Components for Control Board

Dashed outlines mean component orientation is critical

3: R5, R16, R15
330 Ω Resistor
Orange-Orange-Brown

3: R2, R14, R19
1k Ohm Resistor
Brown-Black-Red

5: R4, R6, R9, R12, R13,
10k Ohm Resistor
Brown-Black-Orange

4: R3, R7, R11, R17
100k Ohm Resistor
Brown-Black-Yellow

1: R8
51k Ohm Resistor
Green-Brown-Orange

1: R10
33k Ohm Resistor
Orange-Orange-Orange

1: R18
220K Ohm Resistor
Red-Red-Yellow

20: D0-D3, D5-D20
1N4148 Diode
28-Pin Dip Socket
ATMEGA_48
Not the IC

1: R1
1 Ω Resistor
“U” shaped wire. Does not look like a resistor

1: S1
SPST Switch
Spacing allows only two ways to place. Either way is OK.

2: J5. 3-Pin Male Header
ISP

1: S2. Prgm_Select
SPDT Slide Switch

1: J7. 3-Pin Female Fuse Socket

2: LED_1, LED_2
Bi-Color
Longer lead is +, Shorter is flat side

1: LED_3
Red
Longer lead is +, Shorter is flat side

Q2, Q3: C5019
Match shape with silkscreen

Q4: MPSA65
Match shape with silkscreen
1: J6. 20-Pin Male Ribbon Cable Connector
- Single board

1: Male Connector Charger
- Red wire is +

1: U3. 5V Regulator
- Flat side against board

1: C3
- 200μF Capacitor
- Long lead is +

2: U1, U2. H Bridge L298
- Warning! Mount on Back Side of Board

1: Q1. TIP-127FP
- Place flat side to outer board. Warning! Mount on Back Side of Board

1: Female Connector Battery
- Red wire is +
- + on case matches board

1: Audio Transducer

2: J1, J4. 4-pin male connector
- Left Motor, Right
- Plastic lip matches + stripe on board

1: D4
- 1N5402 Diode
- Match diode stripe with stripe on board

DO NOT SOLDER

1: Fuse
- Place in socket when completed.
- Do Not Solder

2: µC
- ATMEGA
- Do Not Solder