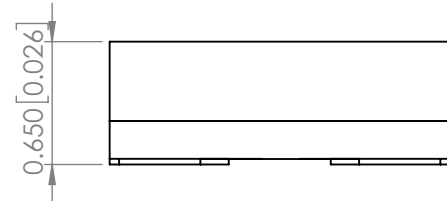
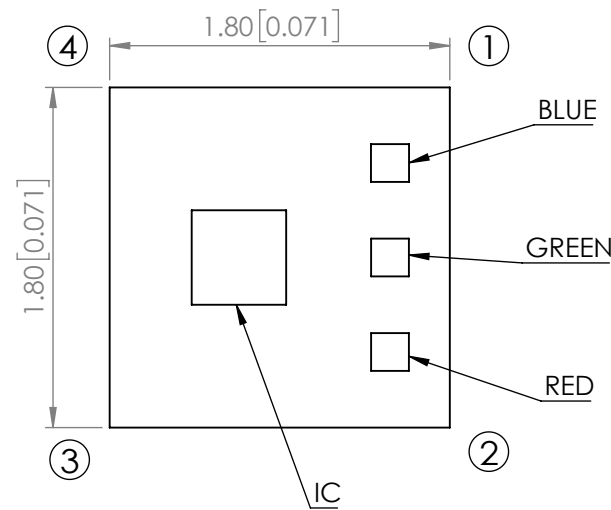
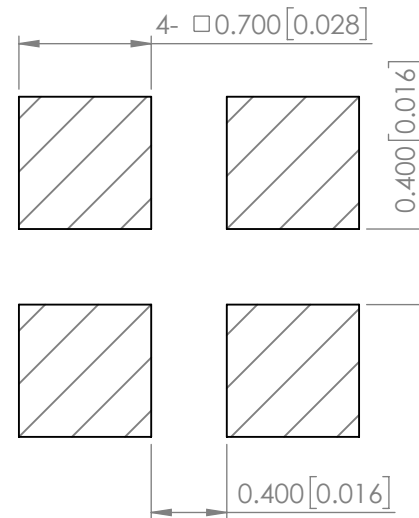


<b>PART NUMBER</b>		SMD-LX0707RGB-TR	<b>REV</b>	E
<b>REV</b>	<b>E.C.N. NUMBER AND REVISION COMMENTS</b>			<b>DATE</b>
A	ECN-Lumex201800131			08.01.18
B	ECN-Lumex201800140			10.02.18
C	ECN-Lumex201800158			10.17.18
D	ECN-Lumex202000005			01.31.20
E	ECN-Lumex202000029			04.28.20

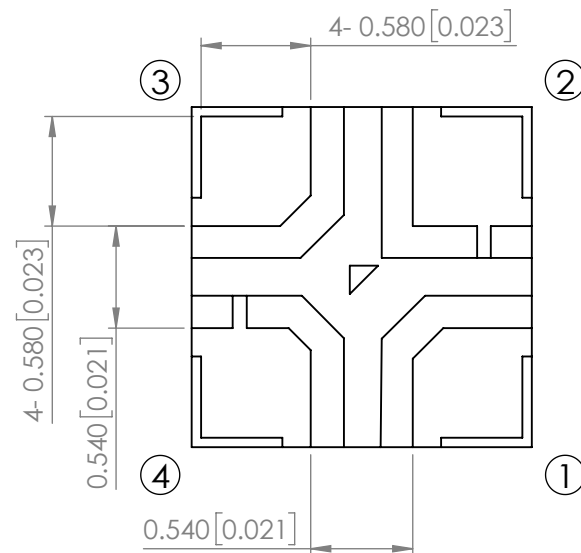


**RECOMMENDED SOLDER PAD LAYOUT**



**ELECTRO-OPTICAL CHARACTERISTIC TA=25°C**

PARAMETER		MIN	TYP	MAX	UNITS	TEST COND
<b>SUPPLY VOLTAGE</b>	V <sub>DD</sub>	-	5	-	V	-
<b>INPUT VOLTAGE(HIGH)</b>	V <sub>IH</sub>	0.7V <sub>DD</sub>	-	V <sub>DD</sub>	V	-
<b>INPUT VOLTAGE(LOW)</b>	V <sub>IL</sub>	0	-	0.3V <sub>DD</sub>	V	-
<b>PEAK WAVELENGTH</b>	R	-	630	-	nm	I <sub>f</sub> =5mA
	G	-	520	-		
	B	-	470	-		
<b>LUMINOUS INTENSITY</b>	R	72	-	180	mcd	I <sub>f</sub> =5mA
	G	180	-	360		
	B	28.5	-	72		
<b>VIEWING ANGLE</b>		-	120	-	2x theta1/2	I <sub>f</sub> =5mA
<b>EPOXY LENS FINISH</b>	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
<b>SUPPLY VOLTAGE</b>	V <sub>DD</sub>	-	-	5.5	V
<b>STORAGE TEMPERATURE</b>		-40 TO +90			°C
<b>OPERATING TEMPERATURE</b>		-20 TO +70			°C
<b>SOLDERING TEMPERATURE</b>		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.

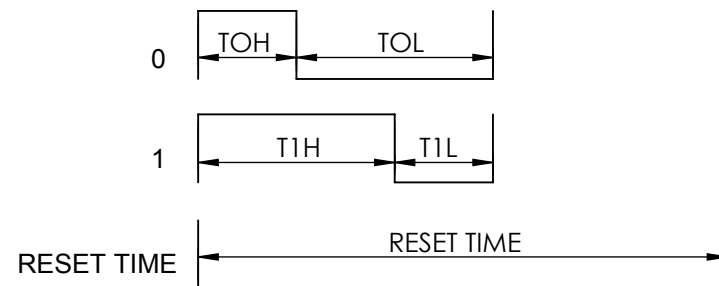
**MOISTURE SENSITIVE DEVICE  
PER JEDEC LEVEL 3 STANDARDS**

\*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= <sup>+DECIMAL PRECISION</sup>/<sub>-0.00</sub> MAX= <sup>+0.00</sup>/<sub>-DECIMAL PRECISION</sub>

**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**



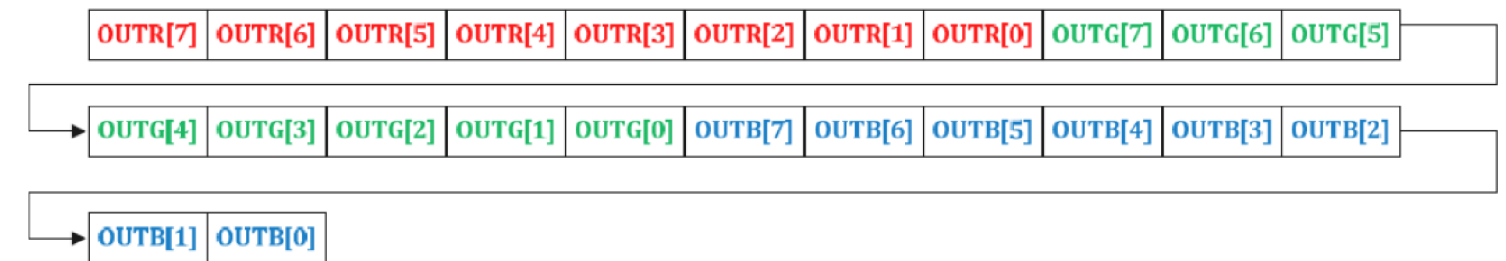
**HIGH SPEED MODE**

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	-

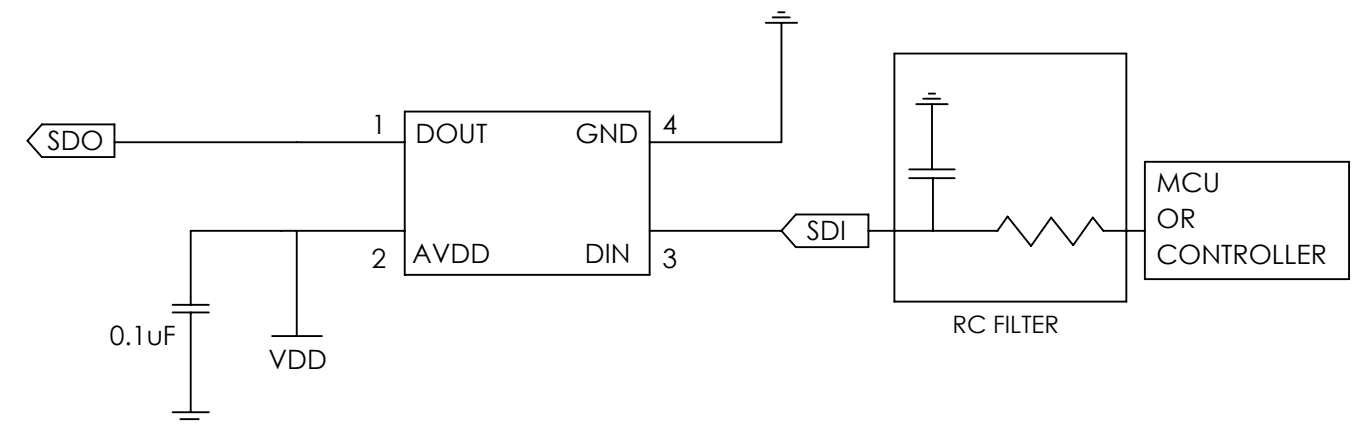
**DATA COMMUNICATION**



**SINGLE DATA IN 24BIT FOR RGB**

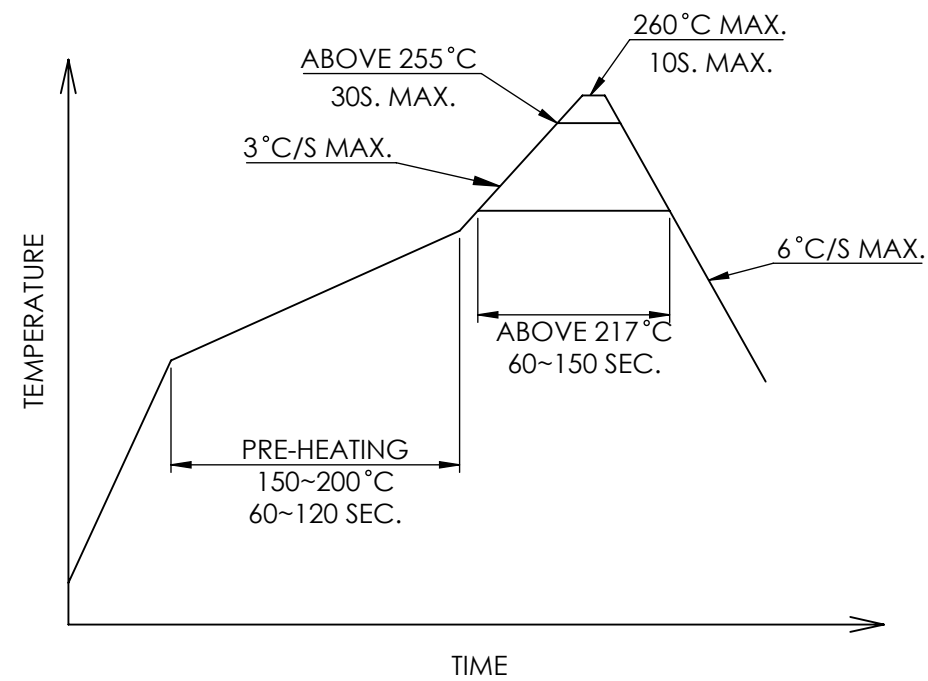


**5V APPLICATION CIRCUIT**

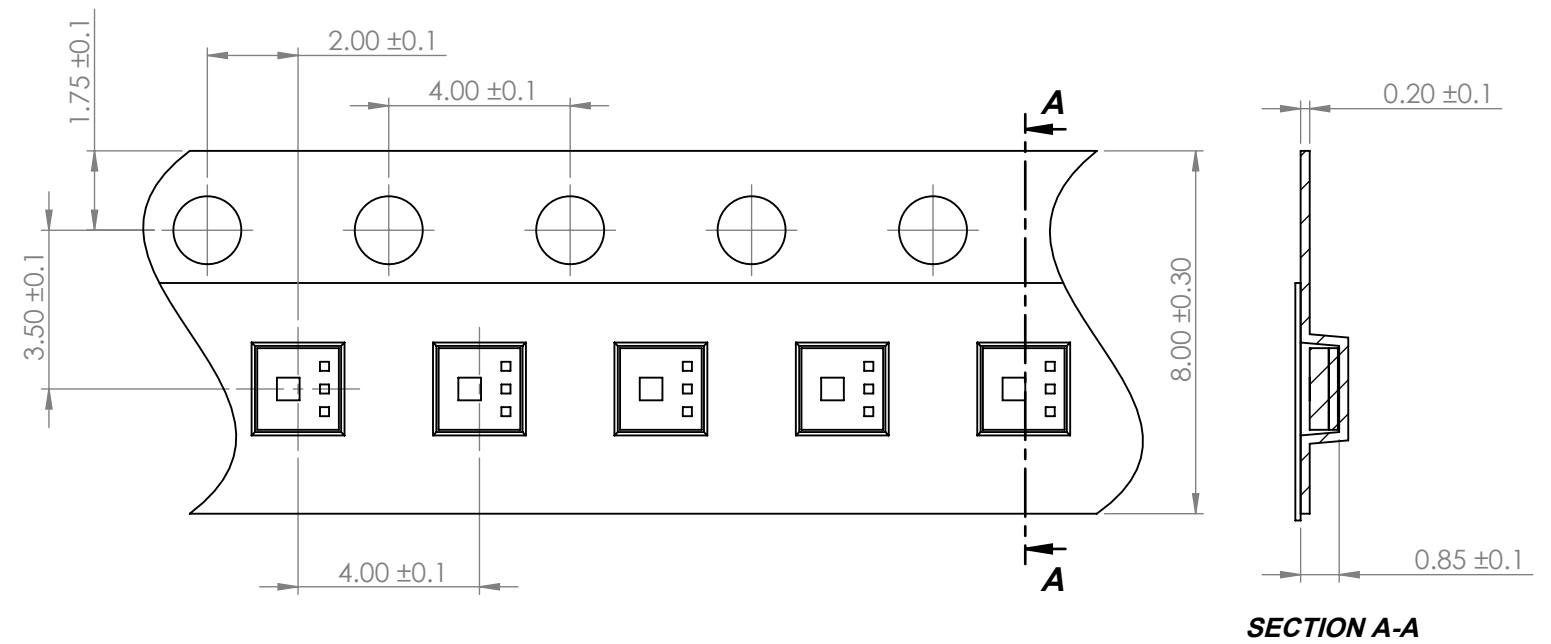


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**PROFILE**



**CARRIER TAPE DIMENSION**



\*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= <sup>+DECIMAL PRECISION</sup>/<sub>-0.00</sub> MAX.= <sup>+0.00</sup>/<sub>-DECIMAL PRECISION</sub>

 <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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DATE : 2018.06.29

DRAWN BY : E.C.

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PAGE : 4 OF 4

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SCALE : NTF

APRVD BY : G.Y.

UNIT : mm [INCH]

(Pb)