



**Figure 13**

**CAUTION:** LED1 is a polarized device. Carefully review Figure 13 before soldering this component into the PCB. Accidentally reversing the anode and cathode terminals will prevent the LED from illuminating during board operation. Note the shorter (cathode) lead goes into the square pad.

27) After inserting LED1 into the board, secure the component in place with painter's tape and invert the PCB. Fasten the clip-on heat sink across the two leads of LED1 about 3/8" above the ground plane.

**CAUTION:** Even when using a heat sink, prolonged application of heat to the solder joint of a semiconductor component could damage or destroy the device.

28) Spread a small amount of flux at the two solder joints of LED1 and **quickly** solder LED1 into position. Remove the heat sink and trim the leads of LED1.

29) Referring to Table 3 of the Tables and Figures sheets, remove the dual output DC/DC converter U4 from the Temperature Sensor/Fan Controller kit package. Using Figure 14 as a guide, insert the power converter into the U4 position on the PCB.

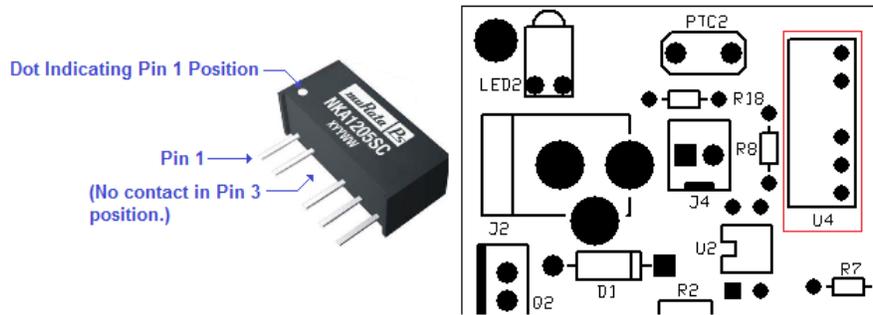


Figure 14

30) Secure the DC/DC converter in place with painter's tape and solder it into position. Also trim the component leads and perform a solder bridge check.

**NOTE:** Inductors L1 and L2 **are not** polarized and thus can be positioned in either orientation on the PCB. The first two numbers on the top of these components form the first two digits of the component's nominal value, based on the nanohenry scale. The third digit represents a power of ten by which to multiply this base value. Thus, with 223 on the top of inductors L1 and L2:

$$22 \times 10^{-9} \text{ H} \times 10^3 = 22 \times 10^{-6} \text{ H} = 22\mu\text{H}$$

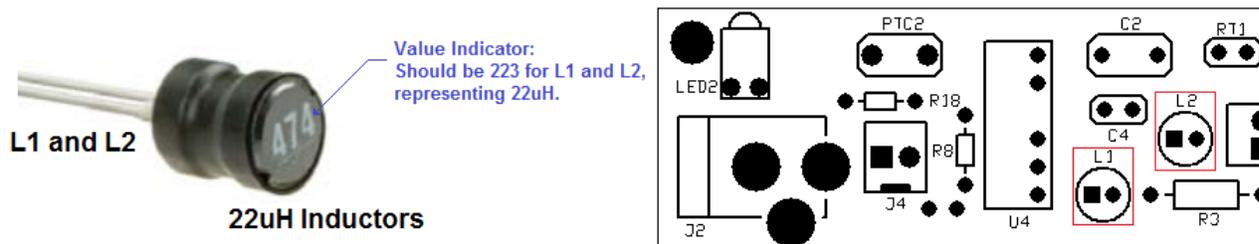


Figure 15

31) Referring to Table 3 of the Tables and Figures sheets, remove the two 22μH inductors from the Temperature Sensor/Fan Controller kit package. Using Figure 15 as a guide, insert the two inductors into the L1 and L2 position on the PCB.

32) Secure the two inductors in place with painter's tape and solder them into position. Also trim the component leads and perform a solder bridge check.

**NOTE:** Capacitors C1, C3 and C4 **are not** polarized. These multilayer ceramic capacitors (**MLCCs**) can be positioned in either orientation on the PCB. The first two numbers on the sides of these components form the first two digits of the component's nominal value, based on the picofarad scale. The third digit represents a power of ten by which to multiply this base value. Thus, with 225 on the side of C1:

$$22 \times 10^{-12} \text{ F} \times 10^5 = 22 \times 10^{-7} \text{ F} = 2.2\mu\text{F}$$

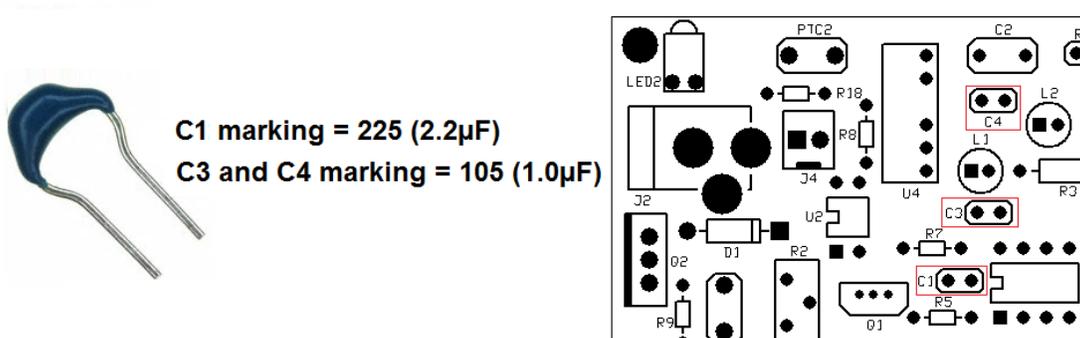
With 105 on the sides of C3 and C4:

$$10 \times 10^{-12} \text{ C} \times 10^5 = 10 \times 10^{-7} \text{ F} = 1.0\mu\text{F}$$

**NOTE:** The numbers on the sides of these three capacitors are **very** difficult to read. Read these components values under the lens of the helping hands, with a strong light source nearby.

33) Referring to Table 3 of the Tables and Figures sheets, remove capacitors C1, C3, and C4 from the Temperature Sensor/Fan Controller kit package. Using Figure 16 as a guide, insert these capacitors into their positions on the PCB.

**CAUTION:** Be careful in selecting these MLCCs. Thermistor RT1 is also blue and looks **very** similar to a capacitor! Compare the images of C1, C3, and C4 to that of RT1 to ensure the correct components are being selected. (Also refer to Figure 1 for clarity.)



**Figure 16**

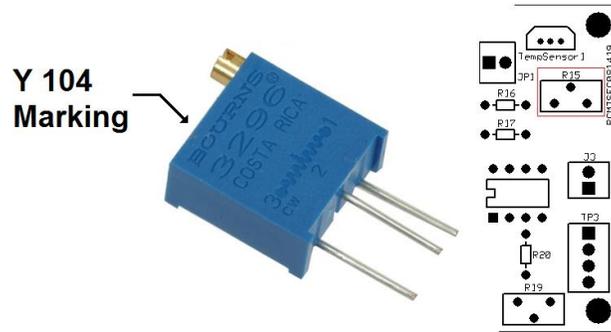
34) Secure capacitors C1, C3, and C4 in place with painter's tape and solder them into position. Also trim the component leads and perform a solder bridge check.

**NOTE:** C2, like C1, C3 and C4, is a non-polarized MLCC and can be positioned in either orientation on the PCB. The value of C2 can be verified using the method described in the previous notes.



38) Secure trimmer resistors R2, R10, and R19 in place with painter's tape and solder them into position. Also trim the component leads and perform a solder bridge check.

39) Referring to Table 3 of the Tables and Figures sheets, remove the blue 100KΩ single-turn trimmer resistor from the Temperature Sensor/Fan Controller kit package. Using Figure 19 as a guide, insert trimmer resistor R15 into position.



**Figure 19**

40) Secure trimmer resistor R15 in place with painter's tape and solder it into position. Also trim the component leads and perform a solder bridge check.