ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

Enseignes et afficheurs à LED

Registres série-parallèle

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Pierre-Yves Rochat

Registres série-parallèle

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Registres série-parallèle

- Besoin de broches
- Registre série
- Registre série-parallèle
- Le circuit 74HC595
- Sorties à courant constant
- Programmation

Besoin de broches

- Beaucoup de LED...

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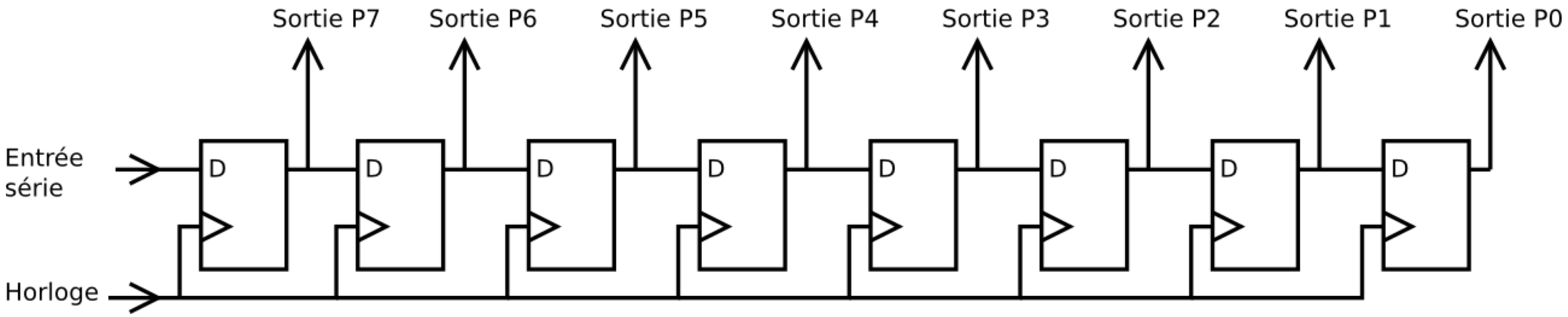
Registres série



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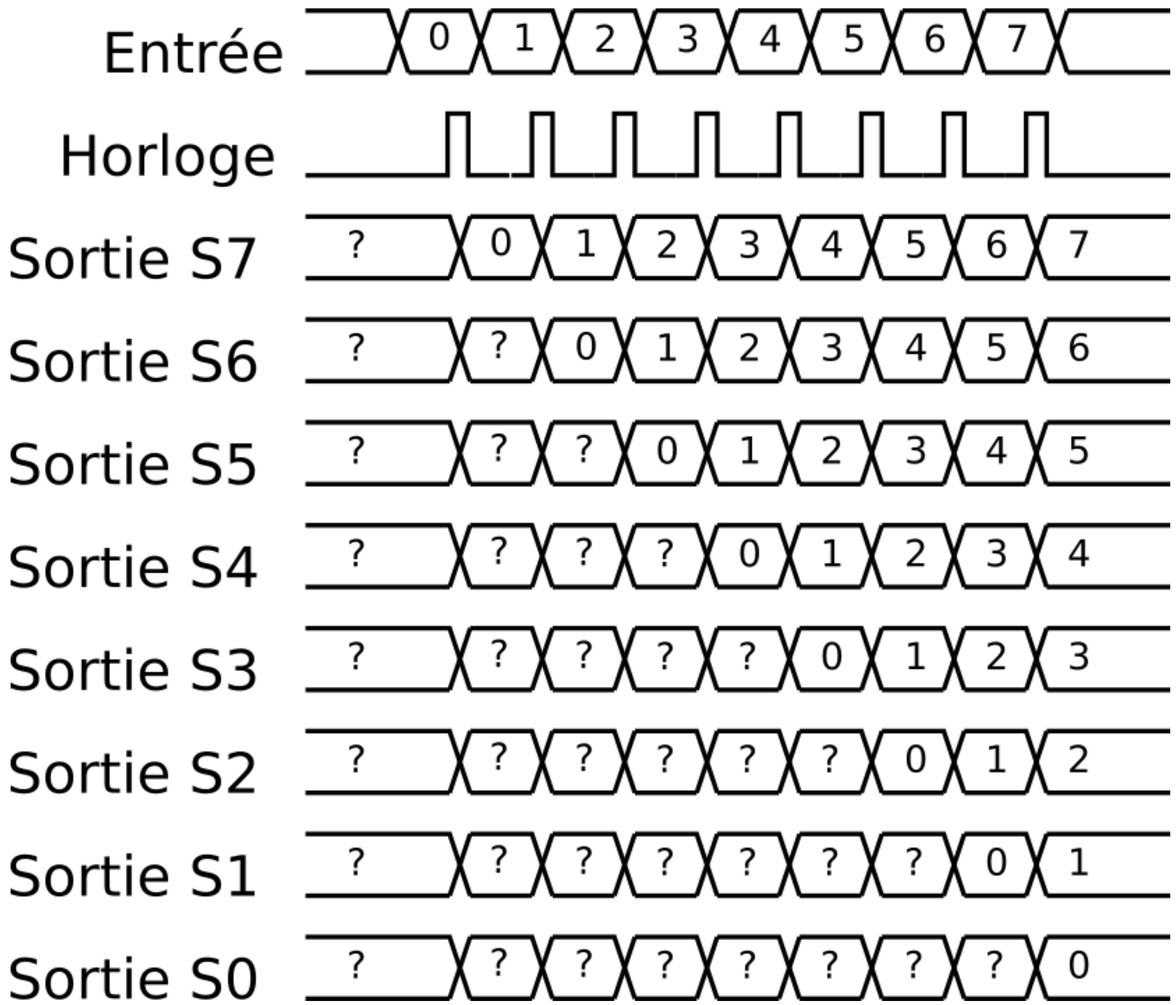

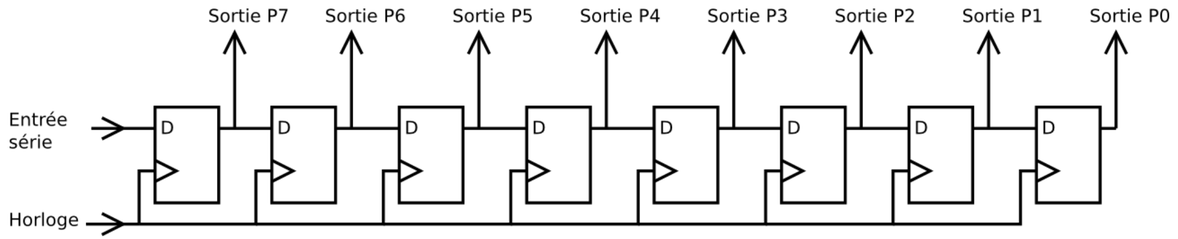

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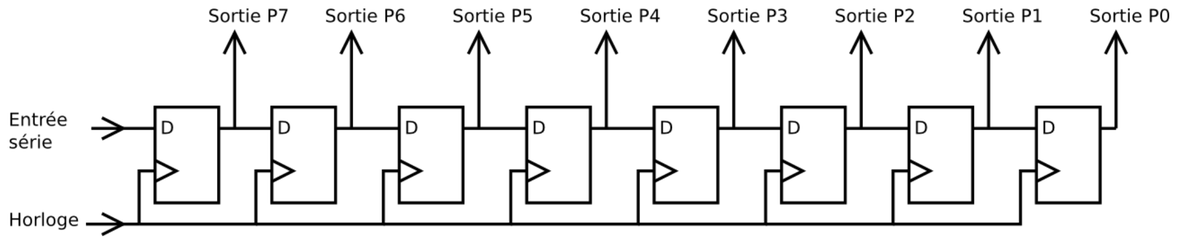

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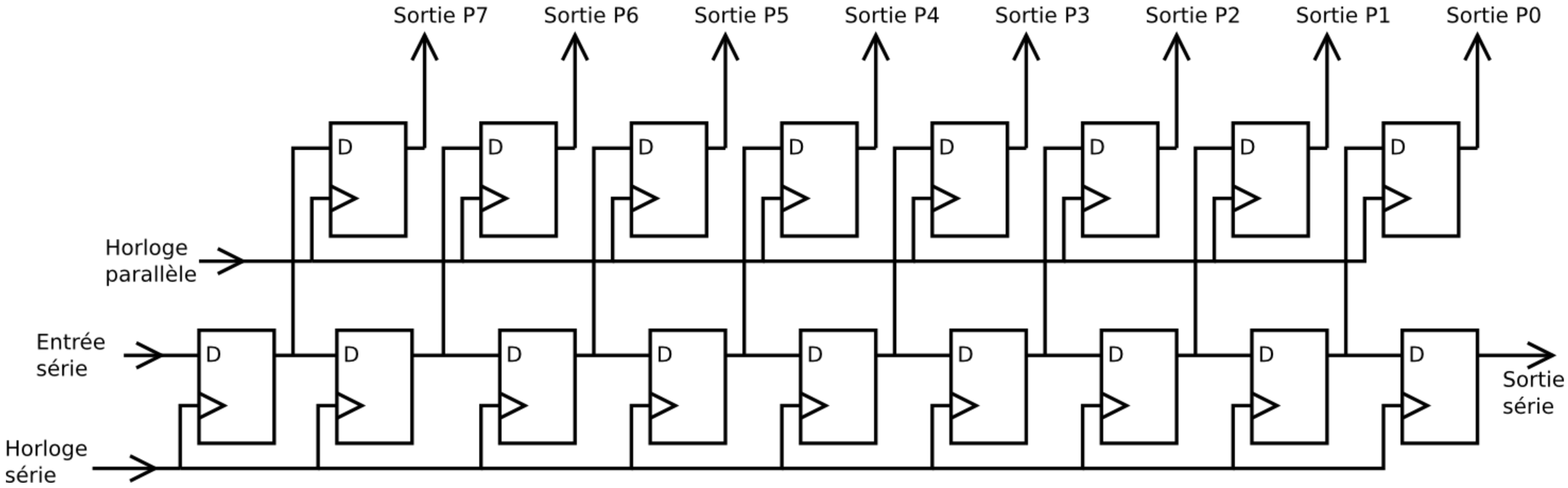

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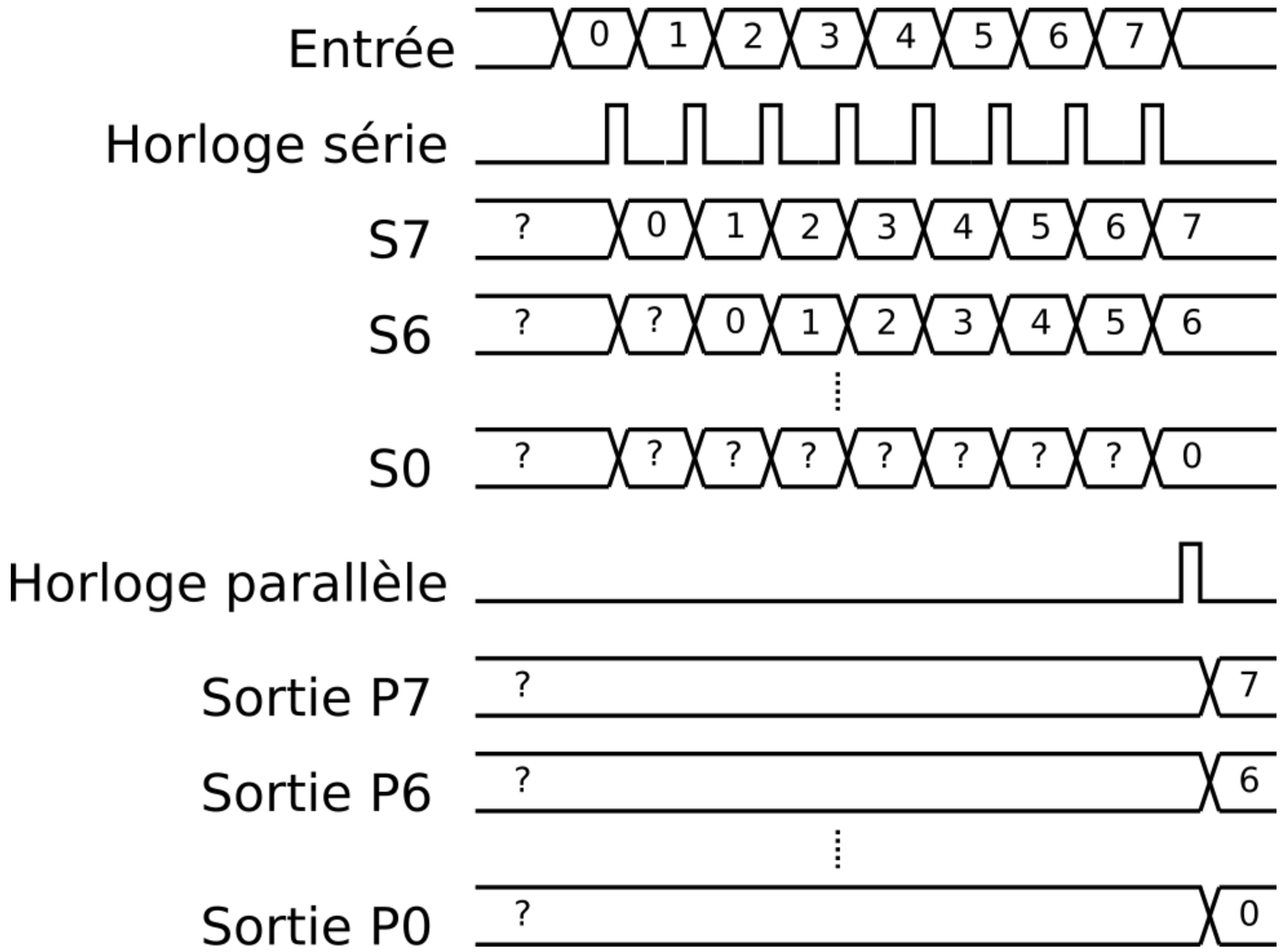

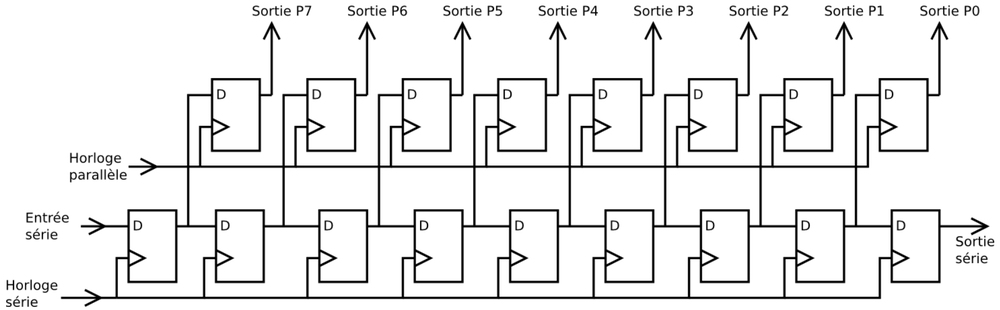

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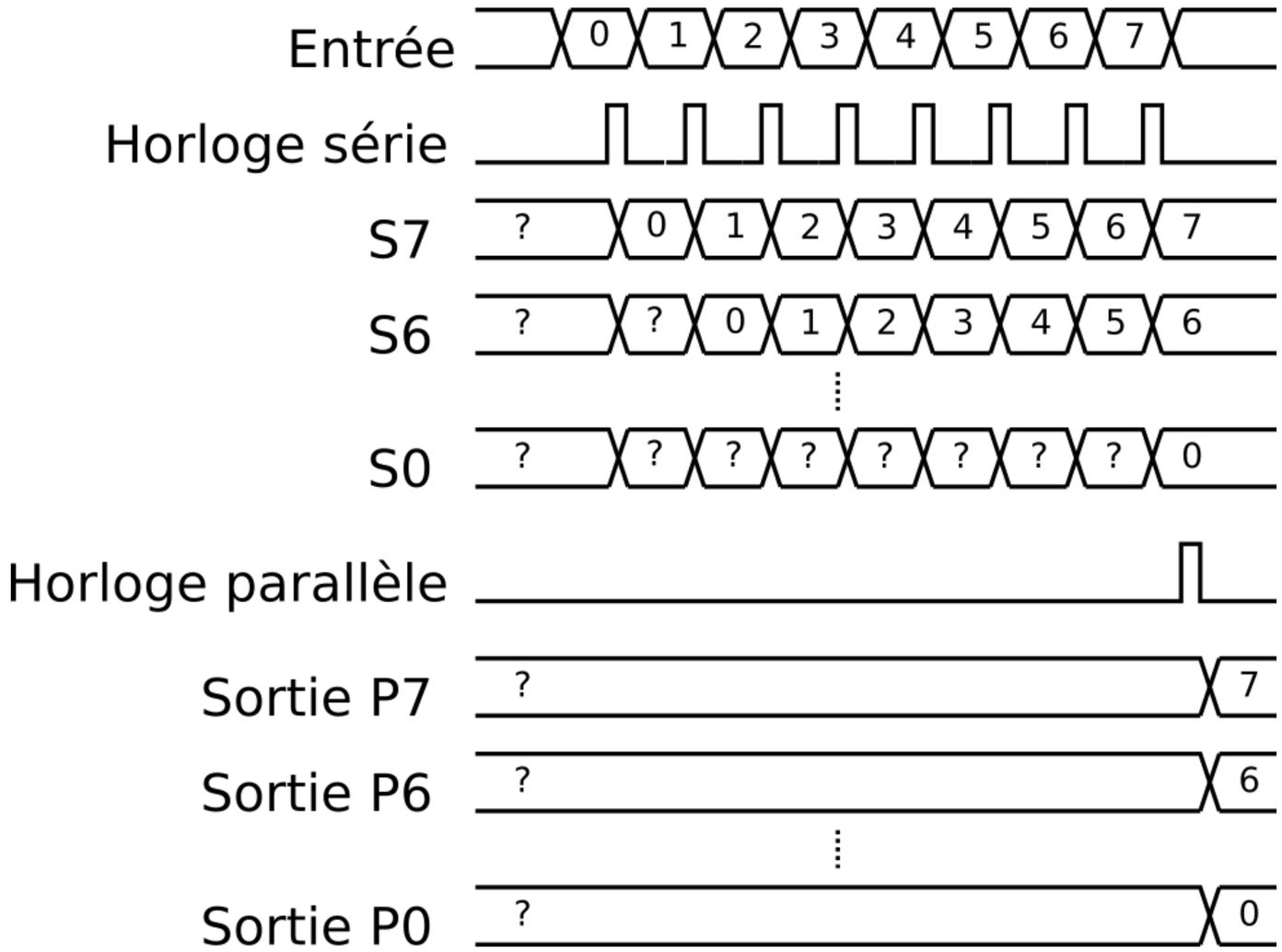
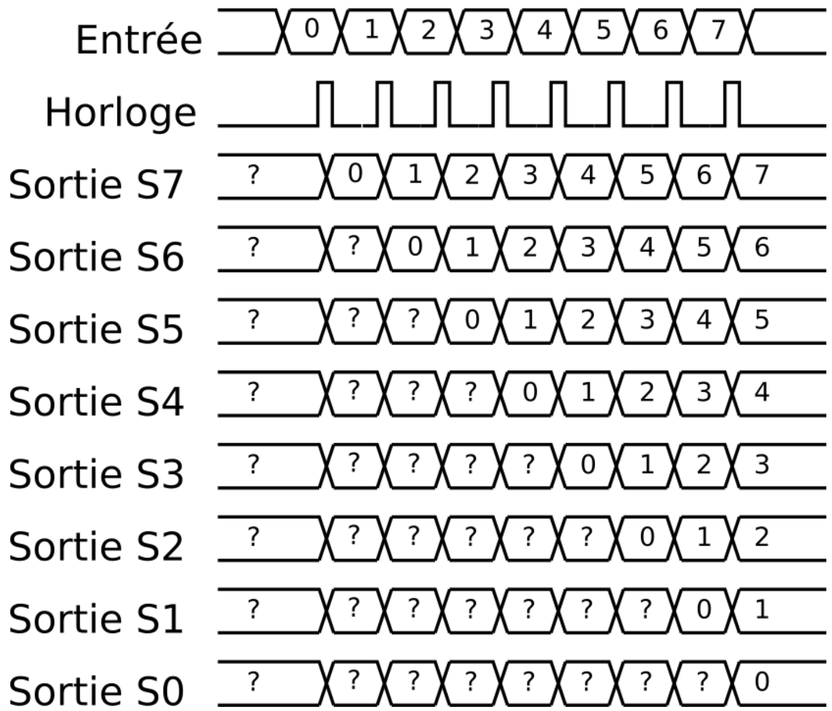
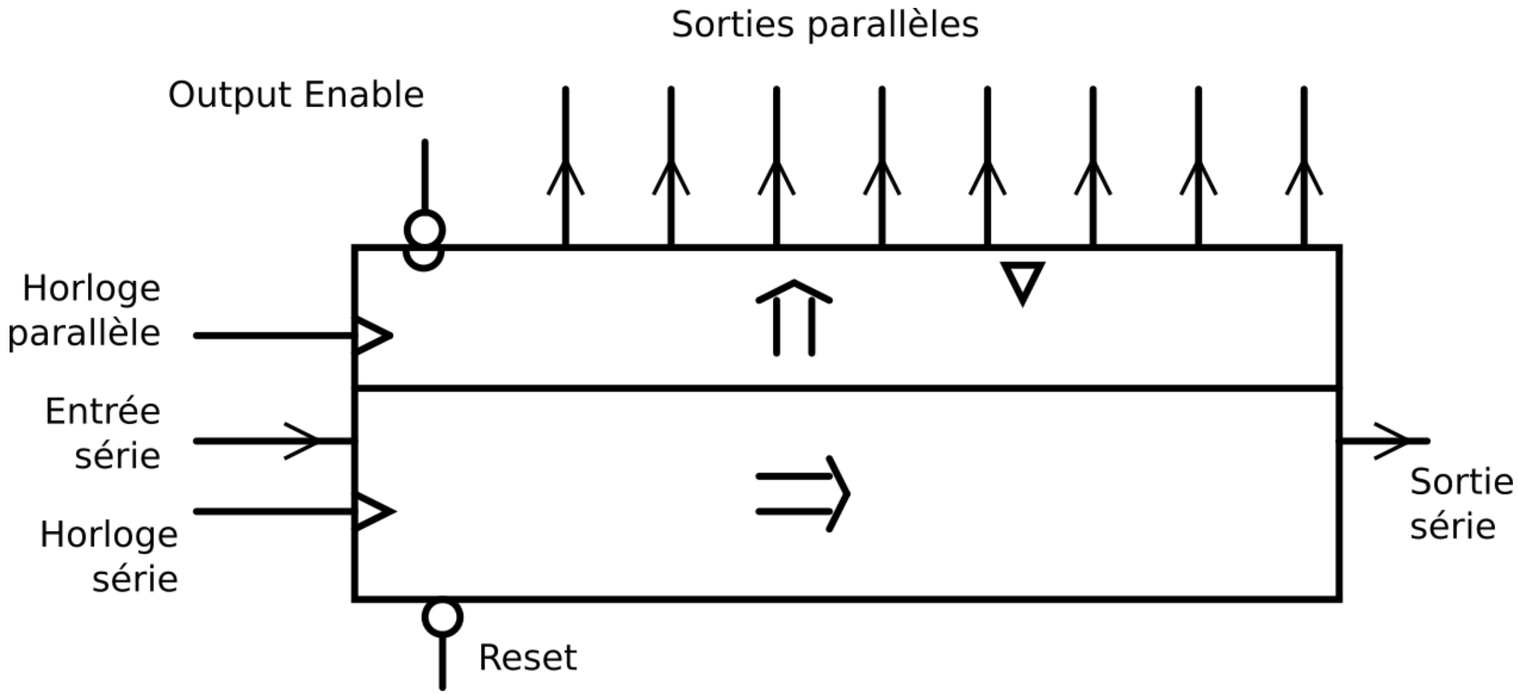
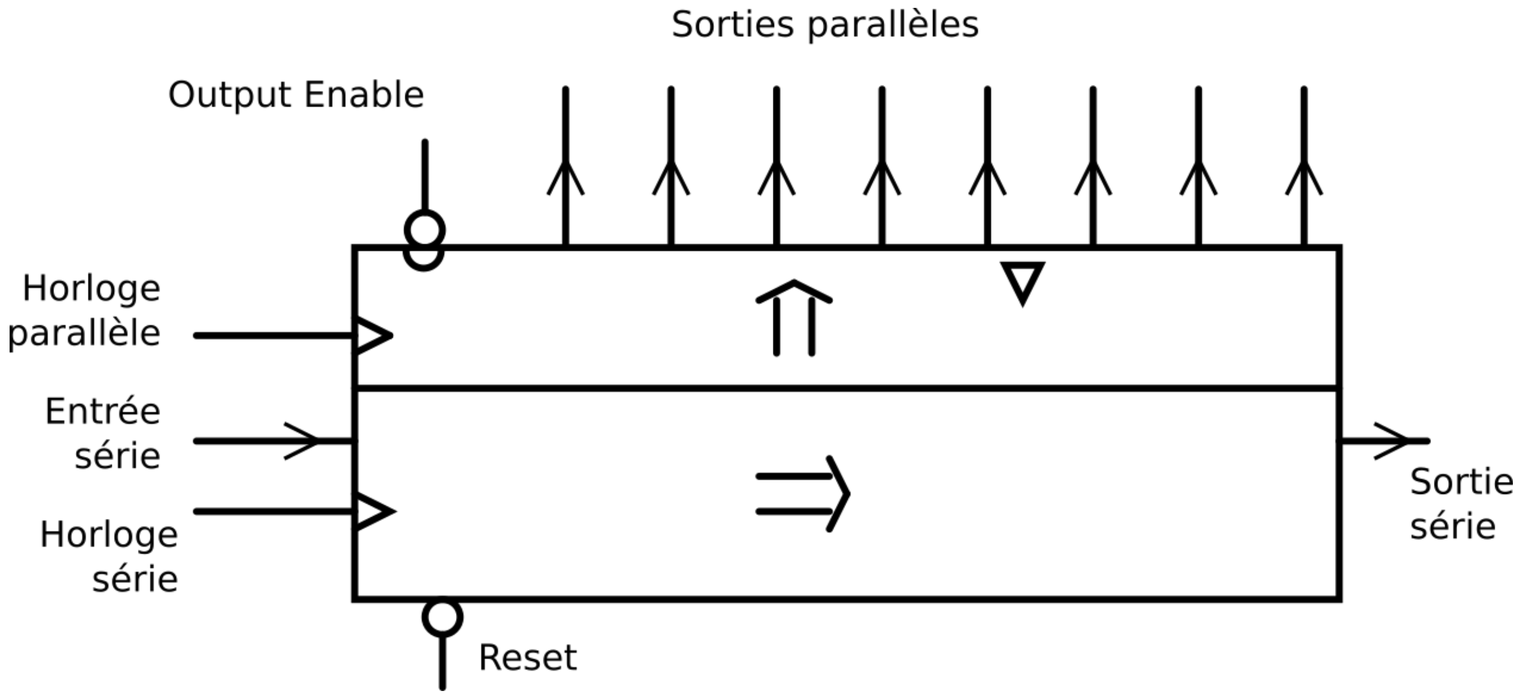




74HC595


Sorties parallèles
Output Enable
Horloge
parallèle
Entrée
série
Horloge
série
Sortie
série
Reset

74HC595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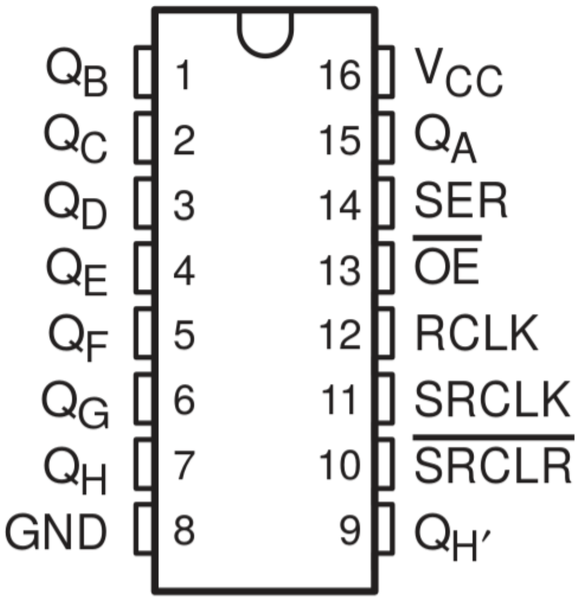
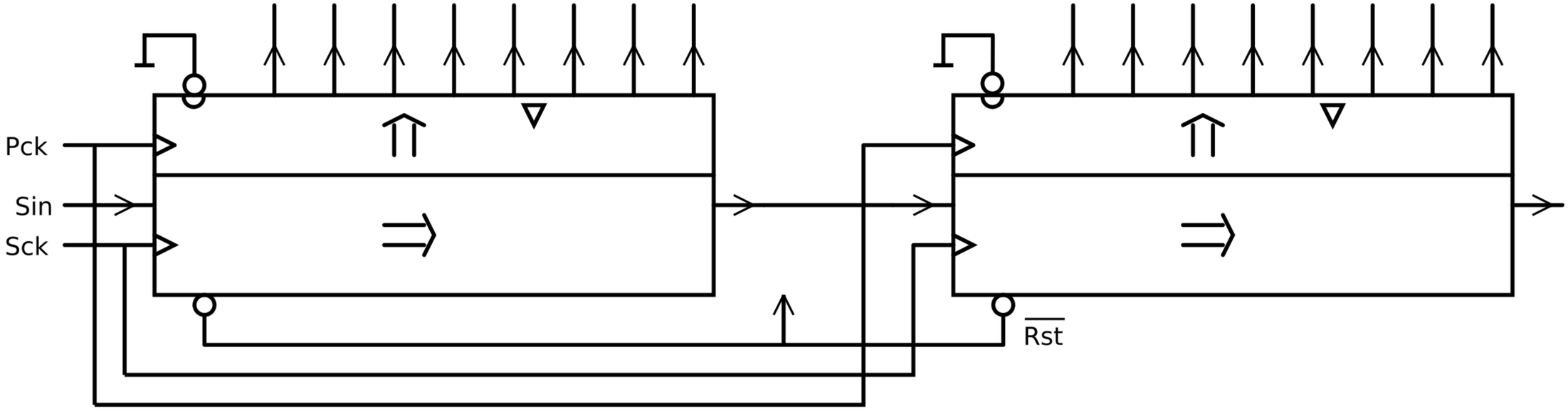
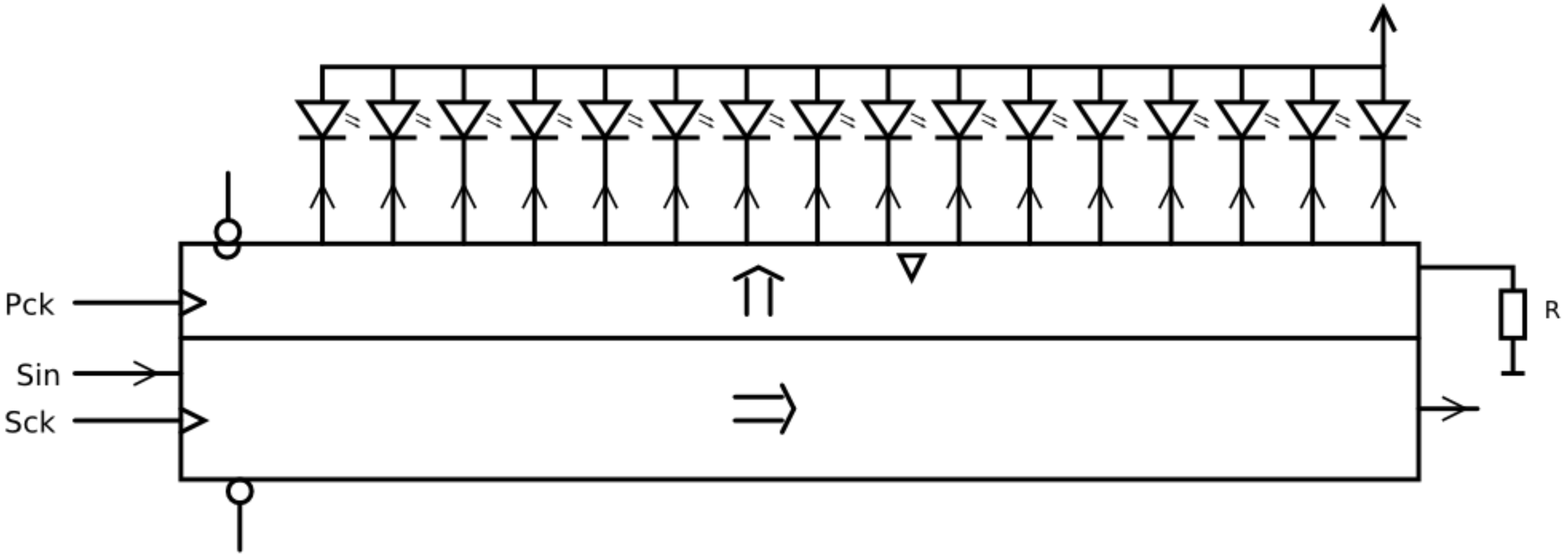

Q_B 1
Q_C 2
Q_D 3
Q_E 4
Q_F 5
Q_G 6
Q_H 7
GND 8
16 V_{CC}
15 Q_A
14 SER
13 $\overline{OE}$
12 RCLK
11 SRCLK
10 $\overline{SRCLR}$
9 $Q_{H'}$

Registres en cascade



Registres à sorties à courant constant



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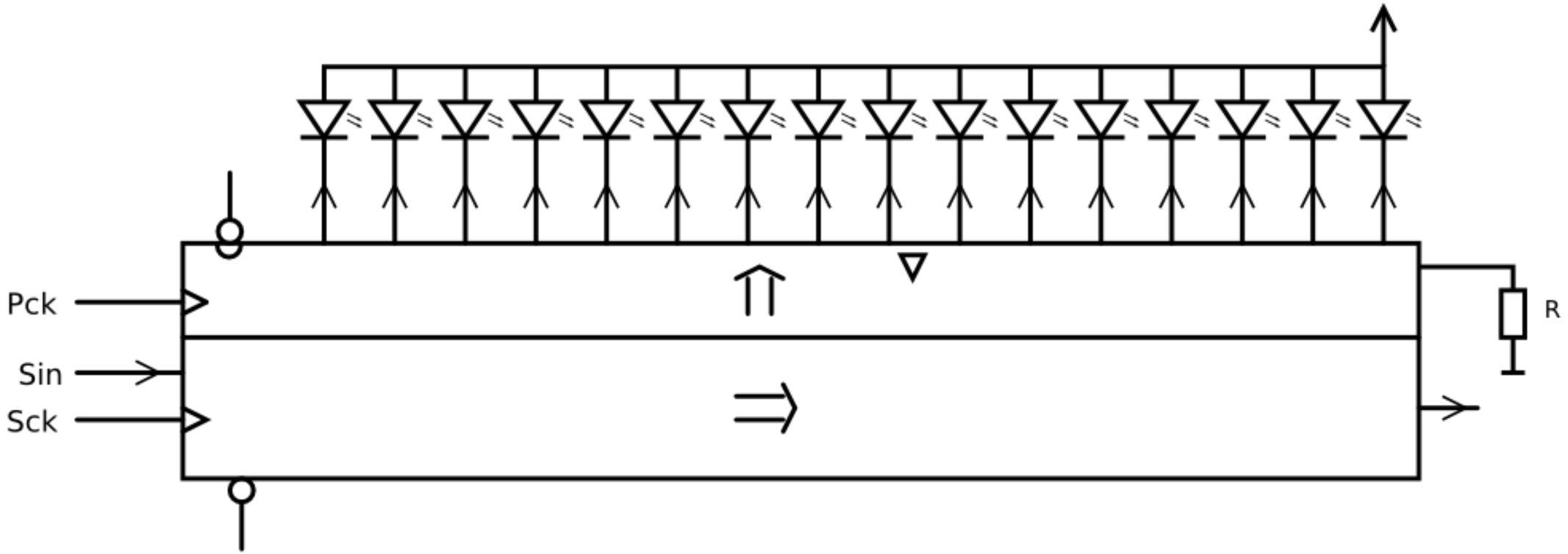

- TB62701, TLC5905, A6276...

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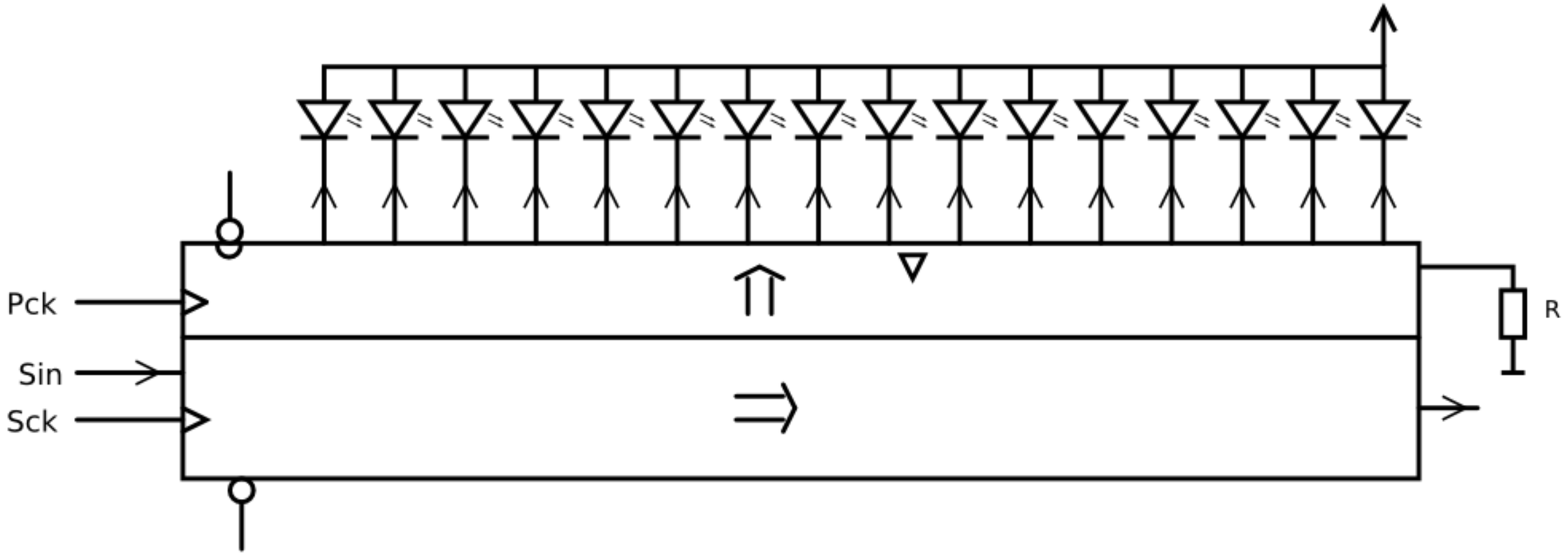

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- SUM2016 !

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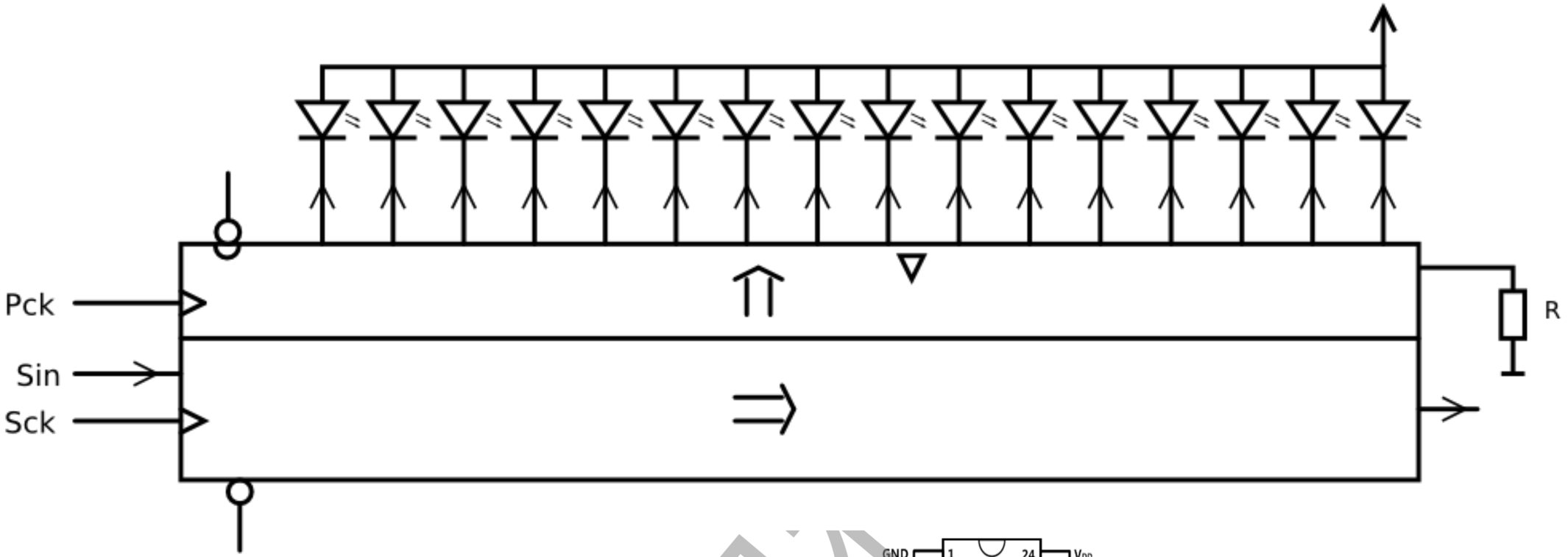

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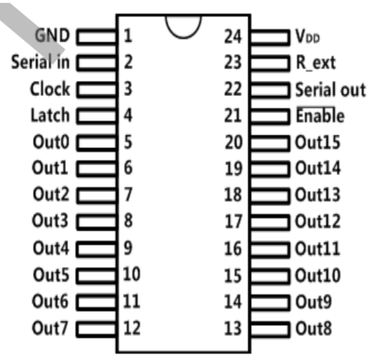
户内/户外全彩视频 LED 显示屏
交通指示屏，文字信息显示屏
招牌和标识 装饰照明，护栏管
LCD 背光源



Chinois...

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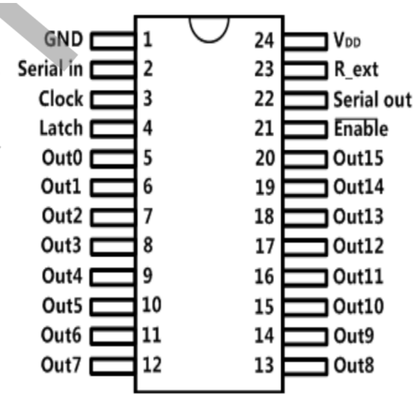

Programmation

```
#define SortieSerieOn P1OUT |= (1<<0)
#define SortieSerieOff P1OUT &=~(1<<0)

#define ClockSerHaut P1OUT |= (1<<1)
#define ClockSerBas P1OUT &=~(1<<1)

#define ClockParHaut P1OUT |= (1<<2)
#define ClockParBas P1OUT &=~(1<<2)
```

Programmation

```
10 void Envoie8bitsSerie (uint8_t valeur) {
11   uint16_t i;
12   for (i=0; i<8; i++) {
13     if (valeur & (1<<i)) {
14       SortieSerieOn;
15     } else {
16       SortieSerieOff;
17     }
18     ClockSerHaut; ClockSerBas;
19   }
20   ClockParHaut; ClockParBas;
21 }
```

Programmation

```
11 ...
12   for (i=0; i<8; i++) {
13     if (valeur & (1<<0)) {
14       SortieSerieOn;
15     } else {
16       SortieSerieOff;
17     }
18     ClockSerHaut; ClockSerBas;
19     valeur = valeur >> 1;
20 ...
```

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