

A – Technický list diod



2x5x7mm Rectangular Red LED
OS5RPM71A1B

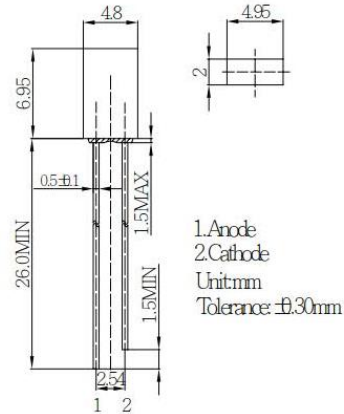
■ Features

- High Luminous LEDs
- 2x5x7mm Rectangular Standard Directivity
- Superior Weather-resistance
- UV Resistant Epoxy
- Water Clear Type

■ Applications

- Traffic Signal
- Backlighting
- Signal and channel letter
- Other Lighting

■ Outline Dimension



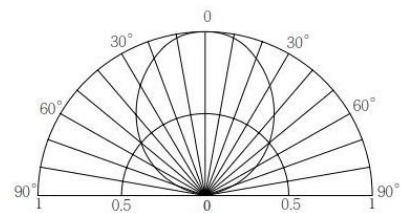
■ Absolute Maximum Rating

(Ta=25°C)

Item	Symbol	Value	Unit
DC Forward Current	I _F	50	mA
Pulse Forward Current*	I _{FP}	120	mA
Reverse Voltage	V _R	5	V
Power Dissipation	P _D	130	mW
Operating Temperature	T _{opr}	-30 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +100	°C
Lead Soldering Temperature	T _{sol}	260°C / 5sec	-

*Pulse width Max.10ms Duty ratio max 1/10

■ Directivity



■ Electrical -Optical Characteristics

(Ta=25°C)

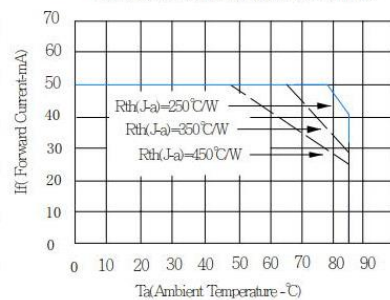
Item	Symbol	Condition	Min.	Typ.	Max.	Unit
DC Forward Voltage	V _F	I _F =20mA	1.8	2.1	2.6	V
DC Reverse Current	I _R	V _R =5V	-	-	10	μA
Domi. Wavelength*	λ _D	I _F =20mA	620	625	630	nm
Luminous Intensity*	I _v	I _F =20mA	1560	2000	-	mcd
50% Power Angle	2θ _{1/2}	I _F =20mA	-	100	-	deg

*1 Tolerance of dominant wavelength is ±1nm

*2 Tolerance of luminous intensity is ±15%

■ Maximum Forward Current

Maximum Permissible Forward Current T_J=115°C



LED & Application Technologies



REACH
The new EU chemicals legislation



B – Program Arduino

```
// rozsvícení aktivních tlačítek
#include <SD.h>
#include <SPI.h>

const int chipSelect = 53;
int pin_arduino_zelena[] = {2,3,4,22,23,24,25};
int pin_arduino_cervena[] = {5,6,7,26,27,28,29};
int pin_zhas[] = {0,0,0,1,1,1,1};

int pomocna[11];
int a,b;

byte pin_tlacitka[12][7] = {
  {1,0,0,0,1,1,1}, // tlacitko index 0 (1)
  {0,1,0,0,1,1,1}, // tlacitko index 1 (2)
  {0,0,1,0,1,1,1}, // tlacitko index 2 (3)
  {1,0,0,1,0,1,1}, // tlacitko index 3 (4)
  {0,1,0,1,0,1,1}, // tlacitko index 4 (5)
  {0,0,1,1,0,1,1}, // tlacitko index 5 (6)
  {1,0,0,1,1,0,1}, // tlacitko index 6 (7)
  {0,1,0,1,1,0,1}, // tlacitko index 7 (8)
  {0,0,1,1,1,0,1}, // tlacitko index 8 (9)
  {1,0,0,1,1,1,0}, // tlacitko index 9 (10)
  {0,1,0,1,1,1,0}, // tlacitko index 10 (11)
  {0,0,1,1,1,1,0}, // tlacitko index 11 (12)
};

void setup() {
  Serial.begin(9600);
  for(int i=0; i<7; i++)
  {
    pinMode(pin_arduino_zelena[i], OUTPUT);
    pinMode(pin_arduino_cervena[i], OUTPUT);
  }

  while(!SD.begin(chipSelect)) //pokud nebude karta vlozena, bude blikat
    stredove cervene tlacitko
  {
    for(int i=0; i<7; i++)
    { digitalWrite(pin_arduino_cervena[i], pin_tlacitka[6][i]);}
    delay(700);
    for(int i=0; i<7; i++)
    { digitalWrite(pin_arduino_cervena[i], pin_zhas[i]);}
    delay(500);
    Serial.println("karta neni");
  }

  for(int i = 0; i<3; i++)
  {
    for(int i=0; i<7; i++)
    { digitalWrite(pin_arduino_zelena[i], pin_tlacitka[6][i]);}
    delay(200);
    for(int i=0; i<7; i++)
    { digitalWrite(pin_arduino_zelena[i], pin_zhas[i]);}
    delay(200);
  }
}
```

```

        delay(1000);

        Serial.println("karta OK");
        ukazTlac();
    }

void loop() {}

void ukazTlac()
{
    File soubor = SD.open("data.txt",FILE_READ);
    for(int i=0; i<4; i++)
    { a = soubor.read();}
    for (int i = 0; i<12; i++)
    { a = soubor.read();
      prevod();
      pomocna[i] = b; }
    soubor.close();

    int i,j;
    for(i = 0; i<12; i++)
    { if(pomocna[i] == 1)
      {
        for(j=0; j<7; j++)
        { digitalWrite(pin_arduino_zelena[j], pin_tlacitka[i][j]);}
        delay(500);
        for(j=0; j<7; j++)
        { digitalWrite(pin_arduino_zelena[j], pin_zhas[j]);}
      }
    }
}

void prevod() //převede ASCII
{
    if (a == 48) { b = 0; return b;};
    if (a == 49) { b = 1; return b;};
    if (a == 50) { b = 2; return b;};
    if (a == 51) { b = 3; return b;};
    if (a == 52) { b = 4; return b;};
    if (a == 53) { b = 5; return b;};
    if (a == 54) { b = 6; return b;};
    if (a == 55) { b = 7; return b;};
    if (a == 56) { b = 8; return b;};
    if (a == 57) { b = 9; return b;};
}

```

1

2

3

4

A

A

B

B

C

C

D

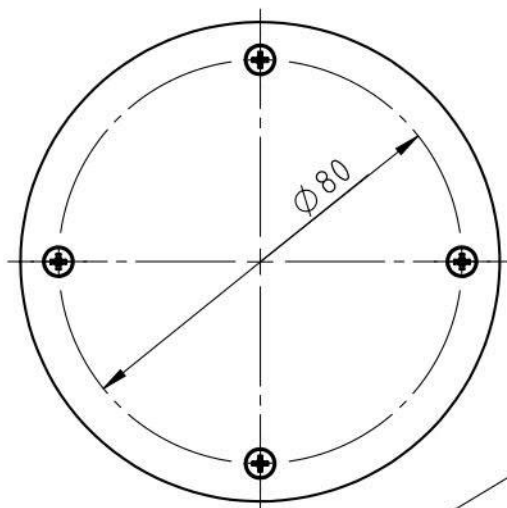
D

E

E

F

F



střední kryt

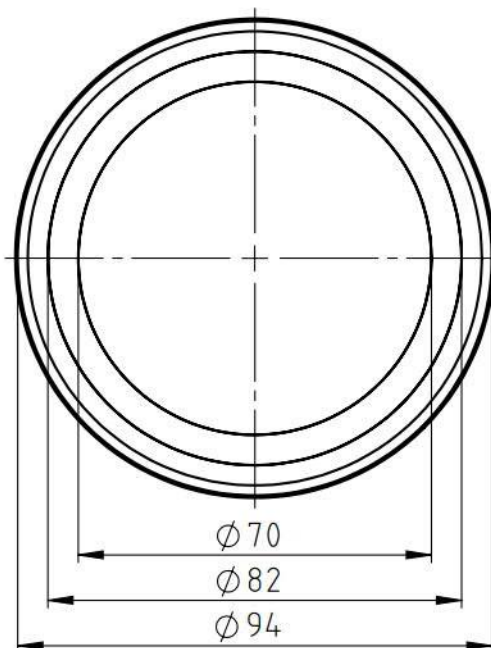
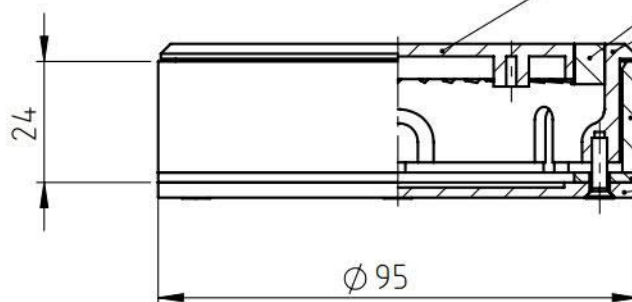
světlovod

tělo

prstenec

podložka

víčko

 $\varnothing 70$ $\varnothing 82$ $\varnothing 94$

AUTOR	DATUM	PODPIS	DATUM	HMOTNOST	kg	MĚŘÍTKO
NAVŘHIL SOUKAL Jan	12.5.2018	PŘEZK.		SESTAVA		1:2
KRESLIL SOUKAL Jan	10.6.2018	SCHVÁLIL		KUSOVNÍK		PROMÍTÁNÍ: (ISO E)

	ČESKÉ VYSOKÉ UČENÍ TECHNICKÉ V PRAZE	FAKULTA STROJNÍ	NÁZEV	SESTAVA TLAČÍTKA	TYP:
			ČÍSLO VÝKRESU	Příloha D	

LIST: 1/1

1

2

3

4