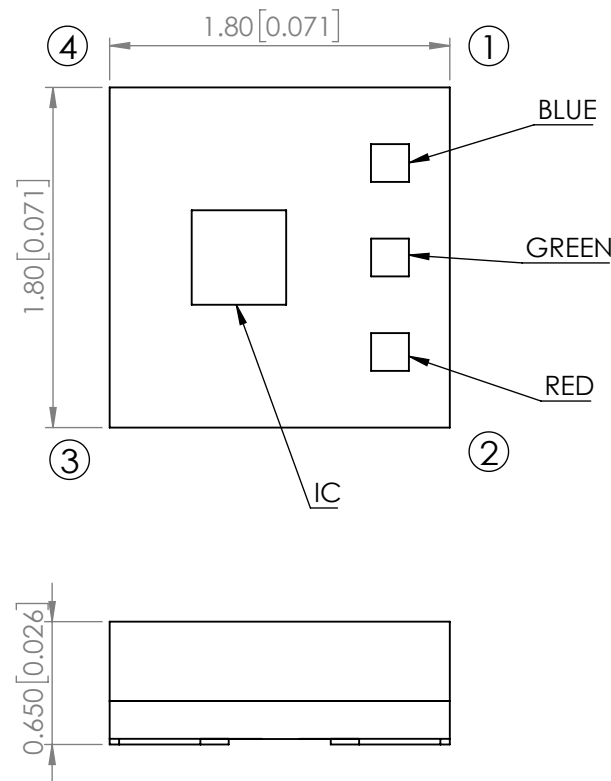
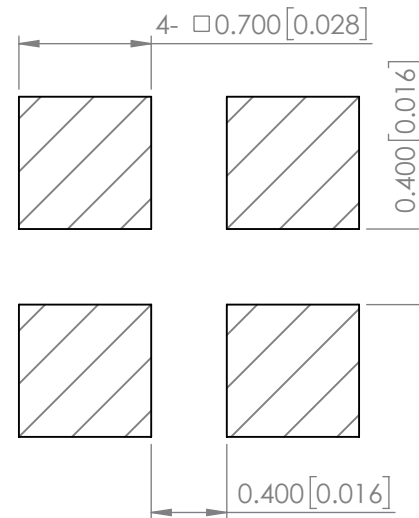


PART NUMBER		SMD-LX0707RGB-TR	REV	E
REV	E.C.N. NUMBER AND REVISION COMMENTS			DATE
A	ECN-Lumex201800131			08.01.18
B	ECN-Lumex201800140			10.02.18
C	ECN-Lumex201800158			10.17.18
D	ECN-Lumex202000005			01.31.20
E	ECN-Lumex202000029			04.28.20

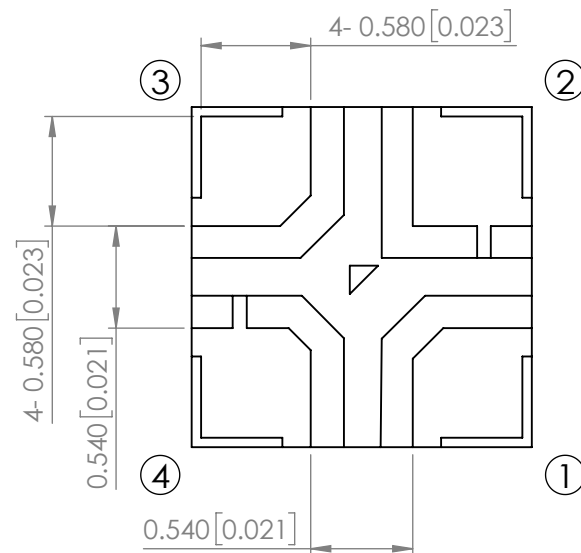


RECOMMENDED SOLDER PAD LAYOUT



ELECTRO-OPTICAL CHARACTERISTIC TA=25°C

PARAMETER		MIN	TYP	MAX	UNITS	TEST COND
SUPPLY VOLTAGE	V _{DD}	-	5	-	V	-
INPUT VOLTAGE(HIGH)	V _{IH}	0.7V _{DD}	-	V _{DD}	V	-
INPUT VOLTAGE(LOW)	V _{IL}	0	-	0.3V _{DD}	V	-
PEAK WAVELENGTH	R	-	630	-	nm	I _f =5mA
	G	-	520	-		
	B	-	470	-		
LUMINOUS INTENSITY	R	72	-	180	mcd	I _f =5mA
	G	180	-	360		
	B	28.5	-	72		
VIEWING ANGLE		-	120	-	2x theta1/2	I _f =5mA
EPOXY LENS FINISH	WATER CLEAR					



PIN ASSIMENT

PIN	SYMBOL	DESCRIPTION
1	DOUT	DATA OUT
2	VDD	POWER VOLTAGE
3	DIN	DATA IN
4	GND	GROUND

ABSOLUTE MAXIMUM RATINGS TA=25°C

PARAMETER		MIN	TYP	MAX	UNITS
SUPPLY VOLTAGE	V _{DD}	-	-	5.5	V
STORAGE TEMPERATURE		-40 TO +90			°C
OPERATING TEMPERATURE		-20 TO +70			°C
SOLDERING TEMPERATURE		3 SEC. MAX. @260			°C

NOTE:

1. RoHS COMPLIANT.
2. COMPLIANCE WITH EU REACH.
3. COMPLIANCE HALOGEN FREE .
(Br <900 ppm , Cl <900 ppm , Br+Cl < 1500 ppm).
4. 2000 PCS/REEL.

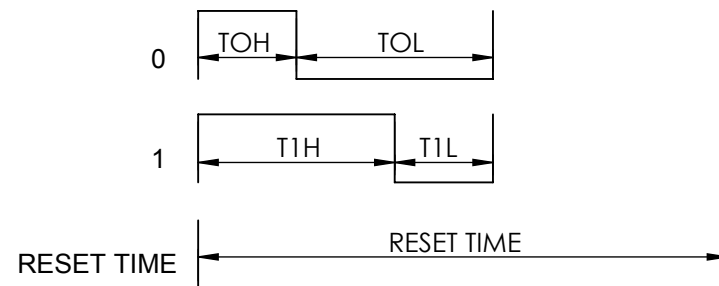
**MOISTURE SENSITIVE DEVICE
PER JEDEC LEVEL 3 STANDARDS**

*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN= ^{+DECIMAL PRECISION}/_{-0.00} MAX= ^{+0.00}/_{-DECIMAL PRECISION}

RECOMMENDED OPERATING CONDITION Ta=-20~70°C , VSS=0V

PARAMETER	MIN	TYP	MAX	UNITS	TEST COND
PROPAGATION DELAY TIME	TPLZ	-	300	ns	DIN→DOUT CL=15pF, RL=10KΩ
FALLING TIME	TTHZ	-	20	us	CL=300pF OUTR/OUTG/OUTB
INPUT CAPACITOR	Tci	-	15	pf	

TIMING WAVE FORM



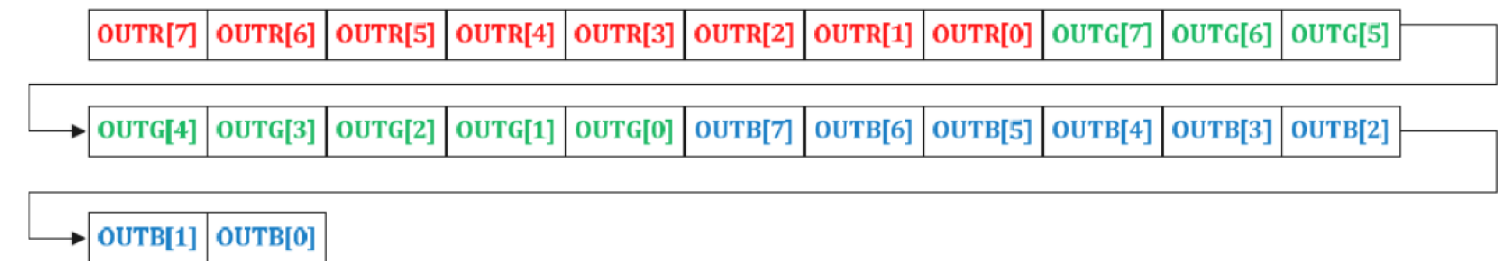
HIGH SPEED MODE

ITEM	DESCRIPTION	TYP.	ALLOWANCE
T0H	0 CODE, HIGH-LEVEL TIME	300ns	±80ns
T0L	0 CODE, LOW-LEVEL TIME	900ns	±80ns
T1H	1 CODE, HIGH-LEVEL TIME	900ns	±80ns
T1L	1 CODE, LOW-LEVEL TIME	300ns	±80ns
RES	RESET TIME	>50us	-

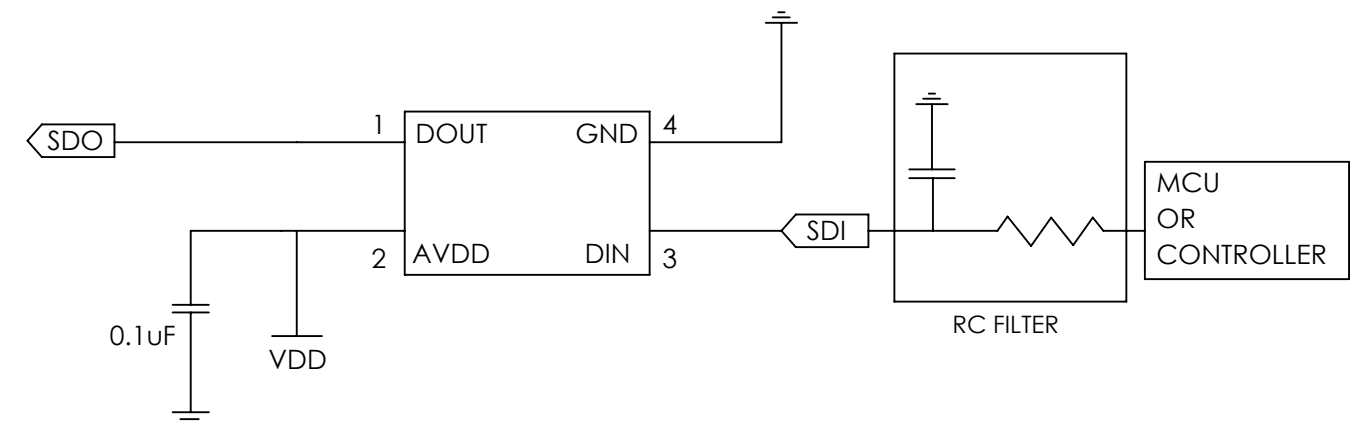
DATA COMMUNICATION



SINGLE DATA IN 24BIT FOR RGB

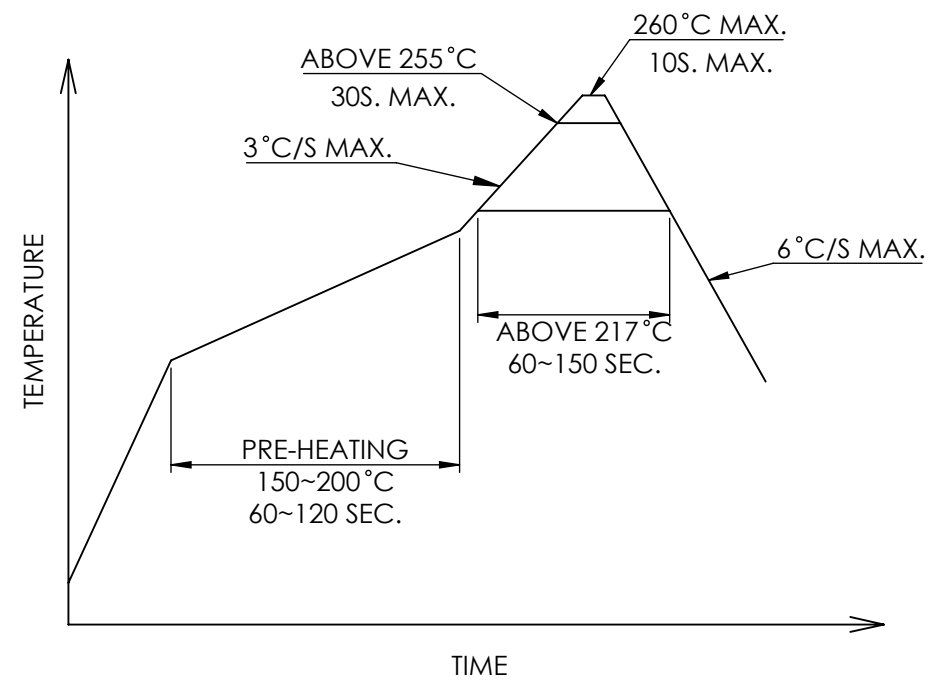


5V APPLICATION CIRCUIT

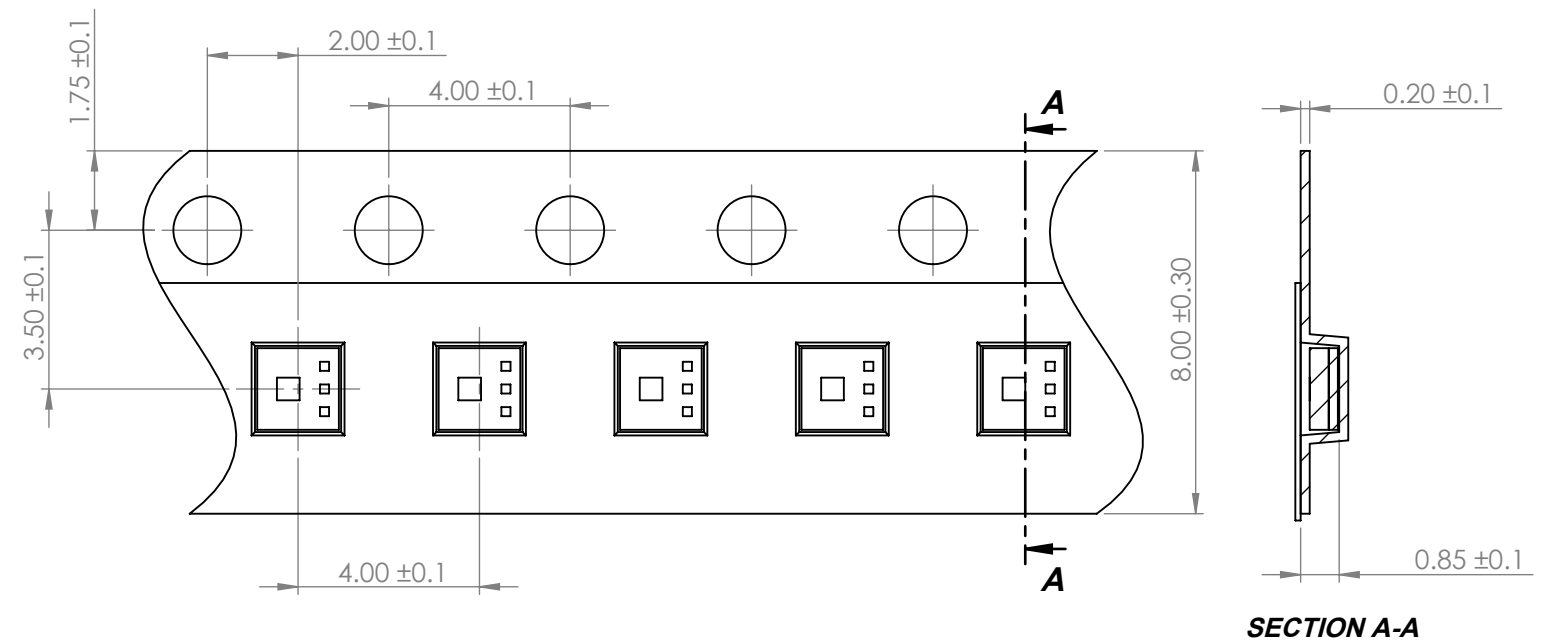


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PROFILE



CARRIER TAPE DIMENSION



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 <p>425 N. GARY AVE. CAROL STREAM, IL 60188 PHONE : 800-278-5666 FAX : 630-315-2150 WEB : WWW.LUMEX.COM</p>	1.8(L)*1.8(W)*0.65(H)mm, SURFACE MOUNT LED, RGB FULL COLOR, 3-CHANNELS LED DRIVER WITH 8 bit PWM LINEAR CONTROL, WATER CLEAR LENS, TAPE & REEL	DATE : 2018.06.29	DRAWN BY : E.C.	
	THE SPECIFICATIONS MAY CHANGE AT ANY TIME WITHOUT NOTICE.	PAGE : 3 OF 4	CHKD BY : E.C.	
	CONFIDENTIAL INFORMATION	SCALE : NTF	APRVD BY : G.Y.	
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EXAMPLE OF USING STM32F030C8T6 TO DISPLAY RED, GREEN AND BLUE IN SEQUENCE

```

/*****/
uint8_t LED_Number_Per_Ring = 60;
uint32_t Ring_0_Display_memory[60];

void Display_One_Dot(uint32_t color);
void Embedded_One(void);
void Embedded_Zero(void);
void Init_GPIOs(void);

void main(void)
{
  Init_GPIOs();
  while (1)
  {
    Ring_0_Display_memory[0] = 0xFF0000;
    Send_Whole_Ring_from_Ring_Memory();
    delay_ms(1000);
    Ring_0_Display_memory[1] = 0x00FF00;
    Send_Whole_Ring_from_Ring_Memory();
    delay_ms(1000);
    Ring_0_Display_memory[2] = 0x0000FF;
    Send_Whole_Ring_from_Ring_Memory();
    delay_ms(1000);
  }
}

```

```

/*****/
void Send_Whole_Ring_from_Ring_Memory(void)
{
  uint8_t j=0;
  uint32_t x,y;
  for (i=0;i<LED_Number_Per_Ring+10;i++)
  {
    y = Ring_0_Display_memory[i];
    for (j=0;j<8;j++)
    {
      x = (y & 0x800000);
      if (x>0)
        Embedded_One();
      else
        Embedded_Zero();
      y = y << 1;
    }
    y = Ring_0_Display_memory[i];
    for (j=0;j<8;j++)
    {
      x = (y & 0x008000);
      if (x>0)
        Embedded_One();
      else
        Embedded_Zero();
      y = y << 1;
    }
  }
  delay_us(80);
}

```

```

/*****/
void Embedded_Zero(void)
{
  GPIO_SetBits(GPIOB,GPIO_Pin_12);
  GPIO_ResetBits(GPIOB,GPIO_Pin_12);
  GPIO_ResetBits(GPIOB,GPIO_Pin_12);
  GPIO_ResetBits(GPIOB,GPIO_Pin_12);
}

/*****/
void Embedded_One(void)
{
  GPIO_SetBits(GPIOB,GPIO_Pin_12);
  GPIO_SetBits(GPIOB,GPIO_Pin_12);
  GPIO_SetBits(GPIOB,GPIO_Pin_12);
  GPIO_ResetBits(GPIOB,GPIO_Pin_12);
}

/*****/
void Init_GPIOs(void)
{
  GPIO_InitTypeDef GPIO_InitStructure;
  RCC_AHBPeriphClockCmd(RCC_AHBPeriph_GPIOB,ENABLE);

  GPIO_InitStructure.GPIO_Pin = GPIO_Pin_12
  GPIO_InitStructure.GPIO_Mode = GPIO_Mode_OUT;
  GPIO_InitStructure.GPIO_OType = GPIO_OType_PP;
  GPIO_InitStructure.GPIO_PuPd = GPIO_PuPd_UP;
  GPIO_InitStructure.GPIO_Speed = GPIO_Speed_50MHz;
  GPIO_Init(GPIOB, &GPIO_InitStructure);
}

```

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SCALE : NTF

APRVD BY : G.Y.

UNIT : mm [INCH]

(Pb)