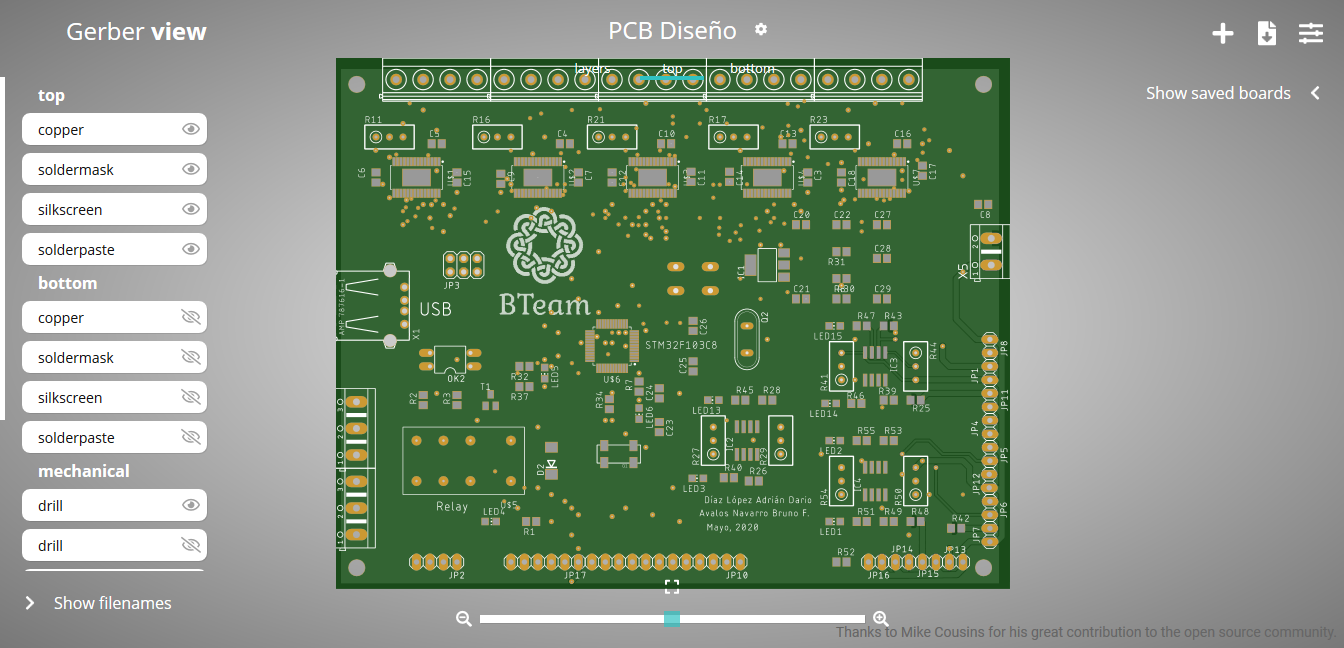
Descripción de la tarjeta

Funcionamiento del diseño de la PCB

|  |  |
| --- | --- |
| Díaz López, Adrián Darío. (213528039) | Avalos Navarro, Bruno Fernando. |
| Diseño de tarjetas de evaluación | Diseño de tarjetas de evaluación |
| Centro Universitario de Ciencias Exactas e Ingenierías | Centro Universitario de Ciencias Exactas e Ingenierías |
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*Abstract*— Pasos para crear una librería mediante el software Fusion 360 e importación de esta al Software Eagle. Se muestra como crear el Symbol, 3D model y de manera automática el Footprint.

VISUALIZACION ARCHIVOS GERBER (ONLINE)



|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Part | Value | Device | Package | Description | MF MPN | OC\_FARNELL | OC\_NEWARD | POPULARITY | SPICEMODEL | SPICEPREFIX | SPICEPREFIXL |
| C1 | 100nF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C2 | 100nF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C3 | 0.47µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C4 | 10nF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C5 | 10nF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C6 | 0.1µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C7 | 0.1µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C8 | 100µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C9 | 0.47µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C10 | 10nF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C11 | 0.1µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C12 | 0.47µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C13 | 10nF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C14 | 0.1µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C15 | 0.47µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C16 | 10nF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C17 | 0.1µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C18 | 0.47µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C19 | 100nF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C20 | 10µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C21 | 10µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C22 | 10µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C23 | 0.1µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C24 | 0.1µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C25 | 0.1µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C26 | 0.1µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C27 | 100µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C28 | 100µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C29 | 100µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| C30 | 1µF | C-EUC0805 | C0805 | CAPACITOR, European symbol |  |  |  | 88 |  | C |  |
| D2 |  | DIODE-DO214AA | DO214AA | DIODE |  |  |  | 8 |  |  |  |
| IC1 | REG1117 | REG1117 | SOT223 | 800mA and 1A Low Dropout (LDO) Positive Regulator | REG1117 | 1097566 | 14P6981 | 49 |  |  |  |
| IC2 | LM358D | LM358D | SO08 | OP AMP also LM158; LM258; LM2904 |  |  |  | 12 |  |  |  |
| IC3 | LM358D | LM358D | SO08 | OP AMP also LM158; LM258; LM2904 |  |  |  | 12 |  |  |  |
| IC4 | LM358D | LM358D | SO08 | OP AMP also LM158; LM258; LM2904 |  |  |  | 12 |  |  |  |
| JMP1 | 0R-JUMPA | 0R-JUMPA | A0R-JMP | SMD 0R 0805 Jumper |  |  |  | 3 |  |  |  |
| JMP2 | 0R-JUMPA | 0R-JUMPA | A0R-JMP | SMD 0R 0805 Jumper |  |  |  | 3 |  |  |  |
| JMP3 | 0R-JUMPA | 0R-JUMPA | A0R-JMP | SMD 0R 0805 Jumper |  |  |  | 3 |  |  |  |
| JMP5 | 0R-JUMPA | 0R-JUMPA | A0R-JMP | SMD 0R 0805 Jumper |  |  |  | 3 |  |  |  |
| JMP6 | 0R-JUMPA | 0R-JUMPA | A0R-JMP | SMD 0R 0805 Jumper |  |  |  | 3 |  |  |  |
| JP1 |  | PINHD-1X2 | 1X02 | PIN HEADER |  |  |  | 98 |  |  |  |
| JP2 | STLINK | PINHD-1X4 | 1X04 | PIN HEADER |  |  |  | 91 |  |  |  |
| JP3 | BOOT\_SELECTION | PINHD-2X3 | 2X03 | PIN HEADER |  |  |  | 62 |  |  |  |
| JP4 |  | PINHD-1X2 | 1X02 | PIN HEADER |  |  |  | 98 |  |  |  |
| JP5 |  | PINHD-1X2 | 1X02 | PIN HEADER |  |  |  | 98 |  |  |  |
| JP6 |  | PINHD-1X2 | 1X02 | PIN HEADER |  |  |  | 98 |  |  |  |
| JP7 |  | PINHD-1X2 | 1X02 | PIN HEADER |  |  |  | 98 |  |  |  |
| JP8 |  | PINHD-1X2 | 1X02 | PIN HEADER |  |  |  | 98 |  |  |  |
| JP10 | PINOUT | PINHD-1X12 | 1X12 | PIN HEADER |  |  |  | 28 |  |  |  |
| JP11 |  | PINHD-1X2 | 1X02 | PIN HEADER |  |  |  | 98 |  |  |  |
| JP12 |  | PINHD-1X2 | 1X02 | PIN HEADER |  |  |  | 98 |  |  |  |
| JP13 |  | PINHD-1X2 | 1X02 | PIN HEADER |  |  |  | 98 |  |  |  |
| JP14 |  | PINHD-1X2 | 1X02 | PIN HEADER |  |  |  | 98 |  |  |  |
| JP15 |  | PINHD-1X2 | 1X02 | PIN HEADER |  |  |  | 98 |  |  |  |
| JP16 |  | PINHD-1X2 | 1X02 | PIN HEADER |  |  |  | 98 |  |  |  |
| JP17 | ENDSTOP\_&\_LASER | PINHD-1X6 | 1X06 | PIN HEADER |  |  |  | 79 |  |  |  |
| LED1 | RED | LEDCHIP-LED0805 | CHIP-LED0805 | LED |  |  |  | 68 |  |  |  |
| LED2 | RED | LEDCHIP-LED0805 | CHIP-LED0805 | LED |  |  |  | 68 |  |  |  |
| LED3 | GREEN | LEDCHIP-LED0805 | CHIP-LED0805 | LED |  |  |  | 68 |  |  |  |
| LED4 | ORANGE | LEDCHIP-LED0805 | CHIP-LED0805 | LED |  |  |  | 68 |  |  |  |
| LED5 | RED | LEDCHIP-LED0805 | CHIP-LED0805 | LED |  |  |  | 68 |  |  |  |
| LED6 | GREEN | LEDCHIP-LED0805 | CHIP-LED0805 | LED |  |  |  | 68 |  |  |  |
| LED13 | GREEN | LEDCHIP-LED0805 | CHIP-LED0805 | LED |  |  |  | 68 |  |  |  |
| LED14 | ORANGE | LEDCHIP-LED0805 | CHIP-LED0805 | LED |  |  |  | 68 |  |  |  |
| LED15 | ORANGE | LEDCHIP-LED0805 | CHIP-LED0805 | LED |  |  |  | 68 |  |  |  |
| OK2 | PC817 | PC817 | DIL04 | SHARP OPTO COUPLER | PC817X4J000F | 9707727 | 97K7059 | 20 |  |  |  |
| Q1 | 32,768K | KX-327-S | 8.2X3.8 | Tuning Fork Crystals (kHz) SMD: |  |  |  |  |  |  |  |
| Q2 | 8MHz | XTAL/S | QS | CRYSTAL |  |  |  | 59 |  |  |  |
| R1 | 470 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R2 | 2k2 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R3 | 10k | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R4 | 200 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R5 | 4k7 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R6 | 4k7 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R7 | 120 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R8 | 820 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R9 | 0.1 | R-EU\_R2512 | R2512 | RESISTOR, European symbol |  |  |  | 0 |  | R |  |
| R10 | 0.1 | R-EU\_R2512 | R2512 | RESISTOR, European symbol |  |  |  | 0 |  | R |  |
| R11 |  | R-TRIMM3296W | RTRIM3296W | Trimm resistor |  |  |  | 3 | X |  | POT |
| R12 | 0.1 | R-EU\_R2512 | R2512 | RESISTOR, European symbol |  |  |  | 0 |  | R |  |
| R13 | 0.1 | R-EU\_R2512 | R2512 | RESISTOR, European symbol |  |  |  | 0 |  | R |  |
| R14 | 0.1 | R-EU\_R2512 | R2512 | RESISTOR, European symbol |  |  |  | 0 |  | R |  |
| R15 | 0.1 | R-EU\_R2512 | R2512 | RESISTOR, European symbol |  |  |  | 0 |  | R |  |
| R16 |  | R-TRIMM3296W | RTRIM3296W | Trimm resistor |  |  |  | 3 | X |  | POT |
| R17 |  | R-TRIMM3296W | RTRIM3296W | Trimm resistor |  |  |  | 3 | X |  | POT |
| R18 | 0.1 | R-EU\_R2512 | R2512 | RESISTOR, European symbol |  |  |  | 0 |  | R |  |
| R19 | 0.1 | R-EU\_R2512 | R2512 | RESISTOR, European symbol |  |  |  | 0 |  | R |  |
| R20 | 0.1 | R-EU\_R2512 | R2512 | RESISTOR, European symbol |  |  |  | 0 |  | R |  |
| R21 |  | R-TRIMM3296W | RTRIM3296W | Trimm resistor |  |  |  | 3 | X |  | POT |
| R22 | 0.1 | R-EU\_R2512 | R2512 | RESISTOR, European symbol |  |  |  | 0 |  | R |  |
| R23 |  | R-TRIMM3296W | RTRIM3296W | Trimm resistor |  |  |  | 3 | X |  | POT |
| R24 | 4k7 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R25 | 470 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R26 | 10k | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R27 | 10k | R-TRIMM3296W | RTRIM3296W | Trimm resistor |  |  |  | 3 | X |  | POT |
| R28 | 10k | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R29 | 10k | R-TRIMM3296W | RTRIM3296W | Trimm resistor |  |  |  | 3 | X |  | POT |
| R30 | 100 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R31 | 200 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R32 | 120 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R33 | 100k | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R34 | 100k | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R35 | 10k | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R36 | 180 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R37 | 180 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R38 | 470 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R39 | 10k | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R40 | 330 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R41 | 10k | R-TRIMM3296W | RTRIM3296W | Trimm resistor |  |  |  | 3 | X |  | POT |
| R42 | 470 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R43 | 10k | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R44 | 10k | R-TRIMM3296W | RTRIM3296W | Trimm resistor |  |  |  | 3 | X |  | POT |
| R45 | 330 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R46 | 330 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R47 | 330 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R48 | 4k7 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R49 | 10k | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R50 | 10k | R-TRIMM3296W | RTRIM3296W | Trimm resistor |  |  |  | 3 | X |  | POT |
| R51 | 330 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R52 | 470 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R53 | 10k | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R54 | 10k | R-TRIMM3296W | RTRIM3296W | Trimm resistor |  |  |  | 3 | X |  | POT |
| R55 | 330 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| R56 | 4k7 | R-EU\_R0805 | R0805 | RESISTOR, European symbol |  |  |  | 86 |  | R |  |
| S1 | RESET\_BUTTON | 10-XX | B3F-10XX | OMRON SWITCH | B3F-1000 | 176432 | 36M3542 | 72 |  |  |  |
| T1 |  | #¿NOMBRE? | SOT23-BCE | PNP Transistror |  |  |  | 0 |  |  |  |
| U$1 | DRV8825 | DRV8825 | SOP65P660X135-29T310X518N |  |  |  |  |  |  |  |  |
| U$2 | DRV8825 | DRV8825 | SOP65P660X135-29T310X518N |  |  |  |  |  |  |  |  |
| U$3 | DRV8825 | DRV8825 | SOP65P660X135-29T310X518N |  |  |  |  |  |  |  |  |
| U$4 | DRV8825 | DRV8825 | SOP65P660X135-29T310X518N |  |  |  |  |  |  |  |  |
| U$5 | TDS-1202L | TDS-1202L | TDS\_1202L |  |  |  |  |  |  |  |  |
| U$6 | STM32F103C8\_LQFP48 | STM32F103C8\_LQFP48 | QFP50P900X900X160-48N |  |  |  |  |  |  |  |  |
| U$7 | DRV8825 | DRV8825 | SOP65P660X135-29T310X518N |  |  |  |  |  |  |  |  |
| X1 | USB\_VCP | USB-787616 | USB | AMP connector |  |  |  | 1 |  |  |  |
| X2 |  | AK500/3 | AK500/3 | CONNECTOR |  | unknown | unknown | 3 |  |  |  |
| X3 |  | AK500/3 | AK500/3 | CONNECTOR |  | unknown | unknown | 3 |  |  |  |
| X4 | MKDSN1,5/4-5,08 | MKDSN1,5/4-5,08 | MKDSN1,5/4-5,08 | MKDSN 1,5/ 4-5,08 Printklemme |  |  |  | 5 |  |  |  |
| X5 |  | AK500/2 | AK500/2 | CONNECTOR |  | unknown | unknown | 14 |  |  |  |
| X6 | MKDSN1,5/4-5,08 | MKDSN1,5/4-5,08 | MKDSN1,5/4-5,08 | MKDSN 1,5/ 4-5,08 Printklemme |  |  |  | 5 |  |  |  |
| X7 | MKDSN1,5/4-5,08 | MKDSN1,5/4-5,08 | MKDSN1,5/4-5,08 | MKDSN 1,5/ 4-5,08 Printklemme |  |  |  | 5 |  |  |  |
| X8 | MKDSN1,5/4-5,08 | MKDSN1,5/4-5,08 | MKDSN1,5/4-5,08 | MKDSN 1,5/ 4-5,08 Printklemme |  |  |  | 5 |  |  |  |
| X9 | MKDSN1,5/4-5,08 | MKDSN1,5/4-5,08 | MKDSN1,5/4-5,08 | MKDSN 1,5/ 4-5,08 Printklemme |  |  |  | 5 |  |  |  |

# Elección del componente

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1. "DRV8825 Stepper Motor Controller", Texas Intruments, 2020. [Online]. Available: https://www.ti.com/lit/ds/symlink/drv8825.pdf. [Accessed: 09- Apr- 2020]