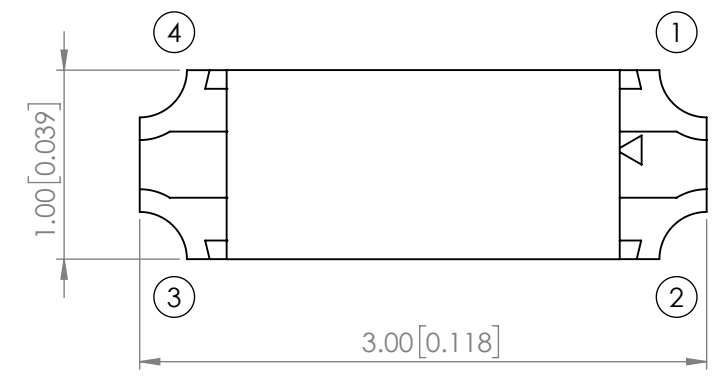




**THE DATASHEET OF
SMD-LXR1204RGBC-TR**



PART NUMBER	SMD-LXR1204RGB-C-TR	REV	A
REV	E.C.N. NUMBER AND REVISION COMMENTS	DATE	
A	ECN-Lumex201900134	10.14.19	
B	ECN-Lumex200100036	07.01.21	

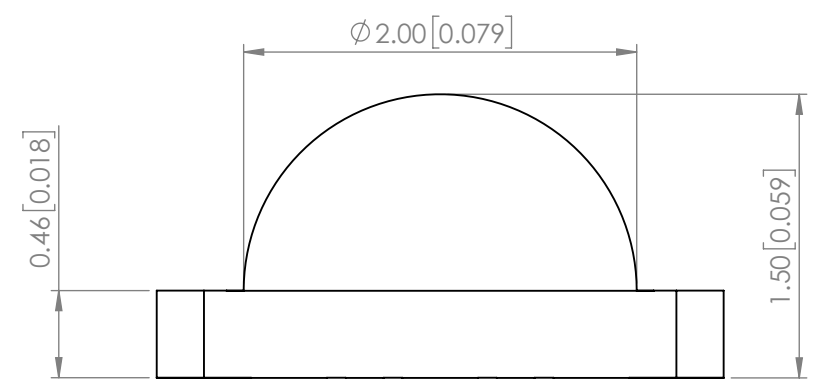


PIN ASSIGNMENT

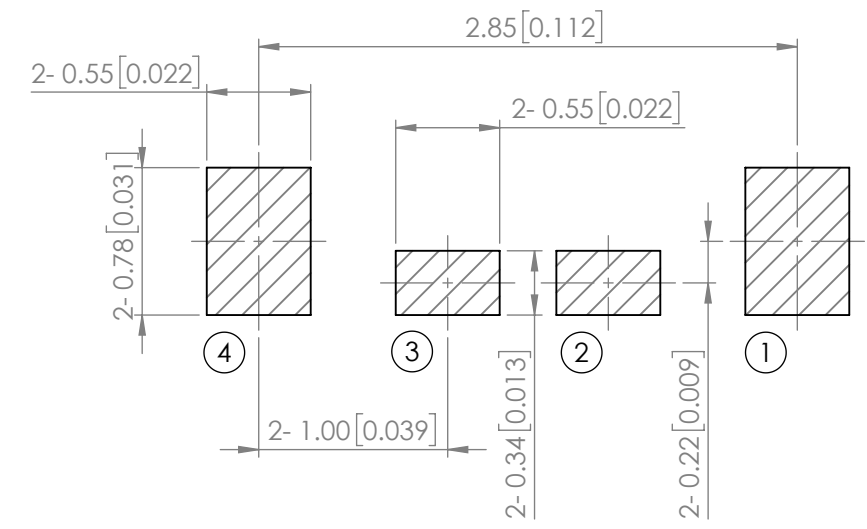
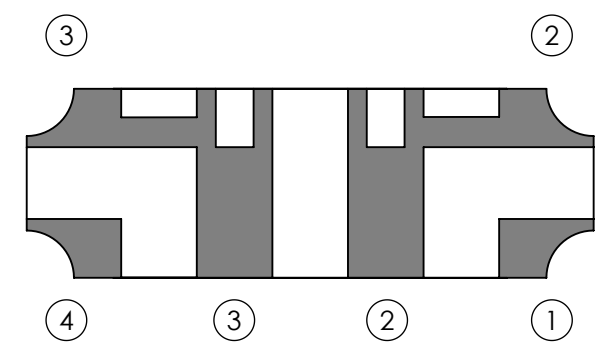
PIN NO	SYMBOL	DEFINITION
1	DIN	DATA IN
2	GND	GROUND
3	DOUT	DATA OUT
4	AVDD	POWER VOLTAGE

ELECTRO-OPTICAL CHARACTERISTIC TA=25°C

PARAMETER	MIN	TYP	MAX	UNITS	TEST COND
SUPPLY VOLTAGE	VDD	-	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
	G	-	520	-	
	B	-	470	-	
LUMINOUS INTENSITY	R	-	47	-	mcd
	G	-	92	-	
	B	-	38	-	
VIEWING ANGLE	-	130	-	2x theta1/2	-
EMITTED COLOR	RED / GREEN / BLUE				
EPOXY LENS FINISH	WATER CLEAR				



RECOMMENDED SOLDER PAD LAYOUT



ABSOLUTE MAXIMUM RATINGS TA=25°C

PARAMETER	MAX	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

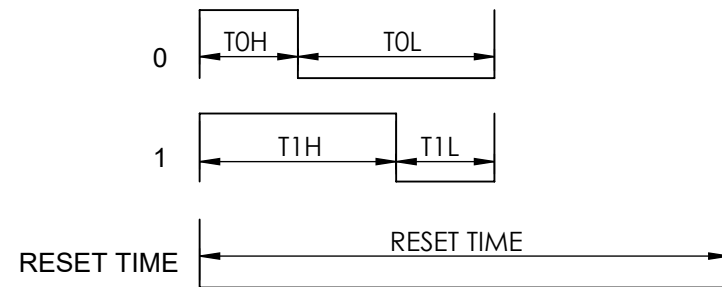
MOISTURE SENSITIVE DEVICE
PER JEDEC LEVEL 3 STANDARDS

*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	CI	-	-	15	pf	

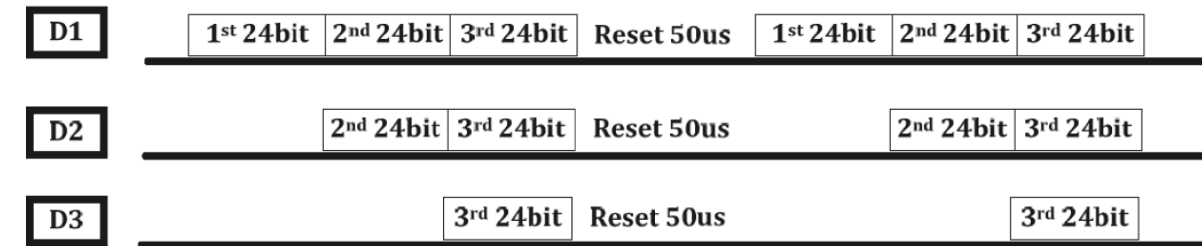
TIMING WAVE FORM



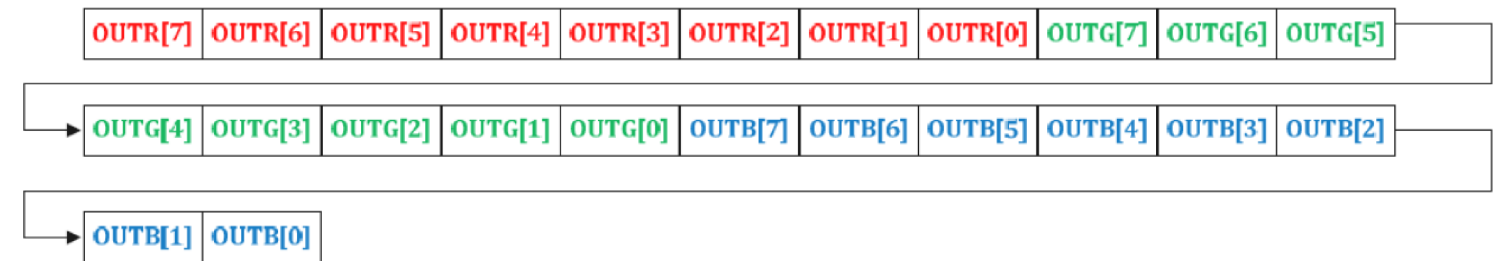
HIGH SPEED MODE

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	-

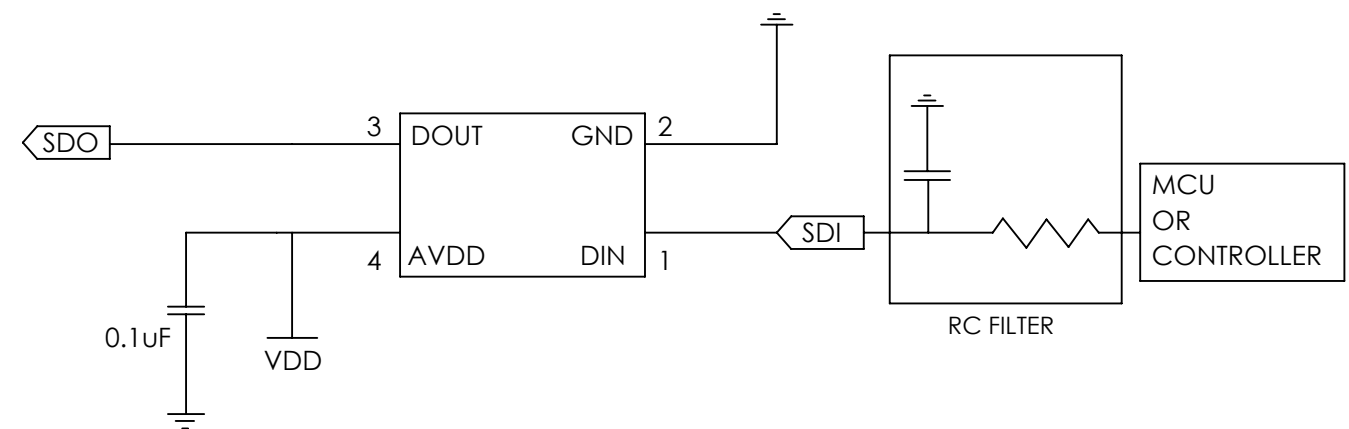
DATA COMMUNICATION



SINGLE DATA IN 24BIT FOR RGB

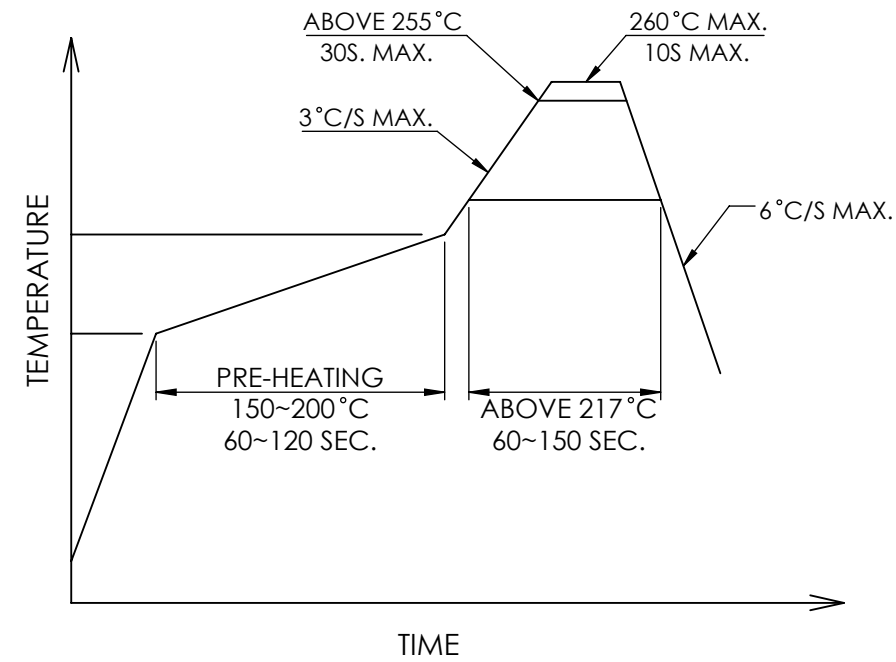


5V APPLICATION CIRCUIT

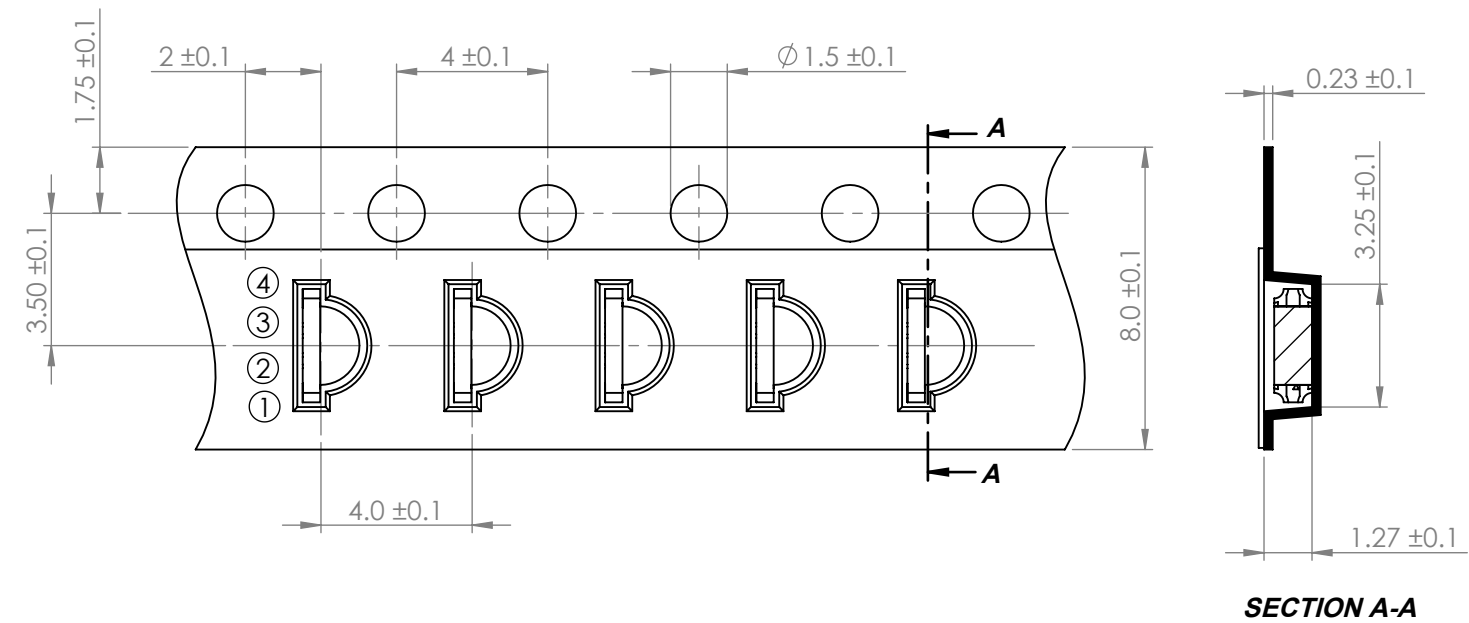


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PROFILE




CARRIER TAPE DIMENSION



NOTE:
1. 2000 PCS/REEL

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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>	3.0(L)*1.0(W)*1.5(H)mm, SURFACE MOUNT SIDE VIEW LED, RGB FULL COLOR, 3-CHANNELs LED DRIVER WITH 8 bit PWM LINEAR CONTROL, WATER CLEAR LENS, TAPE & REEL.	DATE : 2019.03.04	DRAWN BY : C.C.	
	THE SPECIFICATIONS MAY CHANGE AT ANY TIME WITHOUT NOTICE.	PAGE : 3 OF 4	CHKD BY : E.C.	
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EXAMPLE OF USING STM32F030C8T6 TO DISPLAY RED, GREEN AND BLUE IN SEQUENCE

```

/*****/
uint32_t color;
void Display_One_Dot(uint32_t color);
void Send_Hi(void);
void Send_Lo(void);
void Init_GPIOs(void);
void main(void)
{
  Init_GPIOs();
  while (1)
  {
    color = 0xFF0000;
    Display_One_Dot(color);
    delay_ms(1000);
    color = 0x00FF00;
    Display_One_Dot(color);
    delay_ms(1000);
    color = 0x0000FF;
    Display_One_Dot(color);
    delay_ms(1000);
  }
}
/*****/
void Display_One_Dot(uint32_t color)
{
  uint8_t j=0;
  uint32_t x,y;
  y = color;
  for (j=0;j<24;j++)
  {
    x = (y & 0x800000);
    if (x>0)
      Send_Hi();
    else
      Send_Lo();
    y = y << 1;
  }
}


```

```

/*****/
void Send_Lo(void)
{
  GPIO_SetBits(GPIOB,GPIO_Pin_8);
  GPIO_ResetBits(GPIOB,GPIO_Pin_8);
  GPIO_ResetBits(GPIOB,GPIO_Pin_8);
  GPIO_ResetBits(GPIOB,GPIO_Pin_8);
}
/*****/
void Send_Hi(void)
{
  GPIO_SetBits(GPIOB,GPIO_Pin_8);
  GPIO_SetBits(GPIOB,GPIO_Pin_8);
  GPIO_SetBits(GPIOB,GPIO_Pin_8);
  GPIO_ResetBits(GPIOB,GPIO_Pin_8);
}
/*****/
void Init_GPIOs(void)
{
  GPIO_InitTypeDef GPIO_InitStructure;
  RCC_AHBPeriphClockCmd(RCC_AHBPeriph_GPIOB,ENABLE);
  GPIO_InitStructure.GPIO_Pin = GPIO_Pin_8 ;
  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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