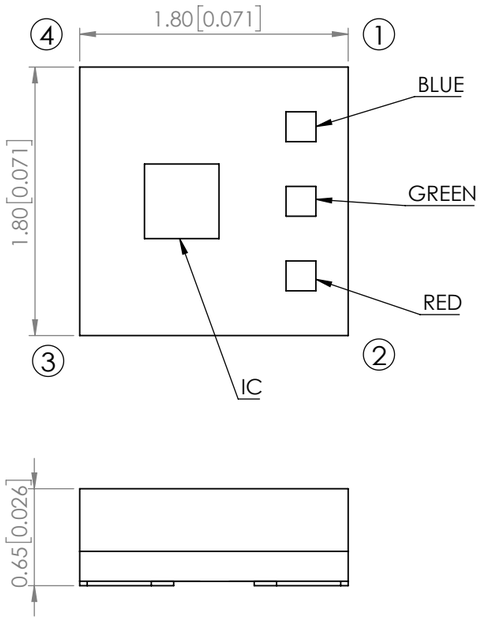
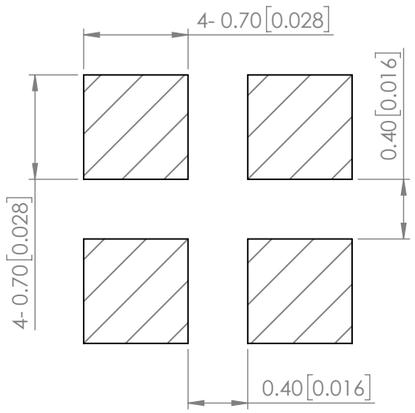
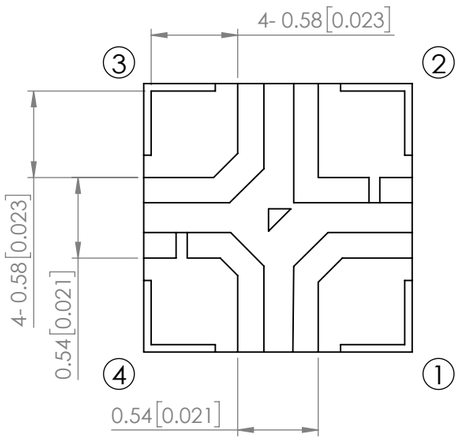
PART NUMBER	SMD-LX0707RGB-TR	REV	D

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



RECOMMENDED SOLDER PAD LAYOUT





PIN ASSIMEMT

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

ELECTRO-OPTICAL CHARACTERISTIC TA=25℃

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	If=5mA
	G		520			
	B		470			
LUMINOUS INTENSITY	R	72	-	180	mcd	If=5mA
	G	180	-	360		
	B	28.5	-	72		
VIEWING ANGLE		-	120	-	2x theta1/2	If=5mA
EPOXY LENS FINISH		WATER CLEAR				

ABSOLUTE MAXIMUM RATINGS TA=25℃

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

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

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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

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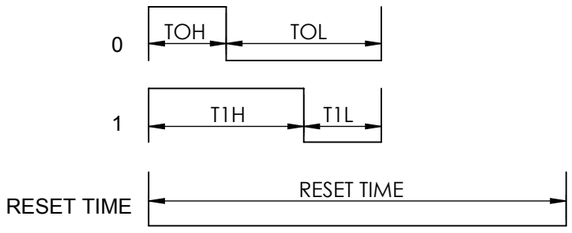
SCALE : NTF	APRVD BY : G.Y.
UNIT : mm [INCH]	Pb

RECOMMENDED OPERATING CONDITION Ta=-20~70℃，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

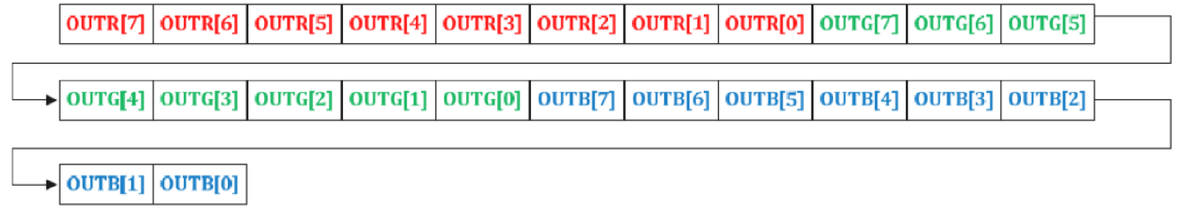


HIGH SPEED MODE

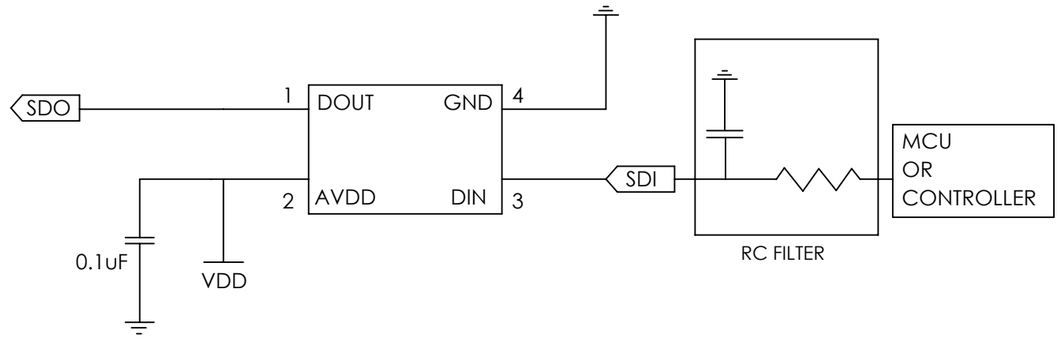
ITEM	DESCRIPTION	TYP.	ALLOWANCE
T0H	0 CODE, HIGH-LEVEL TIME	300ns	±80ns
T0L	0 CODE, LOW-LEVEL TIME	900ns	±80ns
T1H	1 CODE, HIGH-LEVEL TIME	900ns	±80ns
T1L	1 CODE, LOW-LEVEL TIME	300ns	±80ns
RES	RESET TIME	>50us	-

DATA COMMUNICATIOM

SINGLE DATA IN 24BIT FOR RGB



5V APPLICATION CIRCUIT



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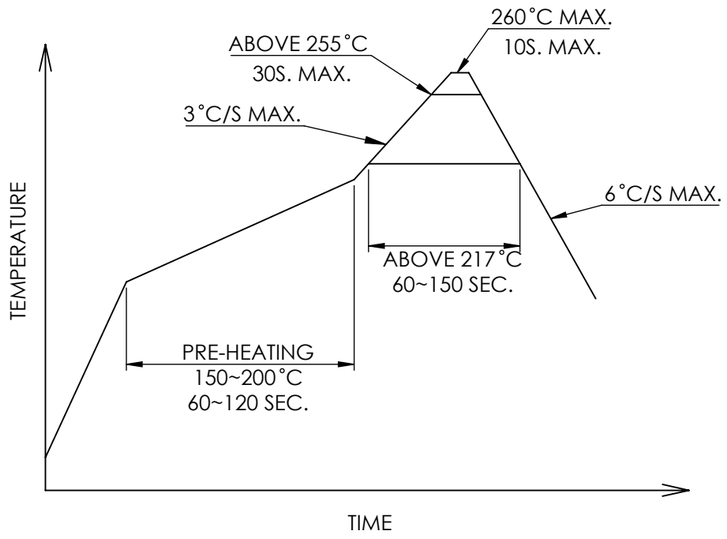
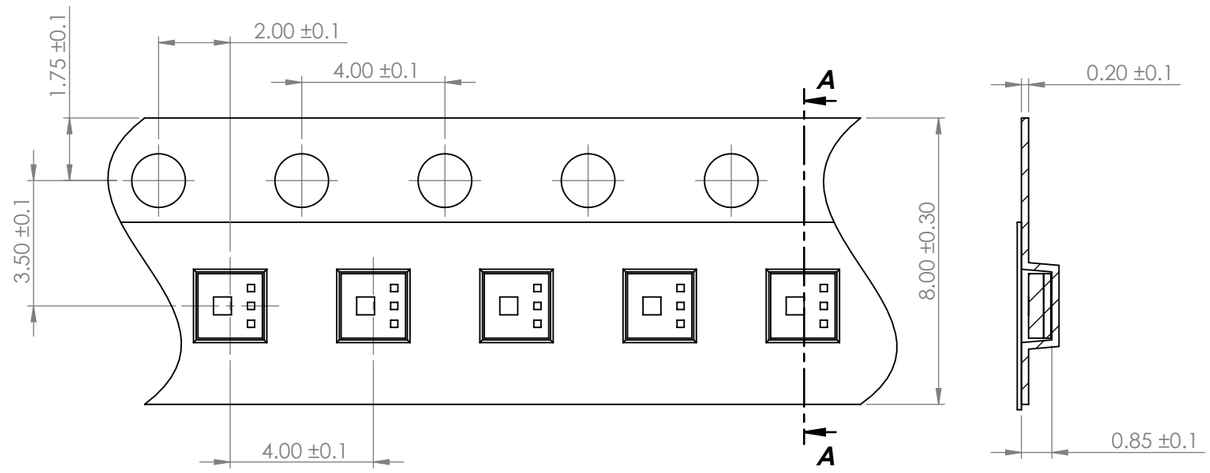
UNIT： mm [INCH]	Pb

PROFILE



CARRIER TAPE DIMENSION



SECTION A-A

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UNIT : mm [INCH]	Pb

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 Embeded_One(void);
void Embeded_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)
       Embeded_One();
      else
       Embeded_Zero();
      y = y << 1;
     }
    y = Ring_0_Display_memory[i];
    for (j=0;j<8;j++)
     {
      x = (y & 0x008000);
      if (x>0)
       Embeded_One();
      else
       Embeded_Zero();
      y = y << 1;
     }
    y = Ring_0_Display_memory[i];
    for (j=0;j<8;j++)
     {
      x = (y & 0x000080);
      if (x>0)
       Embeded_One();
      else
       Embeded_Zero();
      y = y << 1;
     }
   }
  delay_us(80);
}
```

```
/*****************************************************************************/
void Embeded_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 Embeded_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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