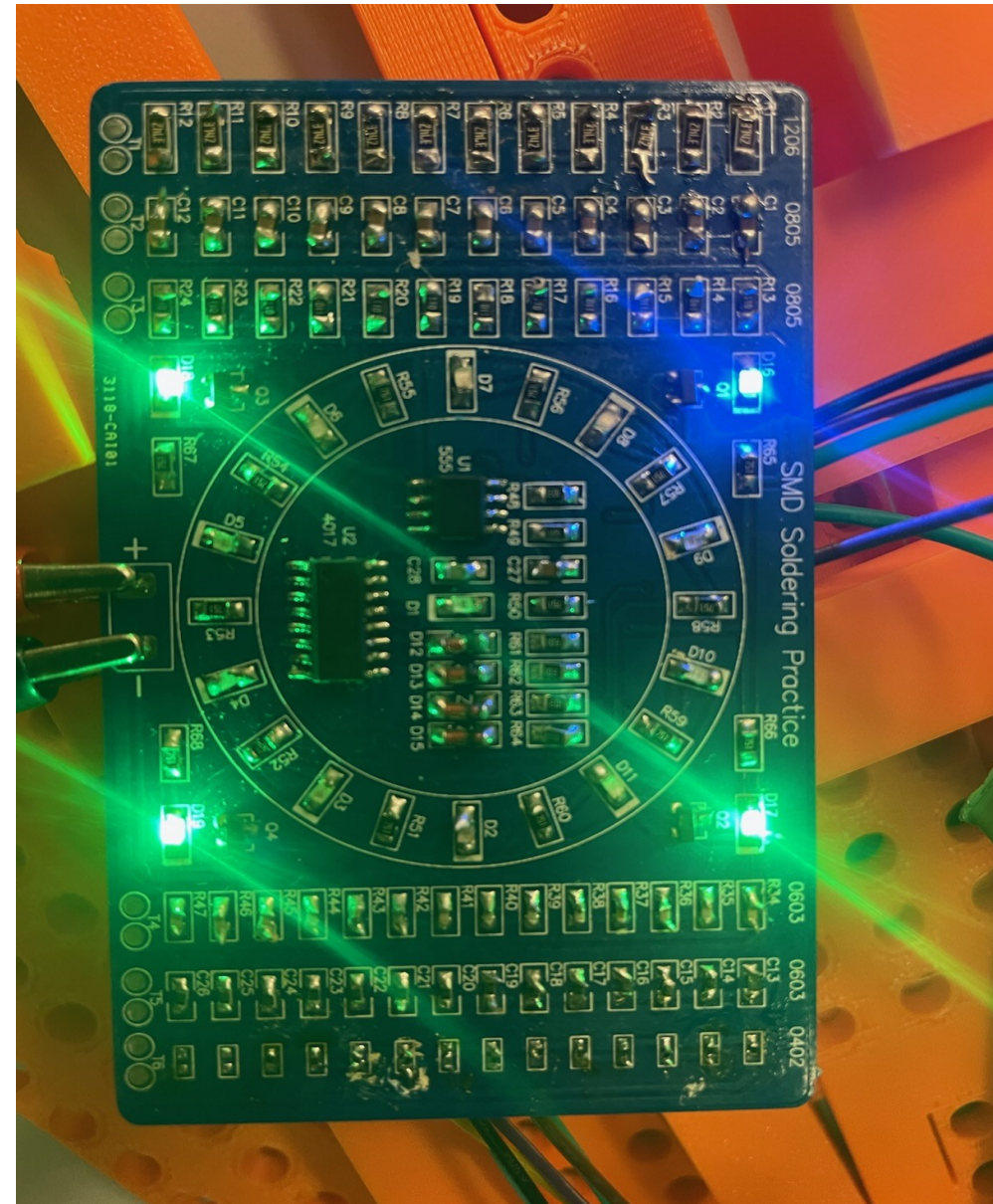
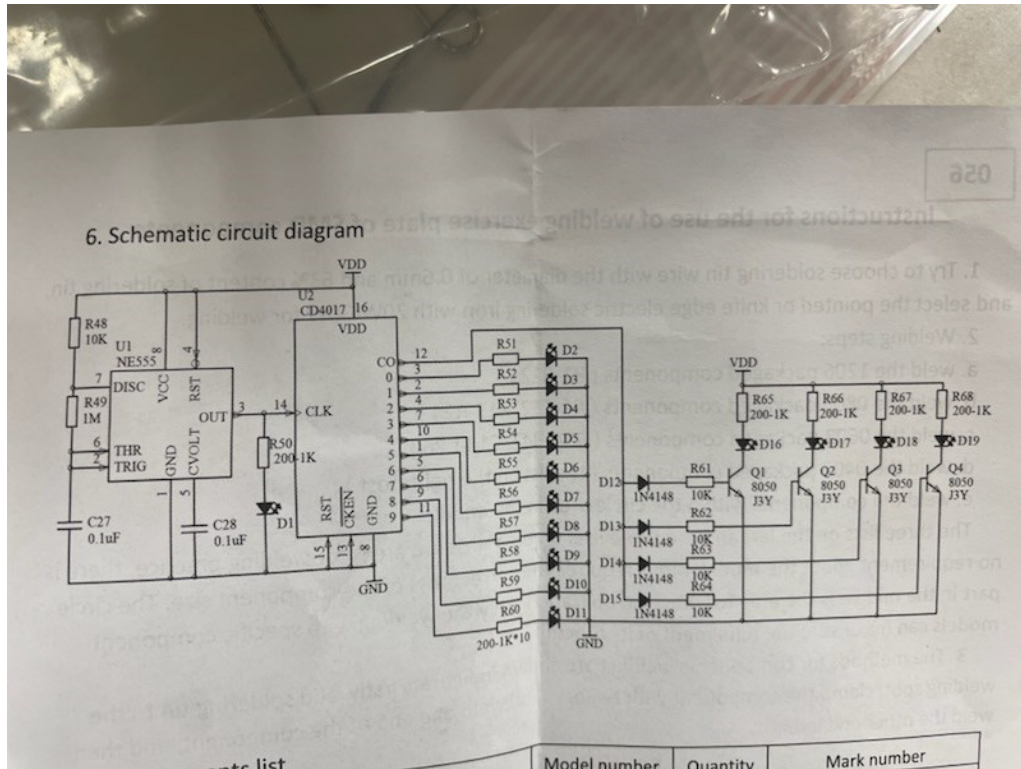


SD405 SMD Soldering Practice Board

- Kit arrives with Schematic, Components and PCB; when completed will look like the image shown. The LED ring will also light up in a circular pattern.

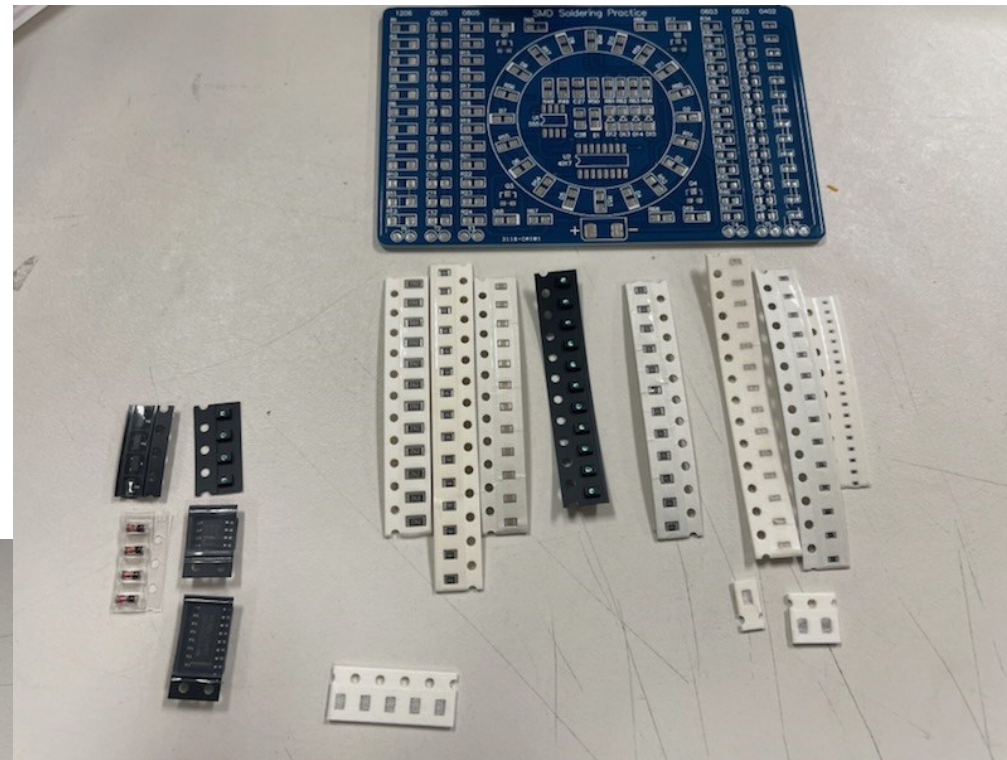




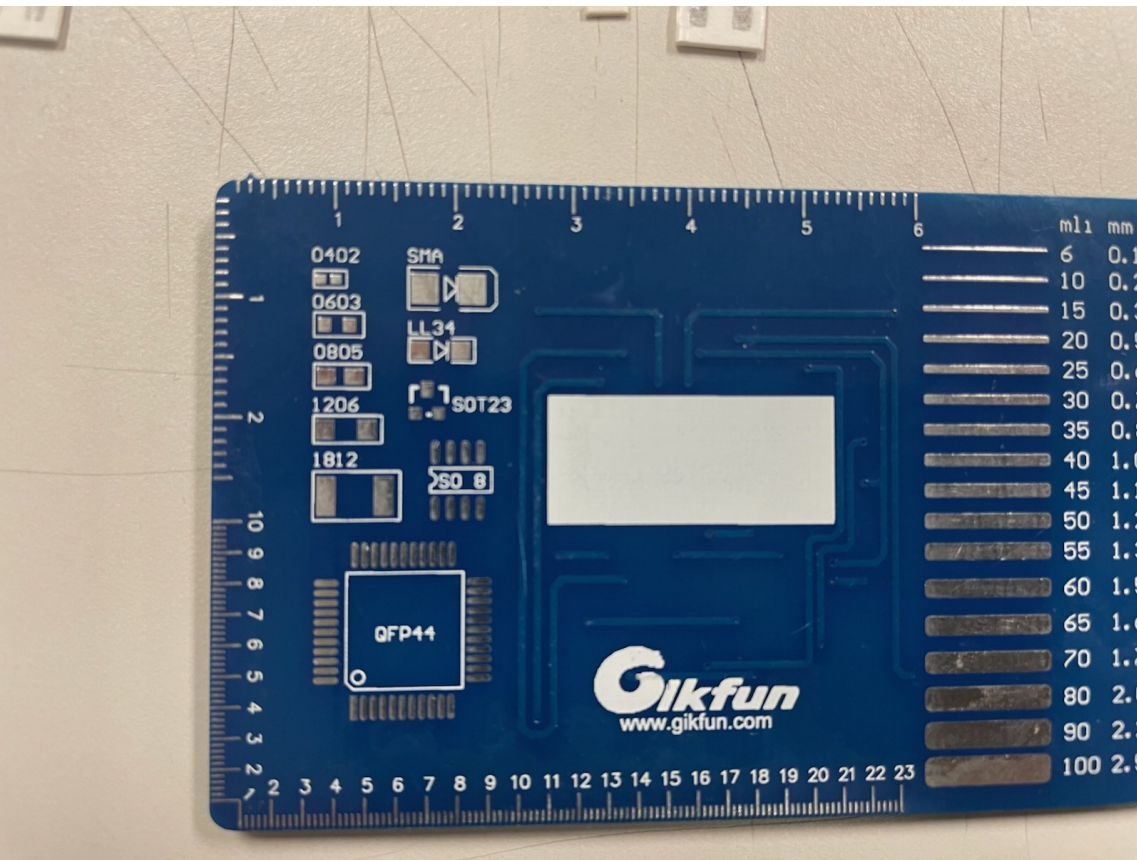
- SMD Soldering Practice Kit comes with a Schematic Circuit Diagram
- Components List, Some are very small (care required)
All components will be used, spare parts are available

7. Components list

Serial number	Packaging	Item Name	Model number	Quantity	Mark number
1	1206	Resistor	Random	12	R1-R12
2	0805	Capacitor	Random	12	C1-C12
3	0805	Resistor	Random	12	R13-R24
4	0603	Resistor	Random	14	R34-R47
5	0603	Capacitor	Random	14	C13-C26
6	0402	Capacitor or Resistor	Random	14	the list on the rightmost
7	0805	Resistor	200 Ω -1k Ω	15	R51-R60、R50、R65-R68
8	0805	LED		11	D2-D11、D1
9	0805	LED		4	D16-D19
10	SOT23	Triode	J3Y	4	Q1-Q4
11	LL34	Diode	4148	4	D12-D15
12	0805	Resistor	10K(103)	5	R48、R61-R64
13	0805	Resistor	1M(105)	1	R49
14	0805	Capacitor	0.1uF	2	C27、C28
15	SO08	IC	555	1	U1
16	SO16	IC	4017	1	U2



- Organize the components, with aid from back of PCB. (see next slide)



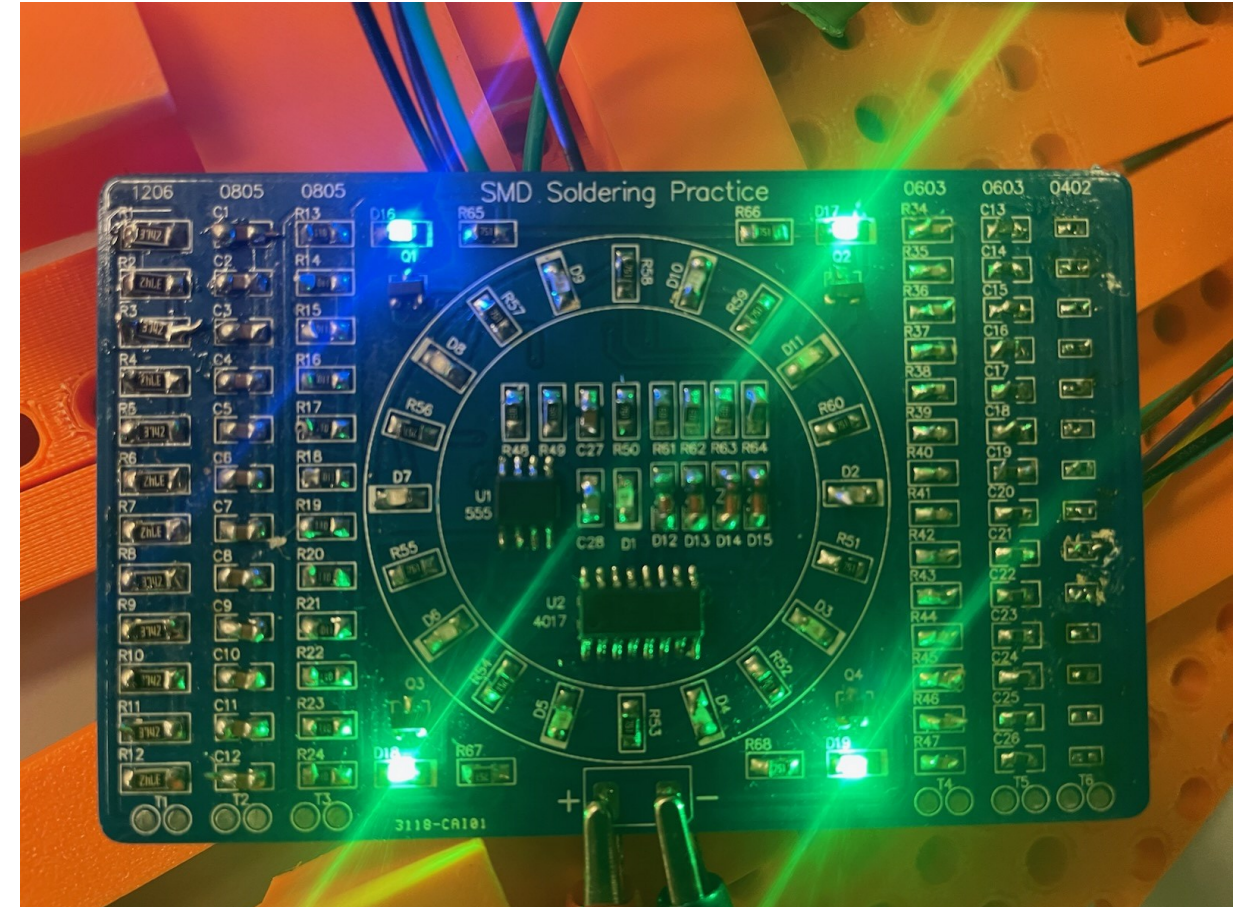
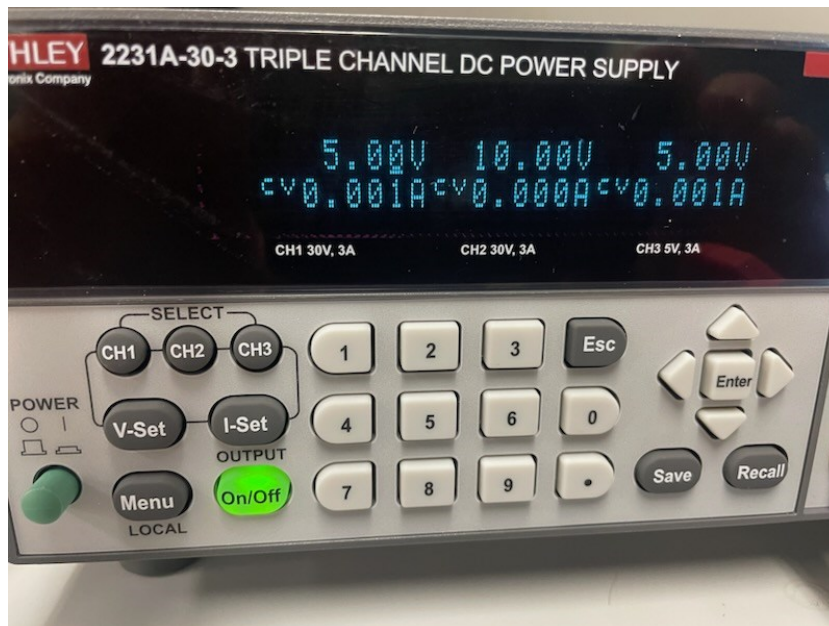
- Note the back of the PCB that shows Trace width's from 6 to 100 mills
- PCB Shows the footprints of all components for ease of identification.

7. Components list

Serial number	Packaging	Item Name	Model number	Quantity	Mark number
1	1206	Resistor	Random	12	R1-R12
2	0805	Capacitor	Random	12	C1-C12
3	0805	Resistor	Random	12	R13-R24
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5	0603	Capacitor	Random	14	C13-C26
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12	0805	Resistor	10K(103)	5	R48, R61-R64
13	0805	Resistor	1M(105)	1	R49
14	0805	Capacitor	0.1uF	2	C27, C28
15	SO08	IC	555	1	U1
16	SO16	IC	4017	1	U2

- Organize components by size and quantity using the components list and the PCB footprint identifier.

- Test your SMD Soldering Practice Board for functionality. The outside 1206,0805,0603 and 0402 SMD's are for practice soldering and serve no circuit purpose. The Lighted LED's and all components inside the square are required.
- Use any power supply, solder short wires to the +/- input.
- This circuit runs on +5Vdc and has no Voltage regulator.
- This Example Soldered PCB is not working correctly
- The LED ring is not lit up, possibly caused by a faulty U1, 555 Timer IC, Diodes may be in reverse biased, use the schematic and troubleshoot your circuit.
- Full credit will not be given for inoperable circuit or incomplete soldering.



Soldering Lab Worksheet

ECE 405 - Homework #5 - Due Week #11

Name:

Group#

Date

LED's

On your Soldering Board is a group of discrete LED's that create the circle, the manufactures part# is SML-LXPM0303SUGCTE and this device is using 20mA.

- What is the typical VF of this device _____
- What is the Intensity of the LED in milli candles? _____
- What is the Max current this device is rated for? _____
- What is the Typical Wavelength of this device? _____
- What is the cost to purchase the LED's for the circular ring only in 1 lot vs 10 lot pricing?
- # of LED's x 1 lot = \$ _____ # of LED's x 10 lot = \$ _____
- Cost differential of the total = \$ _____

IC Packages

Questions pertaining to QFP44 IC's on the main board, QFP44 Is the size of the IC, with a manufacturers part # of B505CA4EMCAXP

- What is the Digi-key part# _____?
- How many 8-bit digital I/O ports does this microcontroller have? _____
- How many leads (Pins) are on this package? _____
- What page of the datasheet will you find the Package outline dimensions/ pitch etc.
- Page # _____

Note. Turn in the SMD Soldering Kit and Soldering Lab Worksheet HWK#5 listed under Wk#6 in Bison Academy to Jeff Erickson ,room EE209 when completed.