

## Four bit digital tube

### Summary

This project will teach you how to use **Four bit digital tube** for display.

### Materials

Arduino Uno x 1

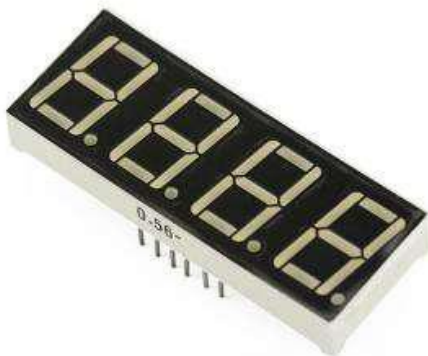
220 Ohm resistor x 8

Breadboard x 1

4 digit LED x 1

DuPont wires (few pcs)

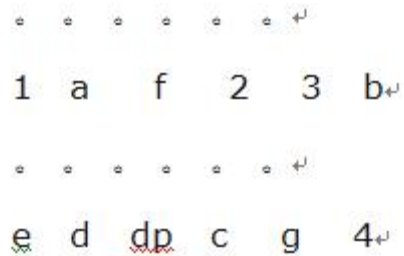
### Product Description



The segments are Light Emitting Diodes and they therefore need a series resistance to prevent burning out.

Digital display is widely used in instruments, clocks, displays and so on.

## Pin Layout



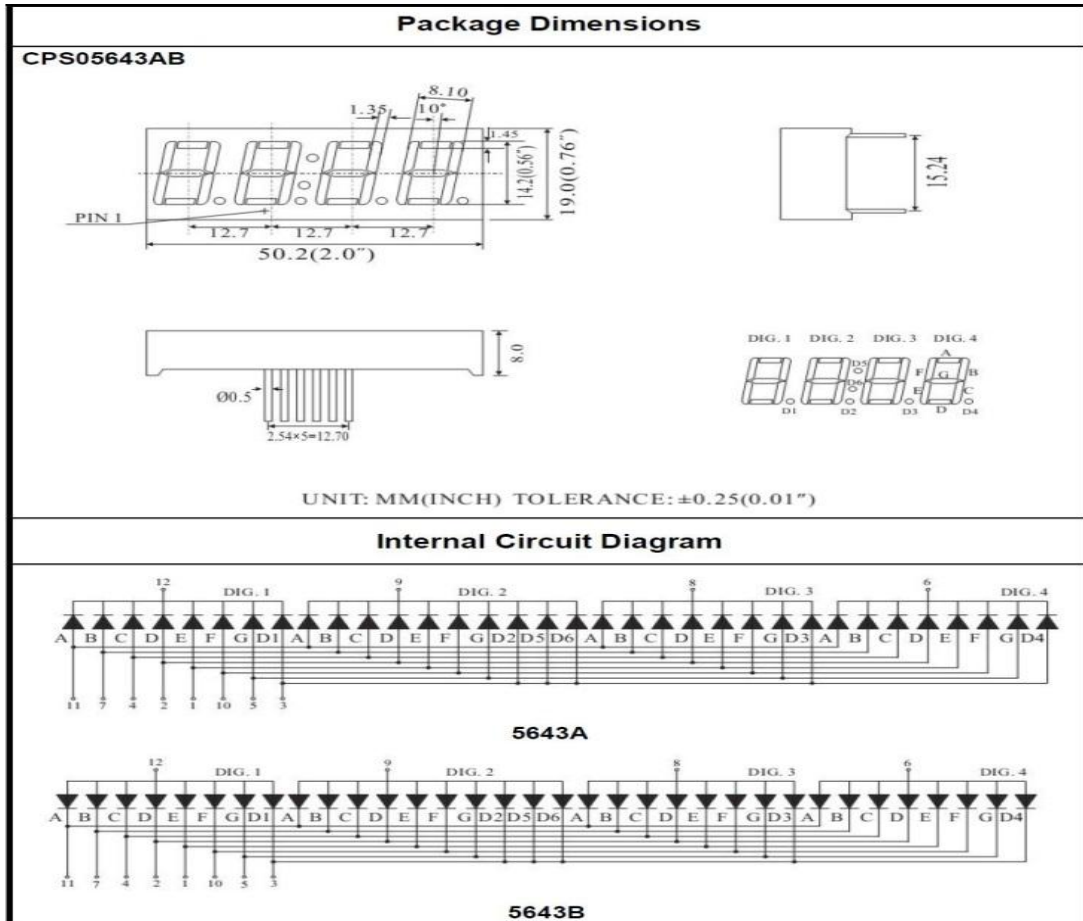
## Device Parameters

Type: common anode

Size: 30mm \* 14mm \* 7.2mm (L\*W\*T)

Luminous color: Highlight-red

## Device layout and Schematic



**Four Digits Displays Series**



```
int d4 = 9;
int d3 = 10;
int d2 = 11;
int d1 = 12;
//Set variable
long n = 1230;
int x = 100;
int del = 55; //Here to fine tune the clock
void setup()
{
  pinMode(d1, OUTPUT);
  pinMode(d2, OUTPUT);
  pinMode(d3, OUTPUT);
  pinMode(d4, OUTPUT);
  pinMode(a, OUTPUT);
  pinMode(b, OUTPUT);
  pinMode(c, OUTPUT);
  pinMode(d, OUTPUT);
  pinMode(e, OUTPUT);
  pinMode(f, OUTPUT);
  pinMode(g, OUTPUT);
  pinMode(dp, OUTPUT);
}
////////////////////////////////////
void loop()
{
  Display(1, 1);

  Display(2, 2);

  Display(3, 3);
```

*Display(4, 4);*

*}*

*////////////////////////////////////*

*void WeiXuan(unsigned char n)//*

*{*

*switch(n)*

*{*

*case 1:*

*digitalWrite(d1,HIGH);*

*digitalWrite(d2, LOW);*

*digitalWrite(d3, LOW);*

*digitalWrite(d4, LOW);*

*break;*

*case 2:*

*digitalWrite(d1, LOW);*

*digitalWrite(d2, HIGH);*

*digitalWrite(d3, LOW);*

*digitalWrite(d4, LOW);*

*break;*

*case 3:*

*digitalWrite(d1,LOW);*

*digitalWrite(d2, LOW);*

*digitalWrite(d3, HIGH);*

*digitalWrite(d4, LOW);*

*break;*

*case 4:*

*digitalWrite(d1, LOW);*

*digitalWrite(d2, LOW);*

*digitalWrite(d3, LOW);*

*digitalWrite(d4, HIGH);*

```
        break;
    default :
        digitalWrite(d1, LOW);
    digitalWrite(d2, LOW);
    digitalWrite(d3, LOW);
    digitalWrite(d4, LOW);
    break;
}
}
void Num_0()
{
    digitalWrite(a, LOW);
    digitalWrite(b, LOW);
    digitalWrite(c, LOW);
    digitalWrite(d, LOW);
    digitalWrite(e, LOW);
    digitalWrite(f, LOW);
    digitalWrite(g, HIGH);
    digitalWrite(dp,HIGH);
}
void Num_1()
{
    digitalWrite(a, HIGH);
    digitalWrite(b, LOW);
    digitalWrite(c, LOW);
    digitalWrite(d, HIGH);
    digitalWrite(e, HIGH);
    digitalWrite(f, HIGH);
    digitalWrite(g, HIGH);
    digitalWrite(dp,HIGH);
}
void Num_2()
```

```
{  
    digitalWrite(a, LOW);  
    digitalWrite(b, LOW);  
    digitalWrite(c, HIGH);  
    digitalWrite(d, LOW);  
    digitalWrite(e, LOW);  
    digitalWrite(f, HIGH);  
    digitalWrite(g, LOW);  
    digitalWrite(dp,HIGH);  
}
```

```
void Num_3()
```

```
{  
    digitalWrite(a, LOW);  
    digitalWrite(b, LOW);  
    digitalWrite(c, LOW);  
    digitalWrite(d, LOW);  
    digitalWrite(e, HIGH);  
    digitalWrite(f, HIGH);  
    digitalWrite(g, LOW);  
    digitalWrite(dp,HIGH);  
}
```

```
void Num_4()
```

```
{  
    digitalWrite(a, HIGH);  
    digitalWrite(b, LOW);  
    digitalWrite(c, LOW);  
    digitalWrite(d, HIGH);  
    digitalWrite(e, HIGH);  
    digitalWrite(f, LOW);  
    digitalWrite(g, LOW);  
    digitalWrite(dp,HIGH);  
}
```



```
void Num_5()
{
    digitalWrite(a, LOW);
    digitalWrite(b, HIGH);
    digitalWrite(c, LOW);
    digitalWrite(d, LOW);
    digitalWrite(e, HIGH);
    digitalWrite(f, LOW);
    digitalWrite(g, LOW);
    digitalWrite(dp,HIGH);
}
```

```
void Num_6()
{
    digitalWrite(a, LOW);
    digitalWrite(b, HIGH);
    digitalWrite(c, LOW);
    digitalWrite(d, LOW);
    digitalWrite(e, LOW);
    digitalWrite(f, LOW);
    digitalWrite(g, LOW);
    digitalWrite(dp,HIGH);
}
```

```
void Num_7()
{
    digitalWrite(a, LOW);
    digitalWrite(b, LOW);
    digitalWrite(c, LOW);
    digitalWrite(d, HIGH);
    digitalWrite(e, HIGH);
    digitalWrite(f, HIGH);
    digitalWrite(g, HIGH);
    digitalWrite(dp,HIGH);
}
```

```
}  
  
void Num_8()  
{  
    digitalWrite(a, LOW);  
    digitalWrite(b, LOW);  
    digitalWrite(c, LOW);  
    digitalWrite(d, LOW);  
    digitalWrite(e, LOW);  
    digitalWrite(f, LOW);  
    digitalWrite(g, LOW);  
    digitalWrite(dp,HIGH);  
}  
  
void Num_9()  
{  
    digitalWrite(a, LOW);  
    digitalWrite(b, LOW);  
    digitalWrite(c, LOW);  
    digitalWrite(d, LOW);  
    digitalWrite(e, HIGH);  
    digitalWrite(f, LOW);  
    digitalWrite(g, LOW);  
    digitalWrite(dp,HIGH);  
}  
  
void Clear() // Clear the screen  
{  
    digitalWrite(a, HIGH);  
    digitalWrite(b, HIGH);  
    digitalWrite(c, HIGH);  
    digitalWrite(d, HIGH);  
    digitalWrite(e, HIGH);  
    digitalWrite(f, HIGH);  
    digitalWrite(g, HIGH);  
}
```

```
    digitalWrite(dp,HIGH);
}
void pickNumber(unsigned char n)//Choose the number of
{
    switch(n)
    {
        case 0:Num_0();
        break;
        case 1:Num_1();
        break;
        case 2:Num_2();
        break;
        case 3:Num_3();
        break;
        case 4:Num_4();
        break;
        case 5:Num_5();
        break;
        case 6:Num_6();
        break;
        case 7:Num_7();
        break;
        case 8:Num_8();
        break;
        case 9:Num_9();
        break;
        default:Clear();
        break;
    }
}
void Display(unsigned char x, unsigned char Number)//Show that x is the coordinate, Number is
the number
```

```
{  
  WeiXuan(x);  
  pickNumber(Number);  
  delay(1);  
  Clear(); //Vanishing  
}
```

## Results

