Customer's Name

TO.

DESIGN	CHECK	APPROVAL

Approval Sheet

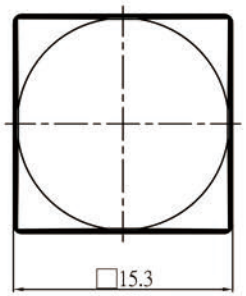
PART PLB-N1PRGB-ATW-AI

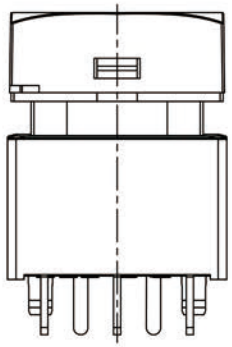
CONTENTS	
DESCRIPTION	**CUSTOMER'S APPROVAL**
Assembled Drawing	
Specification	
LED sheet	

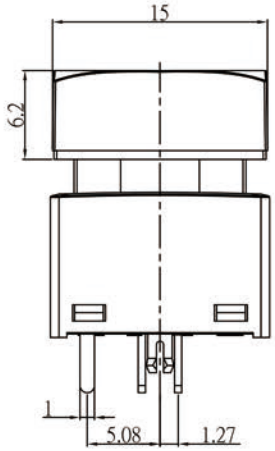
Tel: (86)755-2942 4722
F x:(86)755-2942 4733

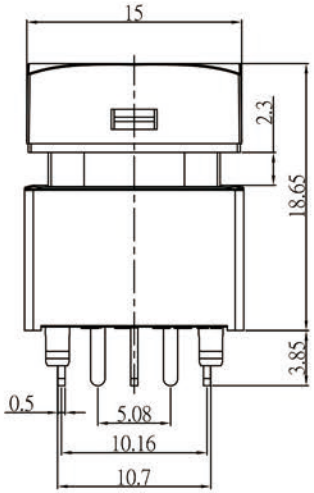
DIMENSION	TOLERANCE
≤10	±0.3
10~100	±0.5
≥100	±0.8

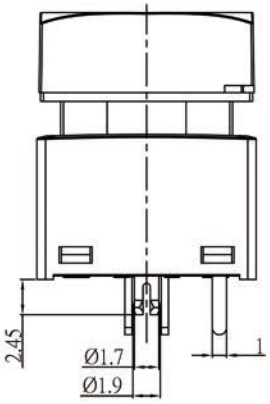
PIN TYPE	
COM	SW Terminal 1
NO	SW Terminal 2
NC	SW Terminal 3
VDD	V_{DD}[Power]
DI	DI[Data In]
DO	DO[Data Out]
GND	GND[Gorund]

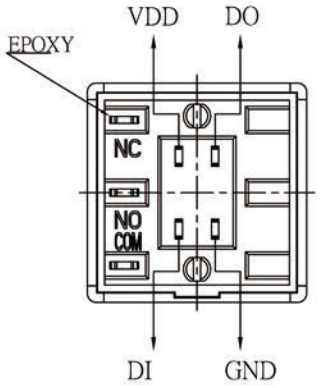




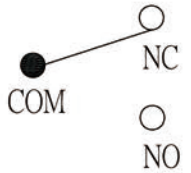








1. RATING : 28 V DC , 0.4A MAX.
2. CONTACT RESISTANCE : 100 mΩ, MAX .
3. INSULATION RESISTANCE : DC 500 V / 100 MΩ, MIN .
4. WITHSTAND VOLTAGE : AC 500 V / 1 MINUTE.
5. OPERATING TEMPERATURE : -25℃ ~ 70℃ .
6. OPERATING FORCE : 200±100 gf .
7. LIFE CYCLE: 200,000 CYCLES .

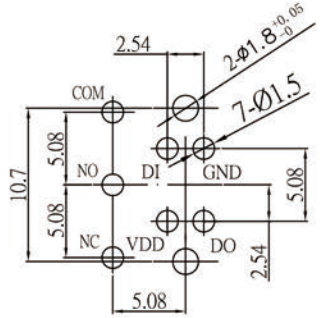


SW CIRCUIT

"IC CONTROL"

"RGB LED"

LED TYPE



PCB LAYOUT

						UNIT	SCALE	ANGLE TER	VIEW	MODE
V0	2015/11/15	JOHNSON	ALEN	MIKE	ORIGINAL DESIGN	mm	1 : 1	± 3°		PUSH SWITCH WITH LED
VER	DATE	APPROVAL	CONFIRM	DESIGN	ENGINEERING RECORD DESCRIPTION	PLB-N1PRGB-ATW-AI				

WWW.SZLAKEVIEW.COM
ELECTRONICS CO., LTD
Tel: (86)755-29424722/29424733

1. 一般特性 General Characteristics

1.1 额定值(Rating Value)： DC28V 0.4A.

1.2 工作温度(Work Temperature Range)： -25℃ ~ 70℃

1.3 存贮温度(Store Temperature Range)： -25℃ ~ 80℃

1.4 正常测试条件(未有特殊说明量测在以下条件进行)：

General test condition (Tests and measurements shall be made under the following standard conditions unless otherwise specified):

正常温度：5℃~35℃ 相对湿度：45%~85% RH 气 压：8,600~10,600 帕

Temperature: 5℃~35℃ Relative humidity: 45%~85% Air pressure: 8,600~10,600 pa

2. 产品外观及尺寸要求 Appearance & Dimension Requirement

2.1 产品外形结构紧凑,无配合不良.

The structure of product is compact, and assembly of parts has no badness.

2.2 产品塑胶部件无严重缩水、披锋、欠注、斑点、破损或变形现象.

The plastic parts of product have no serious defects such as very serious shrink, scarcity, fleck, disrepair, transmutation, etc.

2.3 产品引脚和外壳无严重氧化、脏污、变形、毛刺或电镀不良.

Lead feet and shell have no serious defects such as oxidation, smudge, disrepair, burr, defects on plating.

2.4 开关操作顺畅,节奏感强,无明显卡塞现象,(自锁开关锁芯锁住后,允许导芯倾斜正负 2°)

Operating switch is unhindered, rhythmed , and there is not palpable clag.(After the keystoke is locked, it is normal that the keystoke tilt to one side plus or minus 2 °)

2.5 产品结构及尺寸参见产品规格图纸。

Construction and dimensions：Refer to individual product drawing.

3. 电气特性 Electronic Characteristics

No.	项 目 Item	测试方法 Test Method	测试设备 Equipment	特性要求 Requirements
3.1	接触电阻 Contact Resistance	在低电流（≤100mA）条件下测试. Measured at low current (100mA or less).	低电阻测试仪 Low Resistance Meter	100mΩ max
3.2	绝缘阻抗 Insulation Resistance	测试相邻引脚之间,引脚与外壳之间的绝缘阻抗(DC 500V). Measurement shall be made between adjacent terminals, between terminal and shell(DC 500V).	绝缘测试机 Insulation Resistance Tester	100MΩ min
3.3	耐压测试 Dielectric Withstand Voltage	输入一定电压(50-60Hz,电压值AC 500V)1 分钟,漏电流为 2mA,测试邻近端子间. Apply certain voltage (50-60Hz, AC 500V) for 1 minute between adjacent contacts of the connector with 2mA leakage sensitivity.	耐压测试机 Puncture Tester	没有绝缘破坏.电弧等异常. No arcing , break down and damaging insulation.

1. Characteristic Parameter of RGB IC:

Color	Wave Length(nm)	Luminous Intensity(mcd)	Luminous Flux(lm)
Red	620-625	300-500	1.0-1.5
Green	515-530	1000-1500	3.0-4.0
Blue	460-470	200-400	0.5-1.0

2. Electric Parameter (Absolute rating, Ta=25℃,VSS=0V) :

Parameter	Symbol	Range	Unit
Voltage	V_{DD}	+3.5～+5.5	V
Logic Input Voltage	V_I	-0.5～VDD+0.5	V
Operating Temperature	Topt	-40~+85	℃
Storage Temperature	Tstg	-50~+150	℃
ESD Withstanding Voltage (Device Mode)	V_{ESD}	200	V
ESD Withstanding Voltage (Human Body Mode)	V_{ESD}	4K	V

3. Electric Parameter (Generally TA=-20～+70℃, VDD=4.5～5.5V,VSS=0V) :

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Power Voltage Inside IC	V_{DD}	---	5.2	---	V	---
R/G/B Port Withstanding Voltage	$V_{DS,MAX}$	---	---	26	V	---
DOUT Drive Capability	ID_{OH}	---	49	---	mA	DOUT grounds, Max Driving Current
	ID_{OL}	---	-50	---	mA	DOUT connects anode, Max current
Rollover Threshold of Input Signal	V_{IH}	3.4	---	---	V	VDD=5.0V
	V_{IL}	---	---	1.6	V	
PWM Frequency	F_{PWM}	---	1.2	---	KHZ	---
Quiescent Dissipation	I_{DD}	---	1	---	mA	---

4. Dynamic Parameter（Ta=25℃）：

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Data Transmission Rate	fDIN	---	800	---	KHZ	Duty Ratio 67%（Data 1）
DOUT Transmission Delay	T_{PLH}	---	---	500	ns	DIN→DOUT
	T_{PHL}	---	---	500	ns	
I_{out} Rise time	T_r	---	100	---	ns	V_{DS}=1.5V I_{OUT}=13mA
	T_f	---	100	---	ns	

5. Data Transmission Time:

Name of Timing Table		Min.	Actual Value	Max.	Unit
T	Element Cycle	1.20	--	--	μs
T0H	0, high level time	0.2	0.32	0.4	μs
T0L	0, low level time	0.8	0.88	1.0	μs
T1H	1, high level time	0.64	0.65	1.0	μs
T1L	1, low level time	0.2	0.55	0.56	μs
Trst	Reset, low level time	>80	--	--	μs

5.1 协议采用单极性归零码，每个码元必须有低电平，本协议的每个码元起始为高电平，高电平　时间宽度决定“0”码或“1”码。

5.2 书写程序时，码元周期最低要求为 1.2μs。

5.3 “0”码、 “1”码的高电平时间需按照上表的规定范围， “0”码、 “1”码的低电平 时间要求小于 20μs.

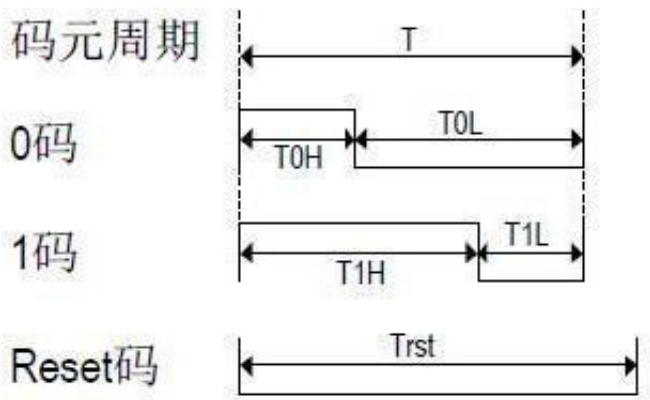
5.1 UNI-RZ(Unipolar Return-to-zero) is applied. There must be low level in each code element. In this agreement, each code element starts form high level, whose time width depends 0 code or 1 code.

5.2 Min element cycle would be 1.2μs when coding.

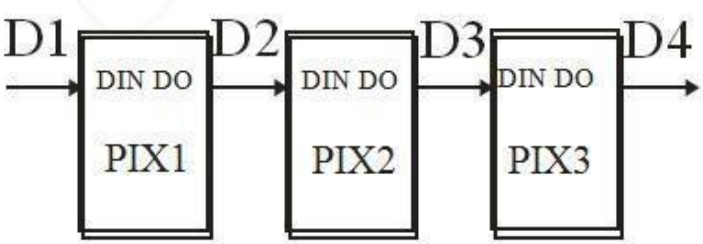
5.3 The high level time of 0 code and 1 code should be on the basis of the chart above. The low level time of 0 code and 1 code are required to be less than 20μs.

6. Timing Waveform（Ta=25℃）: Input Code Pattern：

Element Cycle

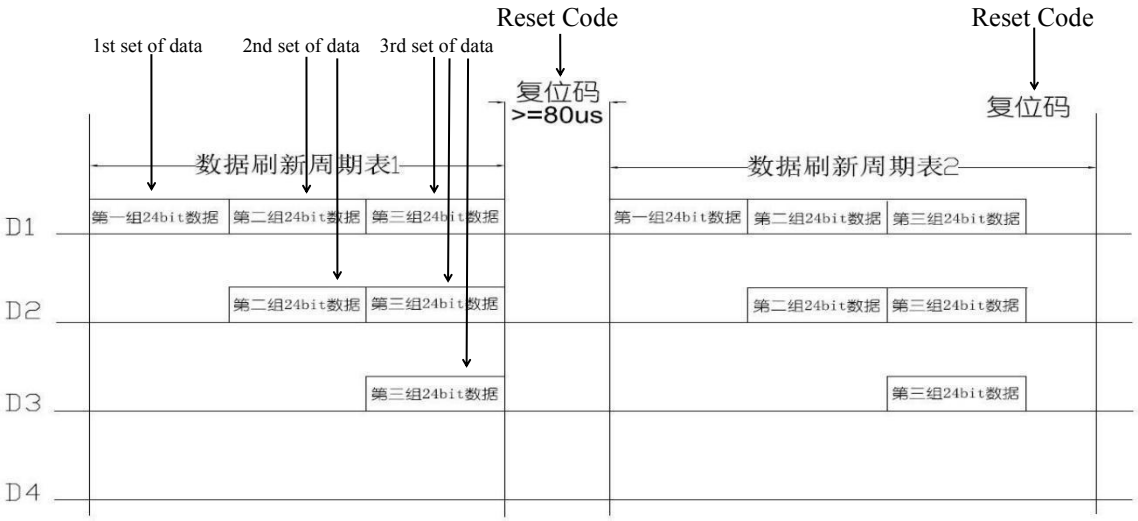


Connection Mathod 连接方式：



P.S: D1 is the data sent from MCU port, D2, D3, D4 are data automatically shaping forwarded by cascade circuit.

7. Data Transmission Method（Ta=25℃）：



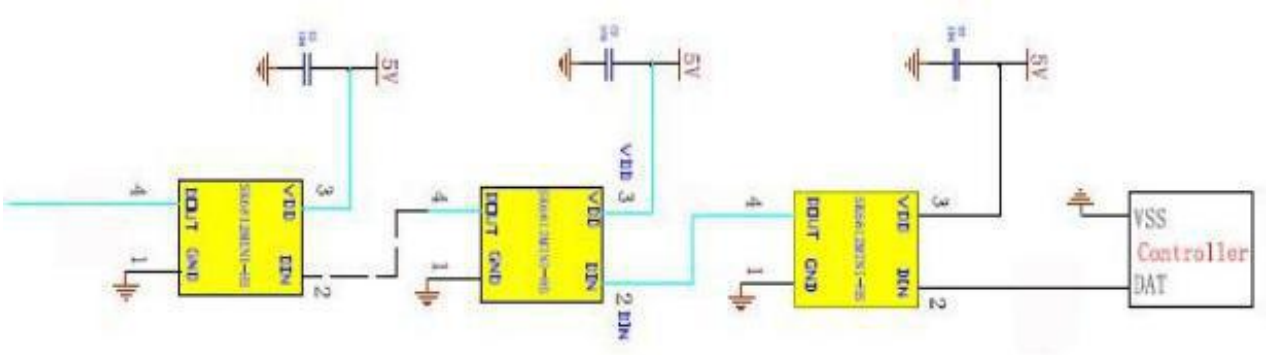
P.S: D1 is the data sent from MCU port, D2, D3, D4 are data automatically shaping forwarded by cascade circuit.

8. 24bit Data Structure（Ta=25℃）：

G7	G6	G5	G4	G3	G2	G1	G0	R7	R6	R5	R4
R3	R2	R1	R0	B7	B6	B5	B4	B3	B2	B1	B0

High level first，sending data in order of G,R,B(G7 → G6 →... B0)

9. Typical Application Circuit：



Each LED connects in parallel with a 0.1uF chip capacitor at its anode and cathode.