Teensy 3.5/3.6 Socket Kit

Contact Info

Name — Daniel Gilbert
Website — tall-dog.com
Email — contact@tall-dog.com

This kit allows you to construct a modular assembly in which the Teensy doesn't have to be permanently soldered onto its breakout board and instead can be removed and/or replaced with reasonable ease, much like a DIP socket.

Included are an assortment of specialized male and female pin headers as well as a few extra-long pogo pins. These components are designed to be used with any of the various **Teensy 3.5/3.6 Breakout** kits (available separately). Using this kit will slightly increase the overall height of the finished assembly, which also provides the necessary clearance to install a USB-A jack on the Standard edition breakout without blocking the Teensy's onboard Micro USB jack.

Included Parts (visual part identification sheet attached)

	Count	Part Type	Pos.	Tech.	Rows	Pins	Mfr.	Part Number/Desc.
A	2	Female Header	24	TH	1	24	Samtec	SLW-124-01-F-S
B	3	Female Header	5	TH	1	5	Samtec	SLW-105-01-F-S
C	1	Female Header	10	TH	2	5	Samtec	SLW-105-01-F-D
D	1	Female Header	8	TH	2	4	Samtec	SLW-104-01-F-D
E	1	Female Header	6	TH	2	3	Samtec	SLW-103-01-F-D
F	2	Male Header	24	TH	1	24	Samtec	MTSW-124-07-F-S-170
G	3	Male Header	5	TH	1	5	Samtec	MTSW-105-07-F-S-170
H	3	Male Header	5	TH	1	5	Samtec	MTSW-105-22-G-S-200
I	1	Male Header	10	SMD	2	5	Samtec	TSM-105-04-F-DV
J	1	Male Header	8	SMD	2	4	Samtec	TSM-104-04-F-DV
K	1	Male Header	6	SMD	2	3	Samtec	TSM-103-04-F-DV
L	4	Pogo Pin	1	TH	1	1	Mill-Max	0908-6-15-20-75-14-11-0

Assembly Instructions

1. You were most likely sent here from one of the breakout kit's assembly steps. Make sure to keep the parts from each kit separate since they use similar lettering. You can use the included part identification sheets to keep the components organized. These instructions will only ever refer to lettered parts that are included in *this* kit. When you're all finished, you can expect to have some extra unused components from both kits.

2. Apply some flux onto the four oblong outlined pads on the top side of the breakout board. Place and solder a gold pogo pin (part L) into each of these four holes. The elongated shape of each pad allows you to solder the pogo pins more easily from the top. The pogo pins must sit

flush and be aligned perpendicularly to the board. You can secure the board to the edge of your work surface with tape, allowing the pads to hang over the edge. While soldering each pin, drag the tip of your soldering iron along the pin's base to rotate it slightly, which can help to improve alignment. After soldering, hold the board up and check that the pins are reasonably perpendicular to the board. Check from both the front and the side.

3. Choose one of the following:

    a. Select one of the short 5-pin through-hole male headers (part G) and place it so that it interfaces with the RESET, PROGRAM, GND, 3.3V, and VBAT pins along the underside of the Teensy. The silver side of the header should go through the holes, leaving the gold side exposed. Tack the header in place and solder it.

    b. Use an extended-length 5-pin male header (part H) instead. You may want to use these extended-length headers to easily interface with jumper wires or female DuPont headers, especially if you're using the DIP-64 breakout (since it doesn't break out these internal positions). If you use the extended-length header, the black insulation block should be positioned on the top side of the Teensy instead of the bottom, and the longer pins should go through the holes.

4. Choose one of the following:

    a. Select another short 5-pin through-hole male header (part G) and remove the metal pin from the 2nd position using your diagonal cutters as pliers. Solder the modified header (now a 4-pin header with one blank space) onto the underside of the Teensy so that it occupies the A11, A10, AREF, and VUSB positions. The silver side of the header should go through the holes.

    b. Use another extended-length 5-pin male header (part H) instead of the short header, as described above in step 3b. You still need to remove a metal pin from the 2nd position. Remember to position the black insulation block on the top side of the Teensy and the longer pins through the holes. You'll cover up one surface-mount component with the blank space in the header, which is fine.

5. Place the Teensy so the bottom side is facing up. If you chose to use extended-length headers in steps 3 or 4, you can stick the Teensy upside-down into a breadboard. Apply flux onto the 2 rows of 5 rectangular pads (10 in total) marked 3.3V, 47, 48, 49, 50 on the first row and GND, 46, 45, 44, 43 on the second row. Place the 2×5 SMD male header (part I) onto the pads and solder it in place. You can secure the header using tape or a small drop of glue. The alignment doesn't have to be too perfect, just get it as close as you can.

6. Apply flux onto the 2 rows of 3 rectangular pads (6 in total) marked 51, 52, 53 on the first row and 42, 41, 40 on the second row. Place the 2×3 SMD male header (part K) onto the pads and solder it in place, as described above in step 5.

7. Apply flux onto the 2 rows of 4 rectangular pads (8 in total) marked 54, 55, 56, 57 on the first row and DD, DC, DE, G on the second row. Place the 2×4 SMD male header (part J) onto the pads and solder it in place, as described above in step 5.

8. Choose one of the following:

    a. Select another short 5-pin through-hole male header (part G) and place it so that it interfaces with the pins marked G, G, D+, D-, 5V on the underside of the Teensy. The silver side of the header should go through the holes. Tack and solder it in place.

    b. Use another extended-length 5-pin male header (part H) instead of the short header, as described above in step 3b. Remember to position the black insulation block on the top side of the Teensy and the longer pins through the holes.

9. Place the two 24-pin through-hole male headers (part F) along the two longer edges on the underside of the Teensy, with their silver sides going through the holes. Tack and solder them. This concludes the Teensy assembly. Check to make sure all the headers are aligned correctly, and that all the gold pins extend the same distance away from the board.

10. Remove one pin from the 2nd position of one of the 5-pin female headers (part B) by pushing the solder tail up towards the insulation block. The metal insert should pop out very easily.

11. Place all of the female headers (parts A, B, C, D, and E) onto the corresponding male headers on the Teensy. The female headers should fully mate with the surface-mount pins, but they should bottom-out against the through-hole pins and leave a small gap. When fully installed, all the female headers should sit at the same height.

12. Mate the Teensy and the breakout board together. They should fit without much trouble, but note that the single-row female headers may have some side-to-side movement. Once all the pins are through, the female headers should all sit flush against the breakout board.

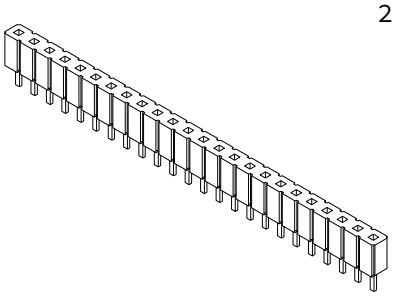
13. Tack the four corner pins to provide some stability. The pogo pin springs may provide some minor resistance, so you'll have to apply a small amount of pressure to keep the boards parallel while tacking them together. Check for proper alignment, then continue to solder all of the exposed female header pins.

14. Don't try to pull out the Teensy with your bare hands, because you'll probably damage the pins. Use a thin plastic or rubber-coated tool to pry the Teensy out of its socket by applying alternating leverage underneath the two short sides. Be careful to not damage the pogo pins with your prying tool. Once loosened on both sides, the Teensy should pop out easily.

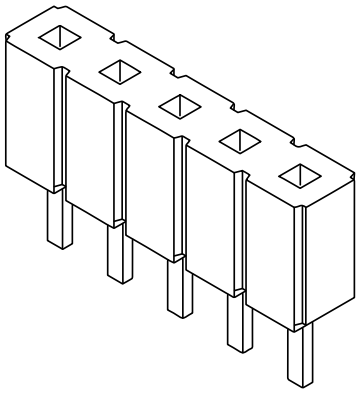
*You're finished with the **Socket Kit** portion of the assembly!*

Please return to the original breakout kit assembly instructions.

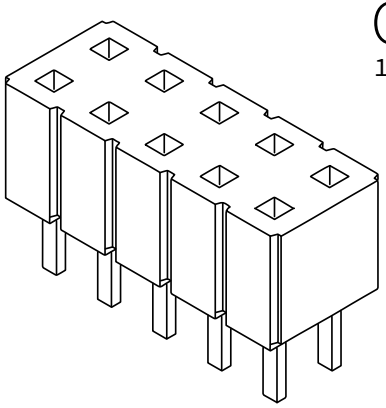
A
2×



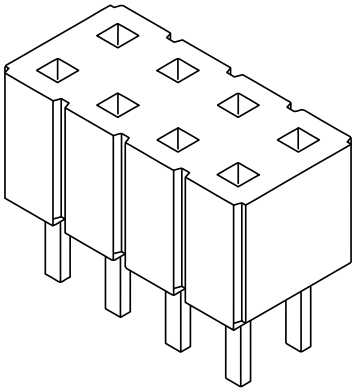
B
3×



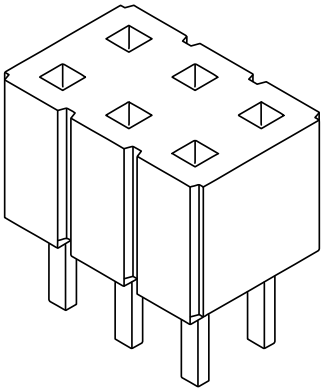
C
1×



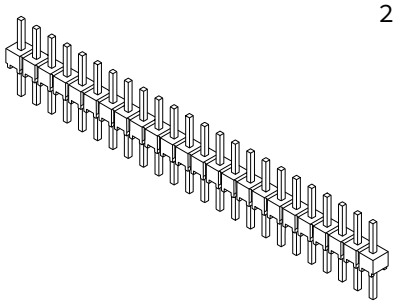
D
1×



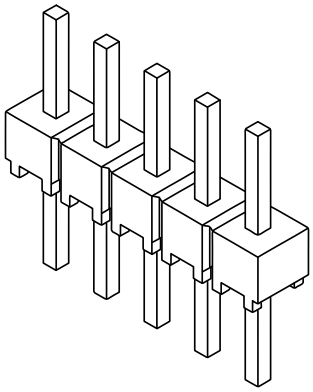
E
1×



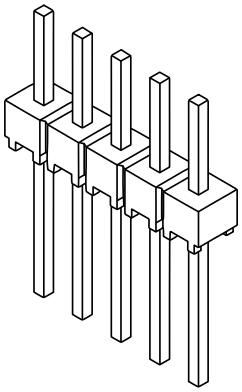
F
2×



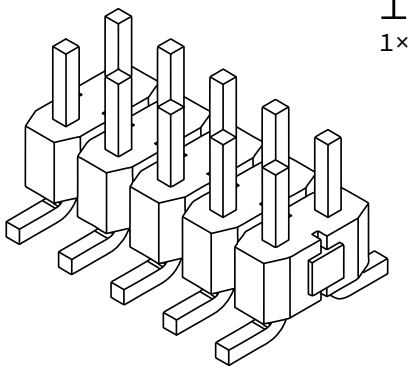
G
3×



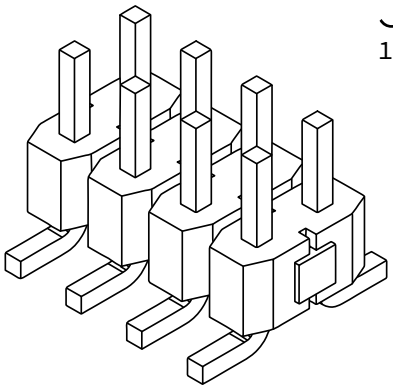
H
3×



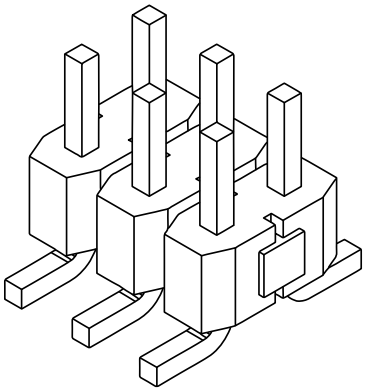
I
1×



J
1×



K
1×



L
4×