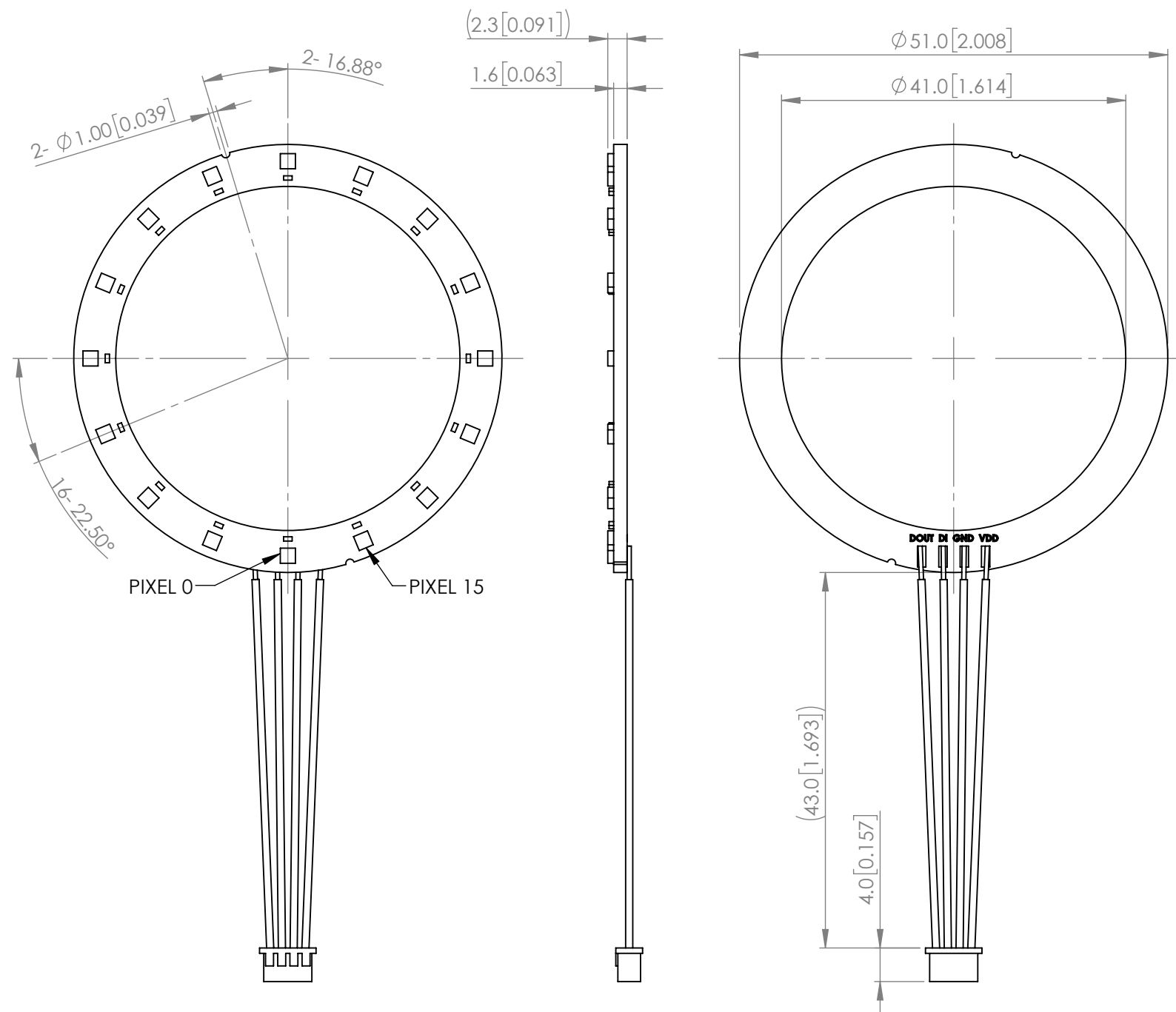




ELECTRO-OPTICAL CHARACTERISTIC TA=25°C

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 (PER DOT)	R	-	630	-	nm	If=5mA
	G	-	520	-		
	B	-	470	-		
LUMINOUS INTENSITY (PER DOT)	R	72	-	180	mcd	If=5mA
	G	180	-	360		
	B	28.5	-	72		
POWER CONSUMPTION		-	-	1.2	W	-
VIEWING ANGLE (PER DOT)		-	120	-	2x theta1/2	If=5mA
EPOXY LENS FINISH		WATER CLEAR				

*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= ^{+0.00} _{-0.00} DECIMAL PRECISION MAX= ^{+0.00} _{-0.00} DECIMAL PRECISION



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ez RING SERIES, $\phi 51(\phi 41) \times 2.3$, 16 DOT RGB LEDs, DC 5V.

****THE SPECIFICATIONS MAY CHANGE AT ANY TIME WITHOUT NOTICE.****

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DATE : 2018.10.04

DRAWN BY : C.C.

PAGE : 1 OF 3

CHKD BY : E.C.

SCALE : NTF

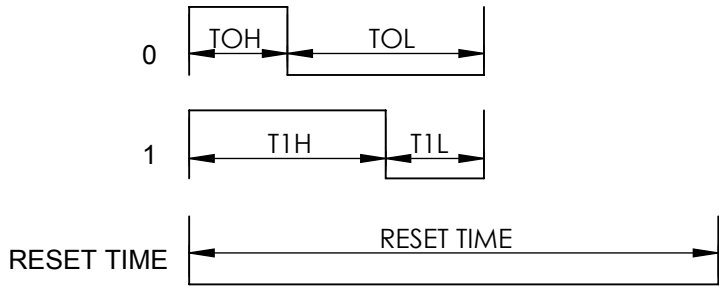
APRVD BY : G.Y.

UNIT : mm [INCH]

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	

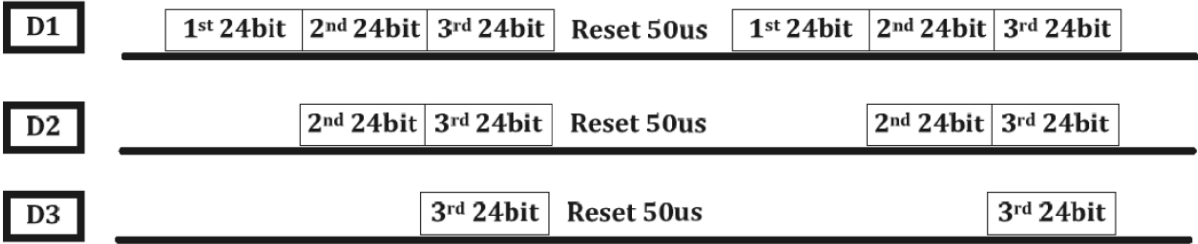
TIMING WAVE FORM



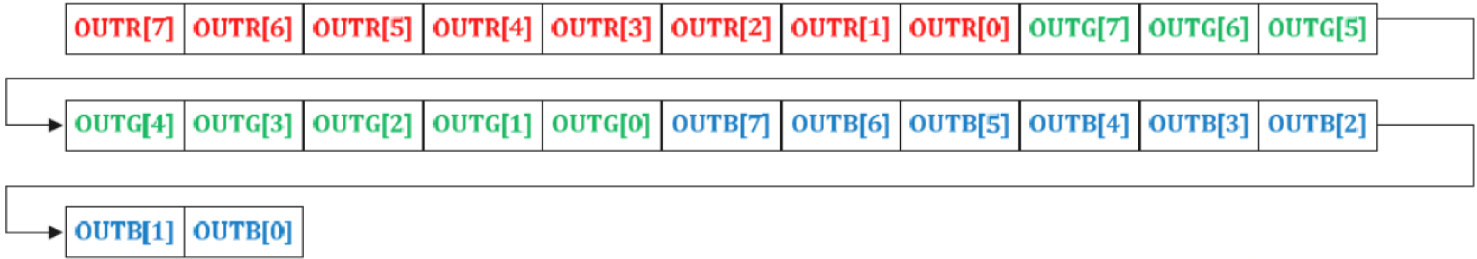
HIGH SPEED MODE

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 COMMUNICATION



SINGLE DATA IN 24BIT FOR RGB



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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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