

# Jogo com Arduino, Matriz de LEDs e Módulo Joystick

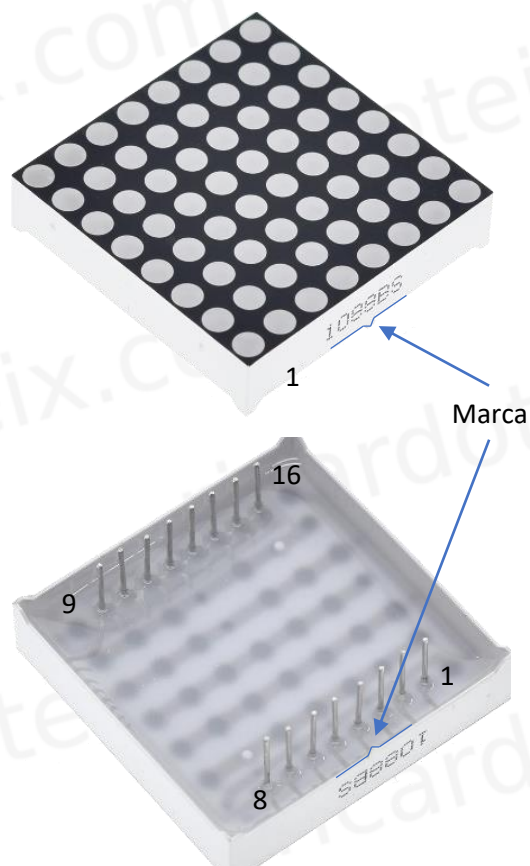
Professor Ricardo Teixeira

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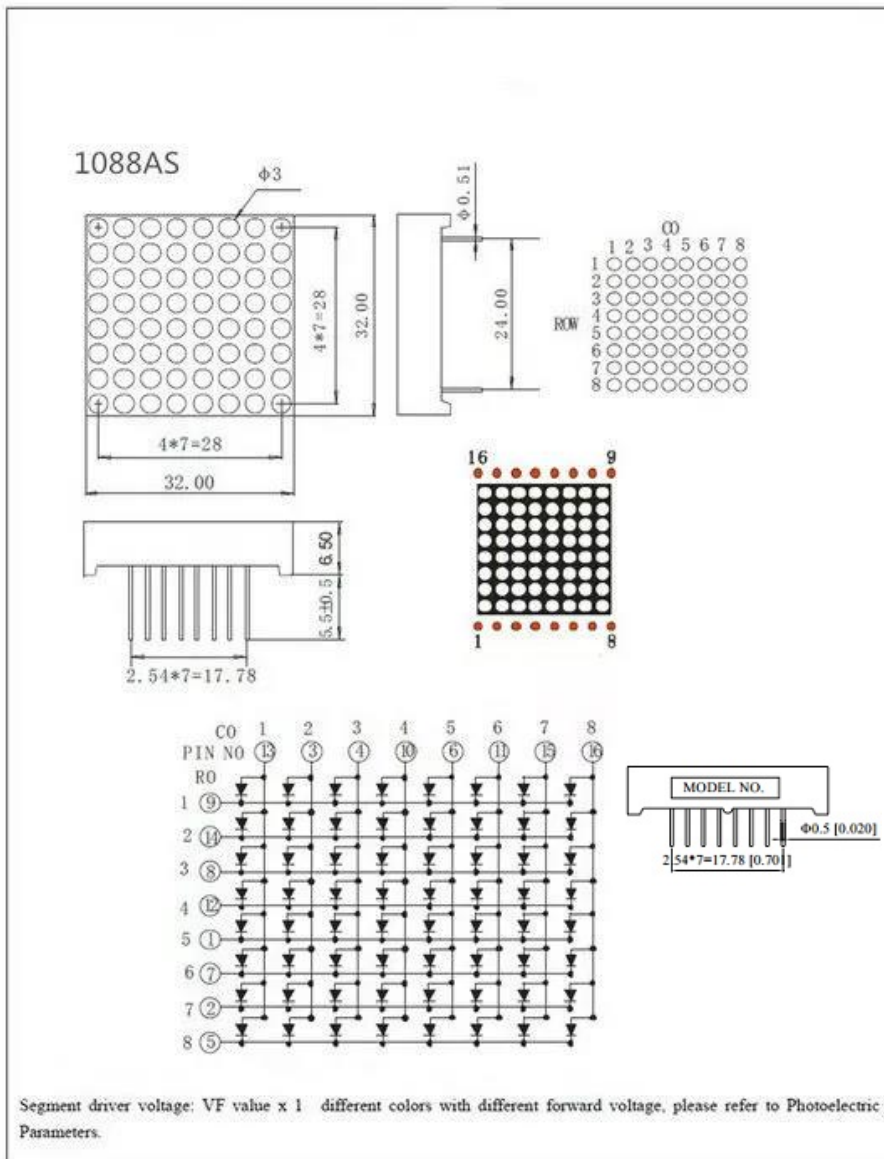
## Matriz de LEDs 1088AS

- Tensão direta: 2,1 à 2.5 V
- Corrente direta: 20 mA

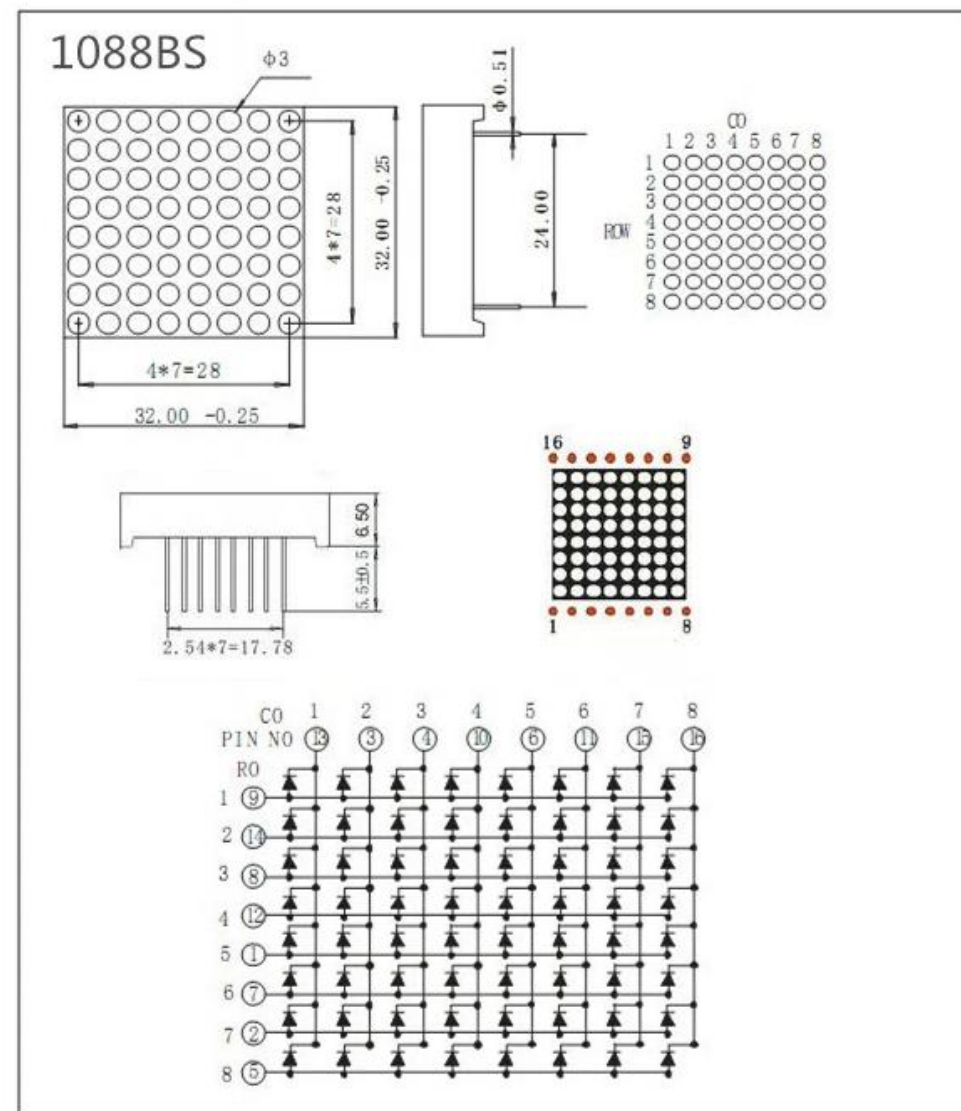
Fonte: [2].

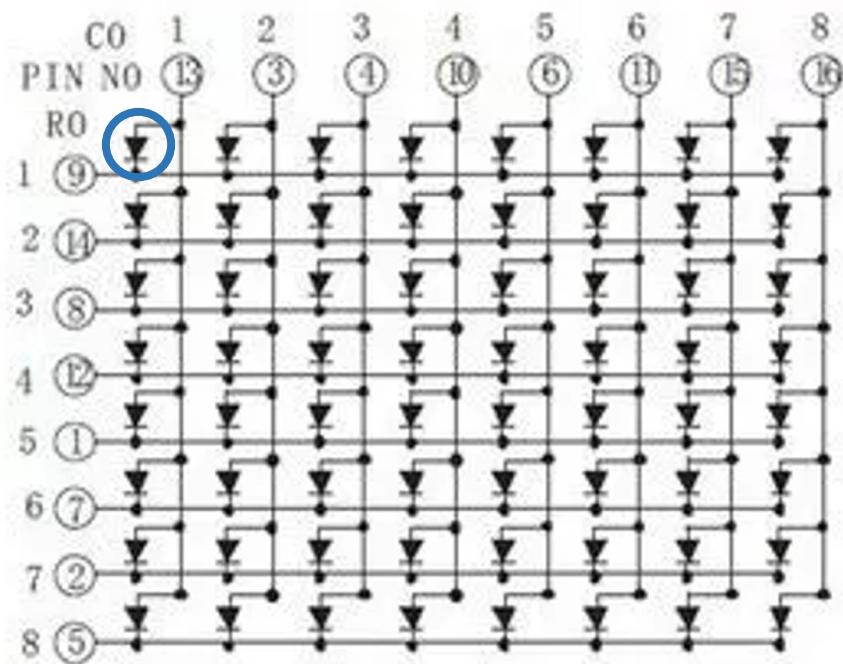


Fonte: adaptado de [3].

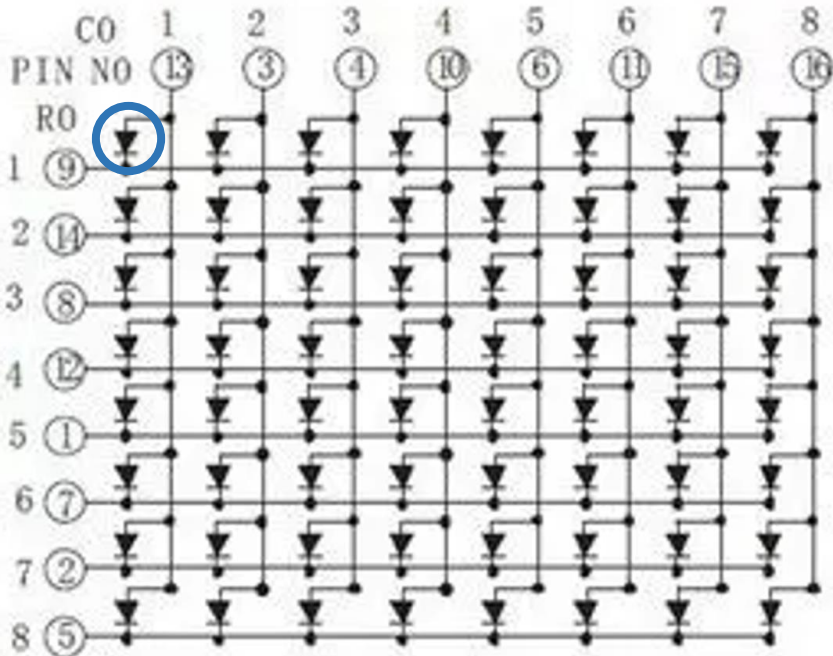


Fonte: adaptado de [1].





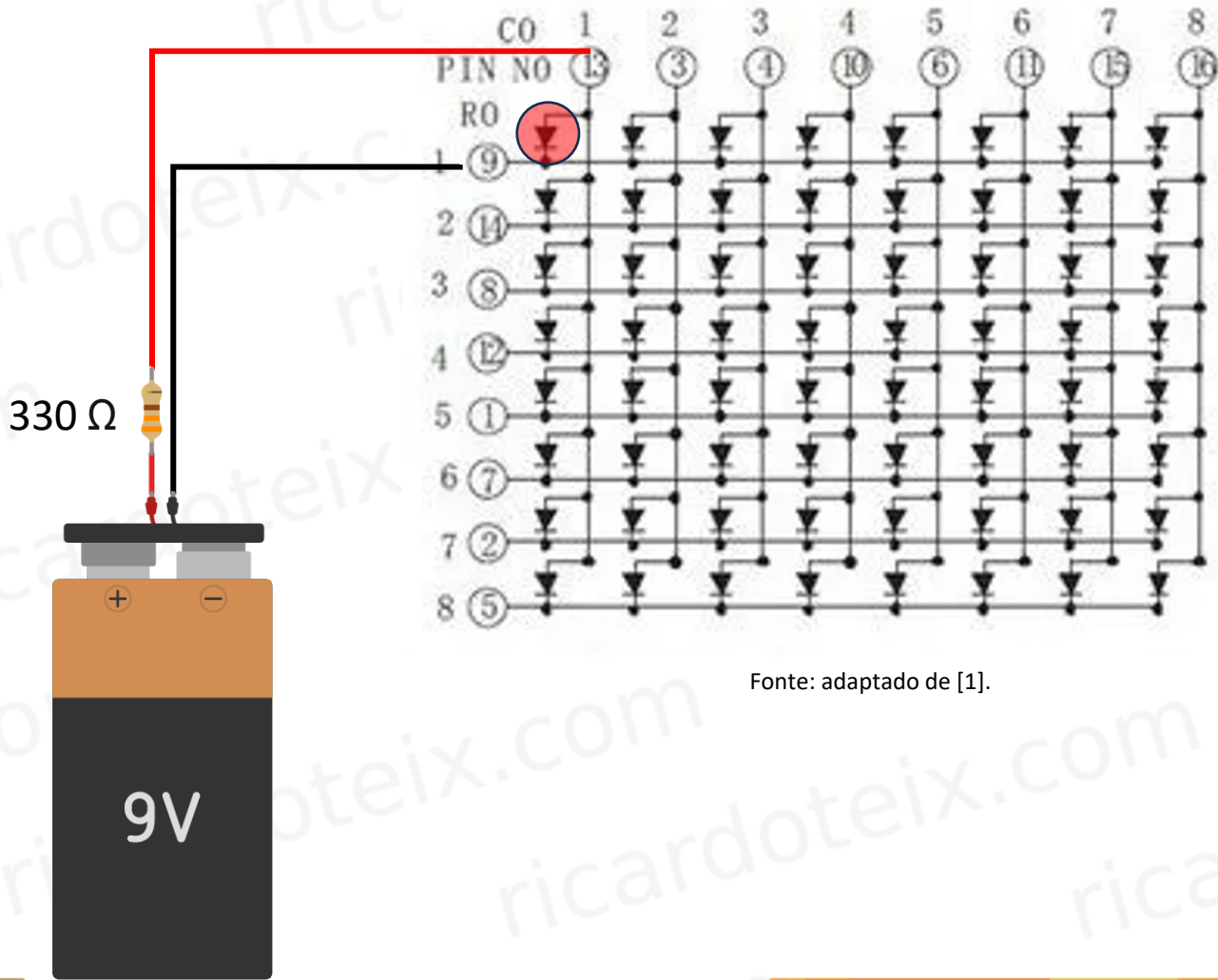
Fonte: adaptado de [1].



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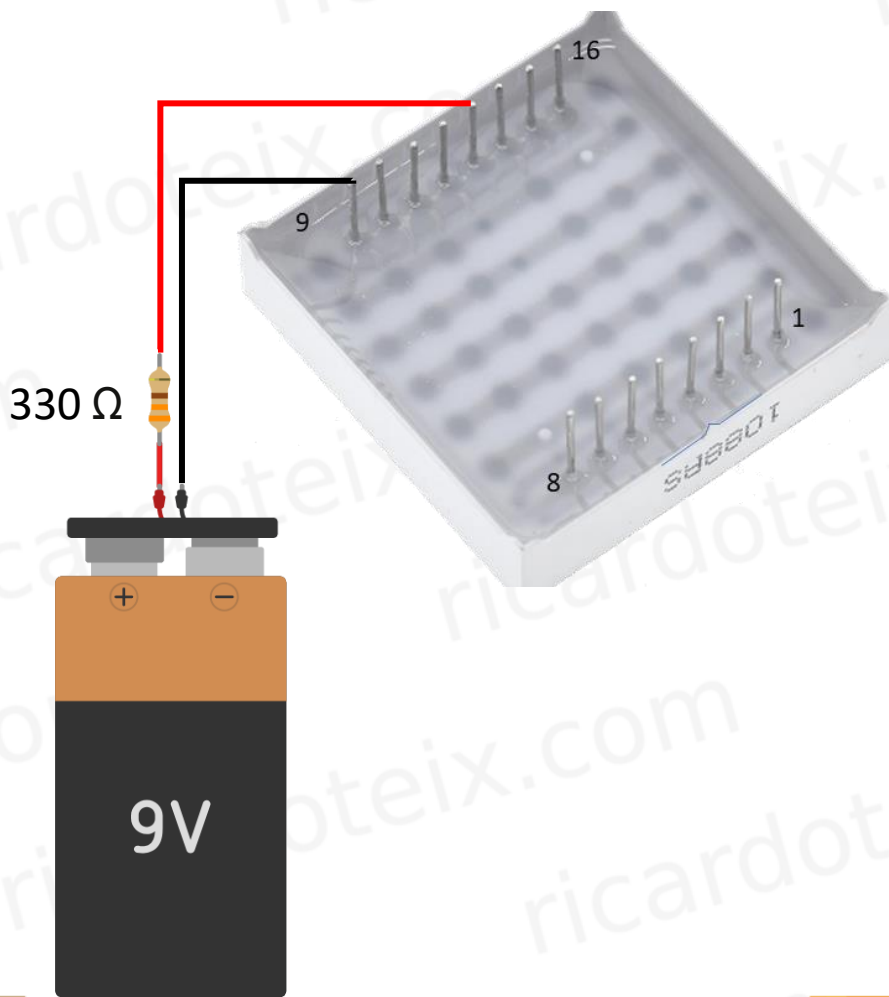






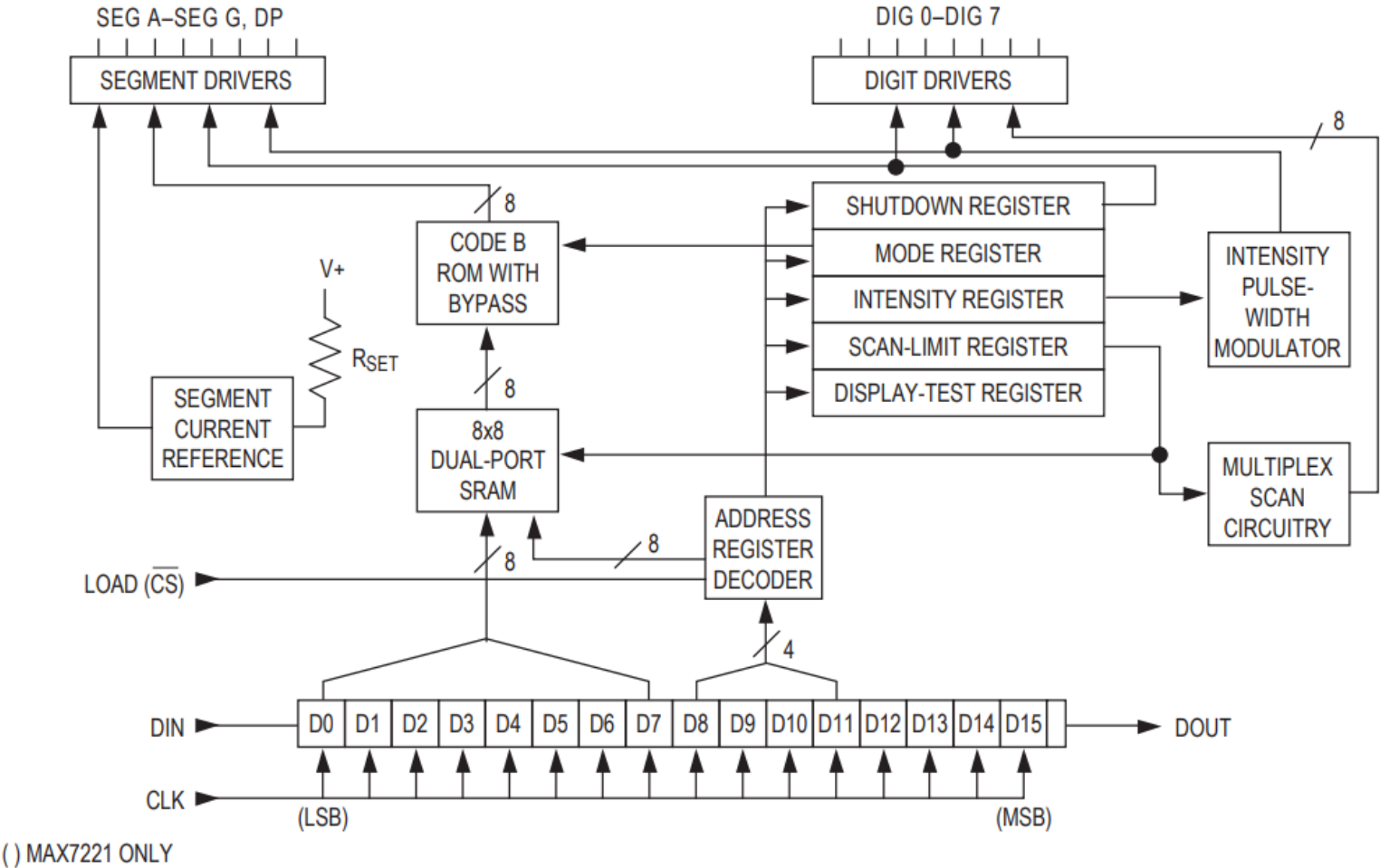
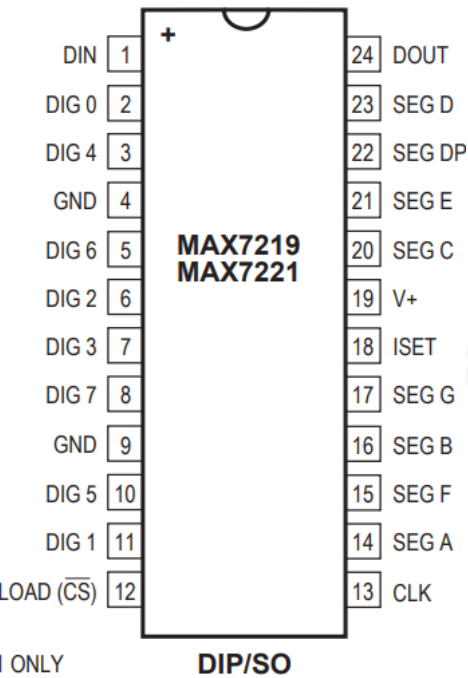
Fonte: adaptado de [1].





# Driver MAX7219

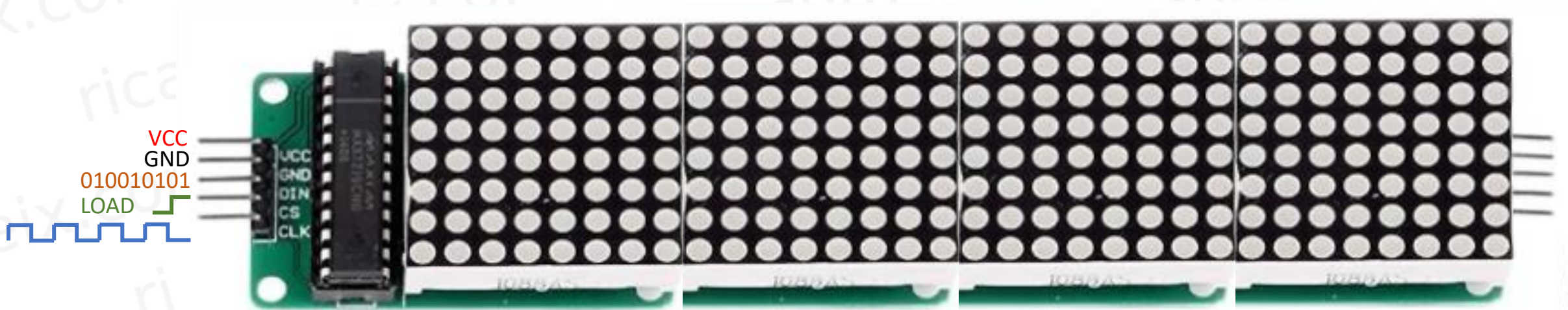
TOP VIEW



Fonte: adaptado de [4].

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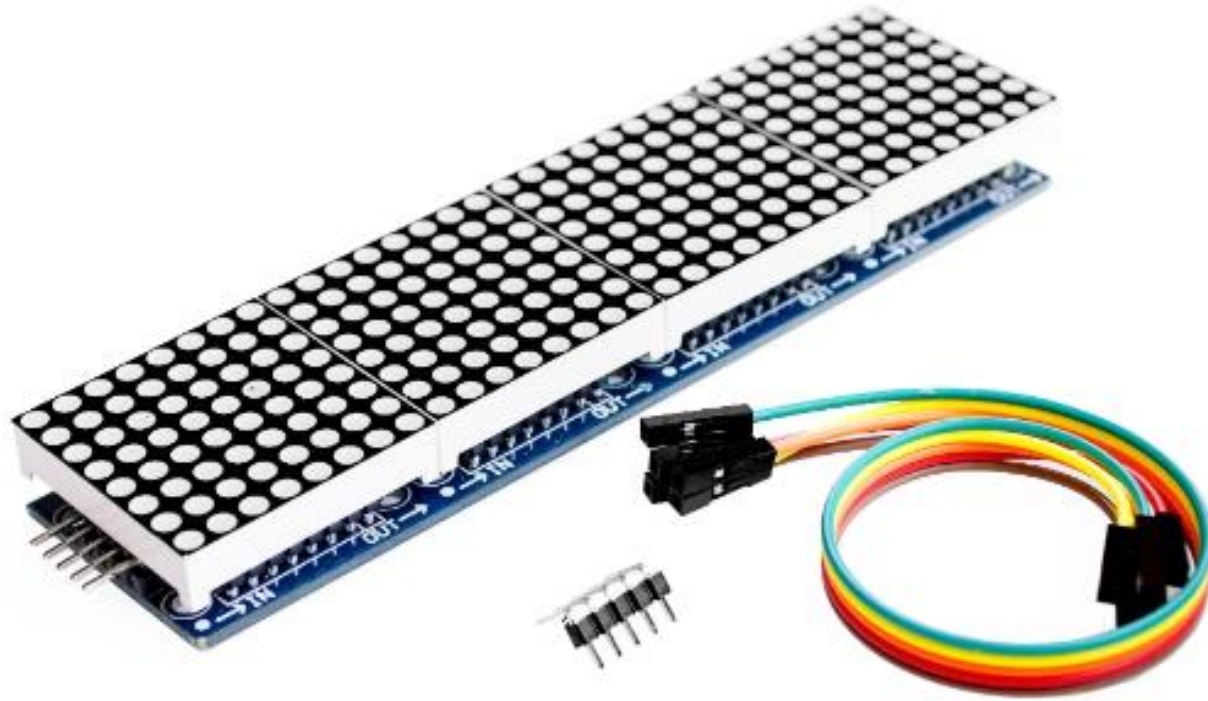
# Módulo Matriz de LEDs 1088AS com driver MAX7219



Fonte: adaptado de [6].



## Módulo 4 Matrizes de LEDs 1088AS com driver MAX7219



Fonte: adaptado de [5].

# Módulo Joystick Funduino e Arduino Uno



Fonte: adaptado de [8].



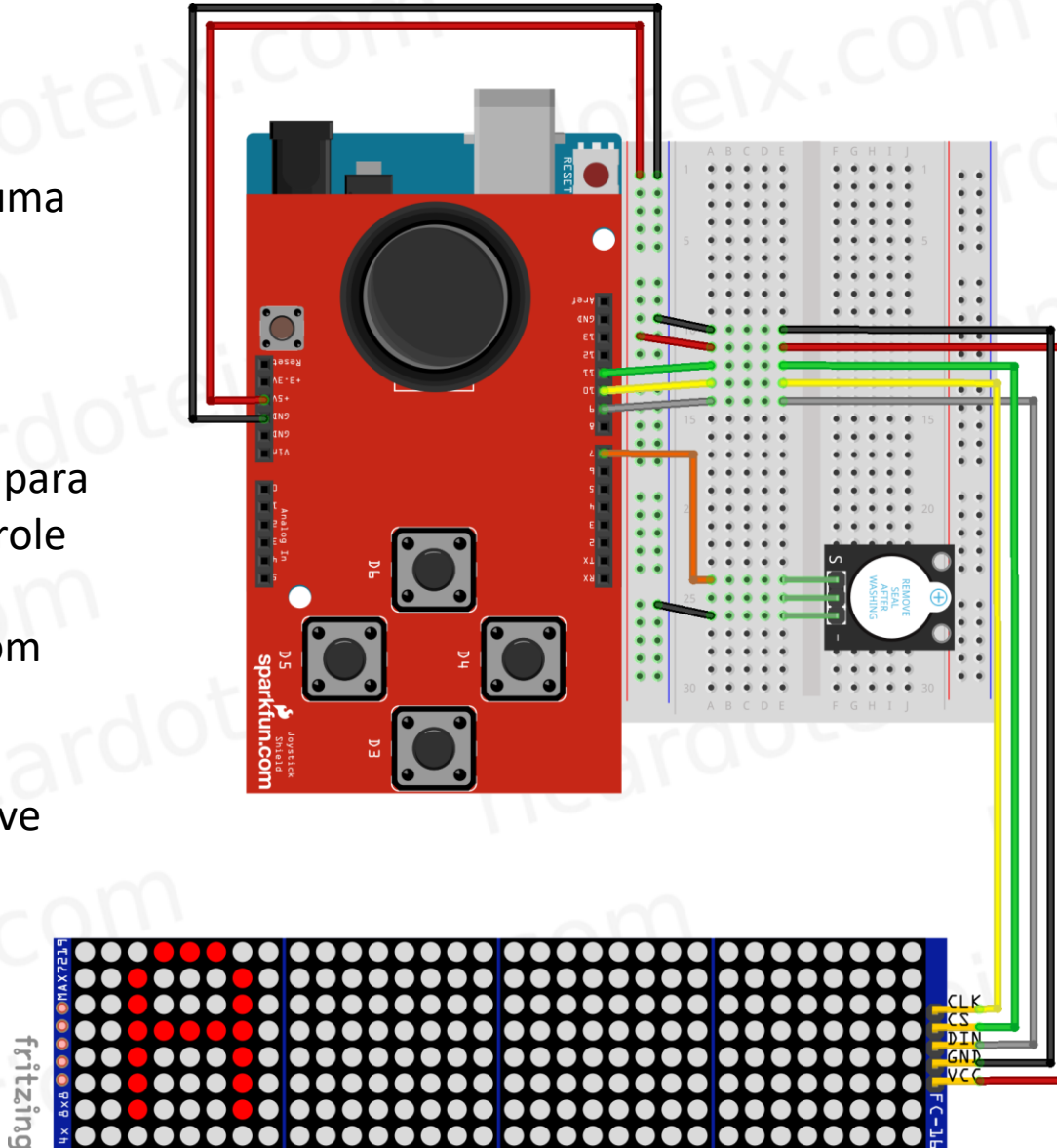
Fonte: adaptado de [7].

# Projeto

Criar um simples jogo capaz de controlar uma nave nas matrizes usando o joystick.

## Comportamentos possíveis:

- Nave com 4 LEDs fazendo movimentos para esquerda e direita de acordo com controle analógico.
- A nave pode atirar e verificar colisão com inimigos.
- O tiro pode destruir inimigos.
- Os inimigos se movem em direção à nave automaticamente.





## Referências

- [1] **GETTING STARTED WITH AN LED MATRIX TUTORIAL.** <https://www.circuitspecialists.com/blog/getting-started-with-an-led-matrix-tutorial/>
- [2] **LED 8x8 matrix 3mm 1088AS.** [https://cdn.velleman.eu/downloads/29/infosheets/vmp502\\_led8x8\\_1088as.pdf](https://cdn.velleman.eu/downloads/29/infosheets/vmp502_led8x8_1088as.pdf)
- [3] **Matrix de LEDs 8x8.** [https://s.click.aliexpress.com/e/\\_DdoknLH](https://s.click.aliexpress.com/e/_DdoknLH)
- [4] **MAX7219/MAX7221 Datasheet.** <https://www.analog.com/media/en/technical-documentation/data-sheets/MAX7219-MAX7221.pdf>
- [5] **Módulo 4 Matrizes de LEDs 8x8.** [https://s.click.aliexpress.com/e/\\_DneymIz](https://s.click.aliexpress.com/e/_DneymIz)
- [6] **Módulo Matriz de LEDs 8x8 Simples.** [https://s.click.aliexpress.com/e/\\_DkVrH2j](https://s.click.aliexpress.com/e/_DkVrH2j)
- [7] **Placa Arduino Uno.** [https://s.click.aliexpress.com/e/\\_DeKhsZj](https://s.click.aliexpress.com/e/_DeKhsZj)
- [8] **Shield Joystick Funduino.** [https://s.click.aliexpress.com/e/\\_DCSKd0f](https://s.click.aliexpress.com/e/_DCSKd0f)



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