**SMD Star Badge build Instructions for Reflow Oven, Sept 15, 2017**

**Safety:**

1. Wear safety glasses as solder splatters can cause permanent eye damage.
2. Cover any open cuts with band-aids and wash hands with soap afterwards to avoid lead exposure.
3. Tie long hair back and be careful of hot irons/ovens/etc.
4. Clean up afterwards. Thanks!

**Guide to Assembly (see photo on back)**

**Front of Board:**

1. Using the custom stencil and jig, apply solder paste to the board
2. Using tweezers carefully pick up and lightly place parts into their spots on the board.
3. Make sure parts are carefully aligned especially the chips.
4. Try not to move around the paste too much as it holds the parts in place.
5. Follow the VHS reflow oven instructions to bake your board.
6. Carefully remove board with tweezers.
7. Let cool.

**Back of Board:**

1. Hand-solder the battery clip.
2. Hot glue the badge pin.
3. Insert battery.

**Board Schematic:**instructions-2.tif

**Star Board designed by Tom Keddie**

badge-grayscale.tif

**Place Parts as they appear in the order below. Check all your parts first!**

|  |  |  |  |
| --- | --- | --- | --- |
| **Part** | **Value/Type** | **Specific Instructions** | **Packaging Details** |
| R1 | 10K ohms |  | red |
| R2 | 4.7k ohms |  | pink |
| R3 | 220 ohms |  | blue |
| C1, C2 | 10 uF |  | black |
| IC 1 | Bipolar timer, SO8 | Text reads toward top of board | small chip |
| IC 2 | Divider/counter, S016 | Text reads toward top of board | big chip |
| LEDs 1 - 8 | 805 | Side with tiny green dot. Faces up. Dotted end at star tip | Strip with green T’s. Extras incl. |
| **Bake board in oven and allow to cool before proceeding.** | | | |
| Battery holder (back) |  | hand-solder |  |
| Badge clip (back) |  | Hot glue after baking front |  |
| Battery 2032 (back) | 3 volt |  |  |

**Useful Links:**[**https://talk.vanhack.ca/t/vhs-smd-reflow-oven/5727**](https://talk.vanhack.ca/t/vhs-smd-reflow-oven/5727) **(oven instructions)**[**https://www.youtube.com/watch?v=\_5lksMvmqQc**](https://www.youtube.com/watch?v=_5lksMvmqQc) **(watch smds cooking)**