

承 認 書

APPROVE SHEET



敬請承認如下之形式規格書：

客戶名稱

CUSTOMER: _____

貴公司製品名

本公司製品名：

帶灯轻触开关

CUSTOMER PN: _____ PRODUCT PN: _____

貴公司規格

本公司規格：

EL-660710系列

APPROVAL DAT: _____ PRODUCT CODE: _____

客戶料號：

本公司規格書編號：

CUSTOMER NO.: _____ PRODUCT DRAWING NO.: _____

新品承認

NEW APPROVE

規格變更再承認

CHANGE CODE APPROVE

AGAIN

材料變更再承認

CHANGE MATERIAL APPROVE

AGAIN

APPROVAL

批 准

朱艳军

DATE:

CHECK

審 查

彭佳伟

DATE:

DESIGN

設 計

卢旋

DATE:

貴公司承認欄

APPROVAL SIGNATURES

請於____年____月____日前承認返回

日期 DATE: _____

PLEASE RETURN TO ADMIT XUNIANRURI

深圳市亿利百斯特电子有限公司

ShenZhen ElyBest Electronics Co ., Ltd

付文鹏 (Vincent Fu)

Tel : 0755-28213003

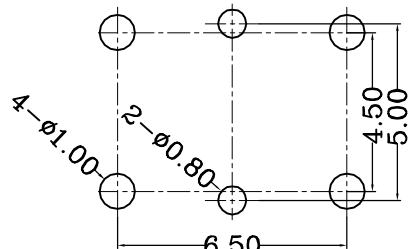
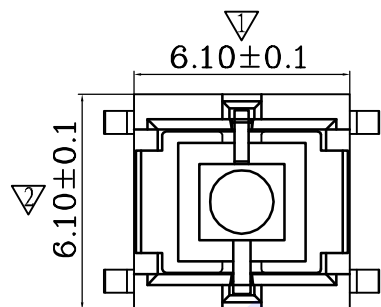
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Mob: 18923844556

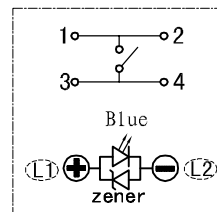
Email : vincent@elybest.com

Add : 深圳市龙岗区平湖街道世之鼎产业园B栋2楼

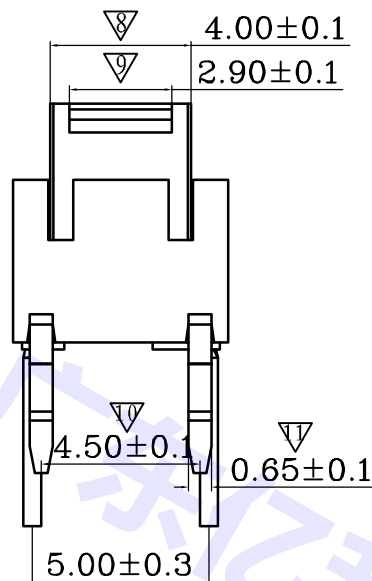
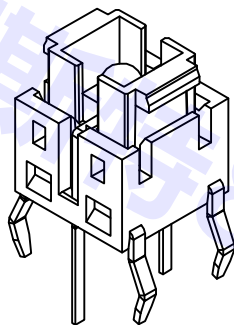
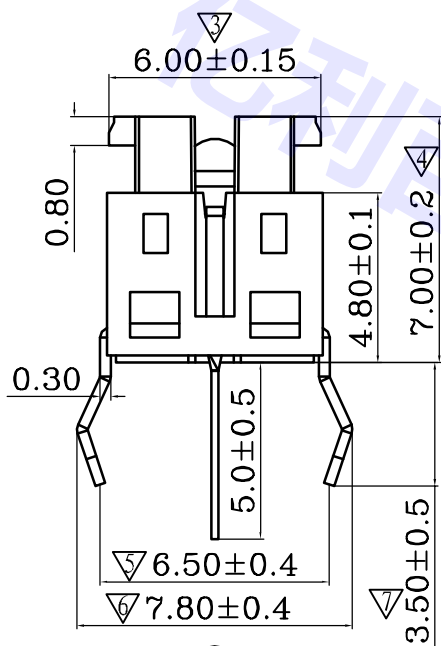
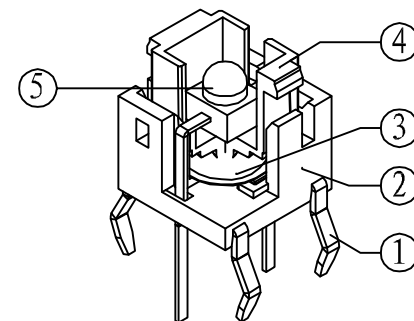
遵守欧盟WEEE和ROHS之规定



印刷电路板焊接处尺寸图



电路图

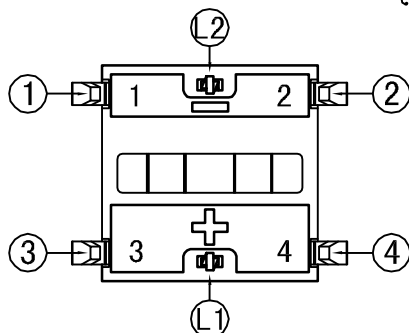


Absolute Maximum Rating (极限参数) (TA=25°C)

| Parameter (参数) | SYMBOL | COLOR | RATING | Unit |
|--------------------------------------|-----------|-------|---------------------|------|
| Power Dissipation (功耗功率) | Pd | | 105 | mW |
| FORWARD CURRENT (正向电流) | IF | | 20 | mA |
| Pulse Forward Current (脉冲正向电流) | IF (PEAK) | | 100 | mA |
| Reverse Voltage (反向电压) | VR | | — | V |
| Electrostatic Discharge (ESD) (静电放电) | | | 2000 | V |
| Operating Temperature Range (工作温度) | TOPR | | -30°C to +80°C | °C |
| Storage Temperature Range (储存温度) | TSTG | | -30°C to +85°C | °C |
| Storage Temperature Range (储存温度) | TSOL | | 260°C for 5 Seconds | °C |

CONDITION FOR ITP IS PULSE OF 1/10 DUTY AND 0.1MICROSECOND WIDTH
ELECTRICAL AND OPTICAL CHARACTERISTICS (电气光学特性) (TA=25°C)

| Parameter (参数) | SYMBOL | Condition | COLOR | Min. | Typ. | Max. | Unit |
|----------------------------------|--------|-----------|-------|-------|------|------|------|
| Forward Voltage (正向工作电压) | VF | IF=20mA | | 2.8 | 3.2 | 3.4 | V |
| Reverse Current (反向漏电流) | IR | VR=5V | | — | — | 10 | µA |
| Luminous Intensity (发光强度) | IV | IF=20mA | | 500 | 600 | 900 | med |
| Peak Emission Wavelength (峰波长) | λp | IF=20mA | | 457.5 | 461 | 465 | nm |
| Spectral Line Half Width (光谱线半宽) | Δλ | IF=20mA | | 30 | 35 | 40 | nm |
| Dominant Wavelength (主波长) | λd | IF=20mA | | 455 | 459 | 463 | nm |



技术参数

1. 额定电流: DC 12V 50mA
2. 耐高压: 交流250伏 (50-60赫兹) 持续 1 分钟
3. 接触阻抗: 100毫欧max
4. 绝缘阻抗: 100兆欧min . 500VDC.
5. 操作力: 160±50gf
6. 导通行程: 0.20mm±0.1mm
7. 工作温度范围-25°C至70°C
8. 寿命: 100,000次.
9. 操作类型: 触动回复式

| | | | | |
|---|------|---|---------------|------|
| ⑤ | LED灯 | 1 | 小蝴蝶圆头(水清透明胶体) | 发蓝光 |
| ④ | 导芯 | 1 | 尼龙 | 黑色 |
| ③ | 弹片 | 1 | 不锈钢 | 凹面覆银 |
| ② | 底座 | 1 | 尼龙 | 黑色 |
| ① | 端子 | 4 | 黄铜 | 镀银 |

GDEL 深圳市亿利百斯特电子有限公司

| | | | | | | | | | | | | | |
|---------|----|----|-----|----|----|---------|-------|----------|------------------------|-----|----|------------|---|
| | | | | | | 角度 | ±2° | 成品 图面 | 设计 | 刘志勇 | 日期 | 2019.12.17 | 名称: 610插板发蓝光开关 黑导黑座(操作力160gf) 料号: EL-660710 |
| | | | | | | 30 - 20 | ±0.30 | | 审核 | | 日期 | | |
| | | | | | | 20 - 10 | ±0.25 | | 核准 | | 日期 | | |
| | | | | | | L≤10 | ±0.20 | | 图面编号: C01T3061D0101164 | | | | |
| 工程变更通知单 | 版次 | 日期 | NEW | 说明 | 修改 | 审核 | 核准 | 未详细说明之公差 | 比例 | 1:1 | 单位 | mm | 页码 |

1. 一般特性 General Characteristics

- 1.1 额定值(Rating Value): DC12V 50mA
 1.2 工作温度(Work Temperature Range): $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$
 1.3 存储温度(Store Temperature Range): $-30^{\circ}\text{C} \sim 80^{\circ}\text{C}$
 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: $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$ 相对湿度: 45%~85% RH 气压: 8,600~10,600 帕
 Temperature: $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$ 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 产品塑胶部件无缩水. 披锋. 欠注. 斑点. 破损或变形现象。
 The plastic parts of product have no defects such as very serious shrink, scarcity, fleck, disrepair, transmutation, etc.
- 2.3 产品引脚无氧化. 脏污. 变形. 毛刺或电镀不良。
 Lead feet have no 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。
 Operating switch is unhindered, rhythmmed .
- 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 | 接触阻抗 Contact Resistance | 在低电流 ($\leq 100\text{mA}$) 条件下测试。 Measured at low current (100mA or less). | 低电阻测试仪 Low Resistance Meter | $100\text{m}\Omega \text{ max}$ |
| 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 250V). Measurement shall be made between adjacent terminals, between terminal and shell(DC 250V). | 绝缘测试机 Insulation Resistance Tester | $100\text{M}\Omega \text{ min}$ |
| 3.3 | 耐压测试 Dielectric Withstand Voltage | 输入一定电压(50-60Hz, 电压值 AC 250V) 1分钟, 漏电流为 2mA, 测试邻近端子间。 Apply certain voltage (50-60Hz, AC 250V) 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, breakdown and damaging insulation. |

4. 机械特性 Mechanical Characteristics

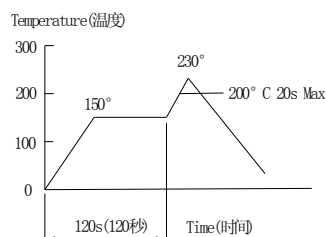
| No. | 项 目 Item | 测试方法 Test Method | 测试设备 Equipment | 特性要求 Requirements |
|-----|----------------------------|--|----------------------------------|--|
| 4.1 | 操作力 Operation Force | 逐渐施力操作开关按键, 测量开关到达全部工作行程时所需的最大操作力度。 Operate the keystroke of the switch vertically, and then increase press strength gradually, Measured maximum operation force while the travel of the switch is full. | 推拉力计 Push-Pull Force Gauge | 见图面 See Drawing |
| 4.2 | 行程 Full travel | 垂直操作开关按键, 量测开关顶端最大移动距离. Operate the keystroke of the switch vertically, the travel distance of keystroke moving from its free position to maximum moving distance shall be measurement. | 游标卡尺 Vernier Caliper | 0.25 ± 0.10 |
| 4.3 | 静止强度 Static Strength | 开关的动作方向为垂直放置开关, 在推柄动作方向施加 3KG 的静负荷, 60 秒时间. Placing the switch such that the direction of switch operation is vertical, a static load of <u>3</u> kgf shall be applied in the direction of stem operation for a period of <u>60</u> seconds. | 推拉力计 Push-Pull Force Gauge | 无机械的和电气的 损伤迹象 There shall be no sign of damage mechanically and electrically. |

5. 可靠性测试 Reliability trial

| No. | 项 目 Item | 测试方法 Test Method | 测试设备 Equipment | 特性要求 Requirements |
|-----|------------------------|---|-------------------------------|--|
| 5.1 | 盐雾实验 Salt Mist Test | 试件在下述实验后测量: 1. 温度: $35 \pm 5^{\circ}\text{C}$ 2. 盐溶液浓度: $5 \pm 1\%$ (质量百分比), 3. 试验时间: 24 小时, 4. 试验后, 将盐沉积物用水冲掉。 The switch shall be checked after following test: 1. Temperature: $35 \pm 5^{\circ}\text{C}$ 2. Salt solution: $5 \pm 1\%$ (Solids by mass) 3. Duration: 24 hours, 4. After immersing, salt deposit shall be removed by running water. | 盐雾试验机 Salt Spray Tester | 在金属件上没有严重 腐蚀斑点。 No remarkable corrosion shall be recognized in metal parts. |

5. 可靠性测试 Reliability trial

| No. | 项 目 Item | 测试方法 Test Method | 测试设备 Equipment | 特性要求 Requirements |
|-----|---|---|--|--|
| 5.2 | 机械寿命 Operation Life Without Load | <p>开关在 50mA, 12V DC 条件下, 于寿命试验设备上以 60 次 / 分的速度连续被操作 100,000 次。</p> <p>Switch shall be operated 100,000cycles at 60 cycles /min with 12V DC 50mA (Resistive Load).</p> | <p>寿命试验机 Life Tester</p> | <p>寿命: 100.000次 实验后: 接触电阻: <u>200mΩ</u> Max. 绝缘电阻: <u>50MΩ</u> Min 操作力: 变化在 ±50% 内 开关外观及结构无损坏。 Life test: 100.000cycles After test: Contact resistance: <u>200mΩ</u> Max Insulation resistance: <u>50MΩ</u> Min Operating force: Change should be within ±50% of specified value. No abnormalities shall be recognized in appearance and construction.</p> |
| 5.3 | 耐焊接热 Resistance to Soldering heat | <p>试件在下述条件下进行试验:</p> <ol style="list-style-type: none"> P. C. B. 厚度为 1.6mm, 开关在 150°C 条件下预热 2 分钟后再于 230°C max 的锡炉中焊接, <p>Switch shall be measured after following test:</p> <ol style="list-style-type: none"> 1.6mm thick glass epoxy P. C. B Switches shall be heat up at 150°C for 2 minutes, then be soldered at 230°C max. <p>Temperature profile(Reference)</p> | <p>控温锡炉 控温烙铁 Solder Stove Solder Searing-iron</p> | <p>本体无变形, 能满足于机械、电气性能。 Appearance should be not damaged, electrical and mechanical characteristics shall be satisfied. (接触电阻: <u>200mΩ</u> Max. 绝缘电阻: <u>50 MΩ</u> Min Contact resistance: <u>200mΩ</u> Max Insulation resistance: <u>50MΩ</u> Min</p> |



5. 可靠性测试 Reliability trial

| No. | 项目 Item | 测试方法 Test Method | 测试设备 Equipment | 特性要求 Requirements |
|-----|--|--|---|--|
| 5.4 | 可焊性试验 Solder ability Test | 端子顶部被浸入焊锡炉中, 温度为 $240\pm 5^{\circ}\text{C}$, 时间 3 ± 1 秒。 The top of the terminals shall be dipped in the solder bath at $240\pm 5^{\circ}\text{C}$ for 3 ± 1 seconds. | 控温锡炉 Solder Stove | 引脚至少 95% 上锡。 Ninety-five percent of terminals shall be dipped. |
| 5.5 | 耐高温测试 Resistance to Heat Test | 放置在温度 $80\pm 2^{\circ}\text{C}$ 环境中 96 小时 后, 再置于正常条件下 1 小时后测 定。 The switch shall be stored at a temperature of $80\pm 2^{\circ}\text{C}$ for 96 hours, Measurements shall be made after it be subjected to the standard conditions for 1 hour. | 高低温 试验机 High & Low Temperature Tester | 外观, 机械及电气性能均 符合要求。 Appearance, electrical and mechanical characteristics shall be satisfied. (接触电阻: $200\text{m}\Omega$ Max. 绝缘电阻: $50\text{M}\Omega$ Min Contact resistance: $200\text{m}\Omega$ Max Insulation resistance: $50\text{M}\Omega$ Min |
| 5.6 | 耐低温测试 Resistance to Cold Test | 放置在温度 $-30\pm 2^{\circ}\text{C}$ 环境中 96 小时 后, 再置于正常条件下 1 小时后测 定。 The switch shall be stored at a temperature of $-30\pm 2^{\circ}\text{C}$ for 96 hours, Measurements shall be made after it be subjected to the standard conditions for 1 hour. | 高低温 试验机 High & Low Temperature Tester | 外观, 机械及电气性能均 符合要求。 Appearance, electrical and mechanical characteristics shall be satisfied. (接触电阻: $200\text{m}\Omega$ Max. 绝缘电阻: $50\text{M}\Omega$ Min Contact resistance: $200\text{m}\Omega$ Max Insulation resistance: $50\text{M}\Omega$ Min |
| 5.7 | 耐湿性测试 Resistance to Humidity Test | 放置于温度 $40\pm 2^{\circ}\text{C}$, 相对湿度为 $90\sim 96\%$ 环境中 96 小时后, 再置于正 常条件下 1 小时后测定 (注意要擦去 水滴)。 The switch shall be stored at a temperature of $40\pm 2^{\circ}\text{C}$, relative humidity $90\sim 96\%$ for 96 hours, Measurements shall be made after it be subjected to the standard conditions for 1 hour (Wipe out water drip). | 恒温恒湿箱 Temperature & Humidity Tester Chamber | 外观, 机械及电气性能均 符合要求。 Appearance, electrical and mechanical characteristics shall be satisfied. (接触电阻: $200\text{m}\Omega$ Max. 绝缘电阻: $50\text{M}\Omega$ Min Contact resistance: $200\text{m}\Omega$ Max Insulation resistance: $50\text{M}\Omega$ Min |