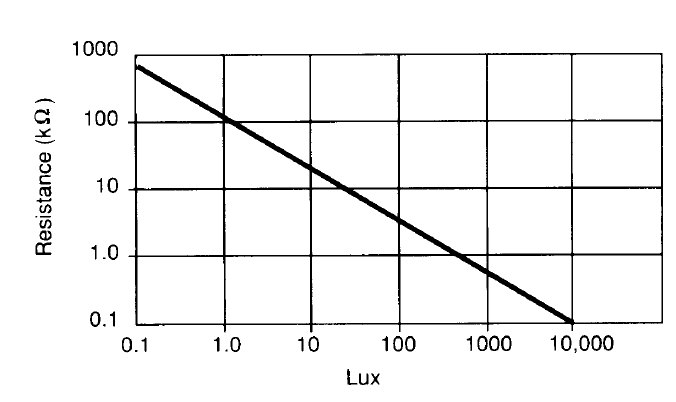
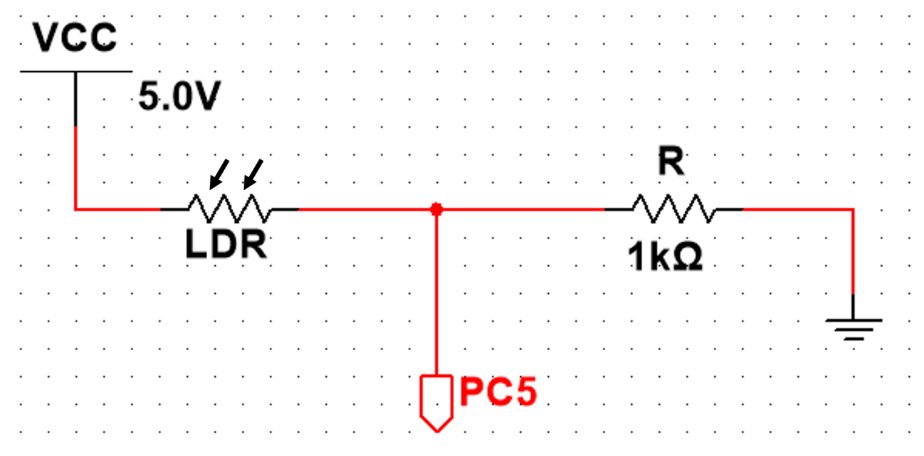
# LDR



Specifications

|  |  |
| --- | --- |
| **Bright Resistance (100 lux)** | 5k Ω |
| **Dark Resistance (10 lux)** | 10k Ω |
| **Very Bright Resistance (100 lux)** | 400 Ω |
| **Max Voltage** | 150 V |
| **Max Power** | 100 mW |
| **Ambient Temperature Range** | -30 ~ +70 °C |

**Interface**

|  |  |  |
| --- | --- | --- |
|  | **Pin Name** | **Pin Function** |
| **LDR OUT** | PC5 | ADC12\_IN15 |

**Test Cases**

Best ambient light (250 lux) -> 2.5k Ω

|  |  |  |
| --- | --- | --- |
| **Light Level** | **Expected Output** | **Real output** |
| Bright (100 lux) | 0.83 V |  |
| Dark (10 lux) | 0.45 V |  |
| Good Lighting (250 lux) | 1.43 V |  |

# HC-SR04

**Specifications**

|  |  |
| --- | --- |
| **Working Voltage** | 5V |
| **Working Current** | 15mA |
| **Working Frequency** | 40KHZ |
| **Max Range** | 4m |
| **Min Range** | 2cm |
| **Measuring Angle** | 15° |
| **Trigger Input SIgnal** | 10us TTL pulse |

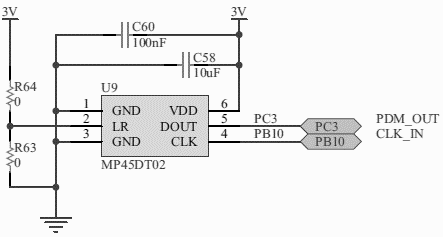
**Interface**

|  |  |  |
| --- | --- | --- |
|  | **Pin Name** | **Pin Function** |
| **Trig** | PA1 | Out |
| **Echo** | PA0 | TIM2\_CH2 |

**Test Cases**

|  |  |  |
| --- | --- | --- |
| **Distance** | **Expected Output** | **Real output** |
| Min (2 cm) | 2 cm |  |
| Max (400 cm) | 400 cm |  |
| Reference (150 cm) | 150 cm |  |

# Mic



**Specifications**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Paramevter** | **Min** | **Typical** | **Max** |
| **Vdd** | Supply voltage | 1.6V | 1.8V | 3.6V |
| **Idd** | Current in normal mode |  | 0.65mA |  |
| **IddPdn** | Current in power-down mode |  | 0.20mA |  |
| **So** | Sensitivity | -29 dBFS | -26 dBFS | -23 dBFS |
| **CLOCK** | Input clock frequency | 1 MHz | 2.4 MHz | 3.25 MHz |
| **TWK** |  |  |  | 10ms |
| **Viol(Iout=1mA)** | Low level logic input/output voltage | -0.3 V |  | (0.35 \* Vdd) V |
| **Vioh(Iout=1mA)** | High level logic input/output voltage | (0.65xVdd) V |  | (Vdd+0.3) V |

**Interface**

|  |  |  |
| --- | --- | --- |
|  | **Pin Name** | **Pin Function** |
| **PDM Out** | PC3 |  |
| **Clock** | PB10 | TIM2\_CH3 |

**Test Cases**

|  |  |  |
| --- | --- | --- |
|  | **Expected Output** | **Real output** |
|  |  |  |
|  |  |  |
|  |  |  |

# Display

ILI9488 Display Driver

**Specifications**

**320x480**

|  |  |
| --- | --- |
| **Resolution** | 320x480 |
| **Frame Memory** | 345 kbytes |
| **Input Image Function** | 24 bits |
| **IO VCC** | 1.65 – 3.3 V |
| **Operation Temperature** | -40 ~ +85 °C |

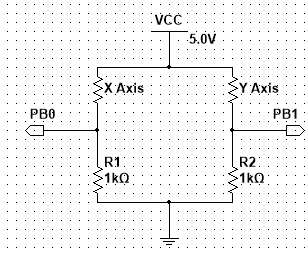
**Interface**

|  |  |  |
| --- | --- | --- |
|  | **Pin Name** | **Pin Function** |
| **SCK** | PA5 | SPI1\_SCK |
| **MISO** | PA6 | SPI1\_MISO |
| **MOSI** | PA7 | SPI1\_MOSI |

**Test Cases**

|  |  |  |
| --- | --- | --- |
|  | **Expected Output** | **Real output** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

# Resistive Touchscreen



**Specifications**

**Interface**

|  |  |  |
| --- | --- | --- |
|  | **Pin Name** | **Pin Function** |
| **X Axis** | PB0 | ADC12\_IN8 |
| **Y Axis** | PB1 | ADC12\_IN9 |

**Test Cases**

|  |  |  |
| --- | --- | --- |
| **Touch** | **Expected Output (X,Y)** | **Real output** |
| Right Top Corner |  |  |
| Right Bottom Corner |  |  |
| Left Top Corner |  |  |
| Left Bottom Corner |  |  |