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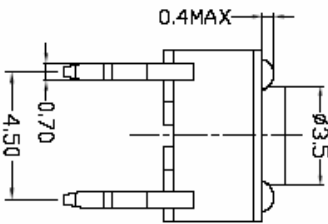
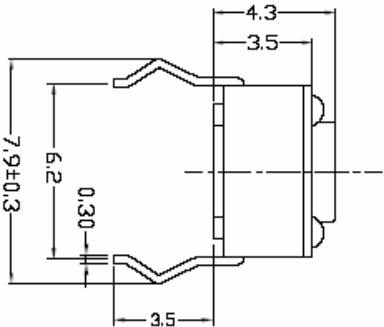
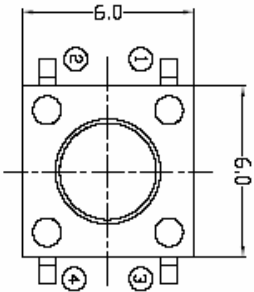
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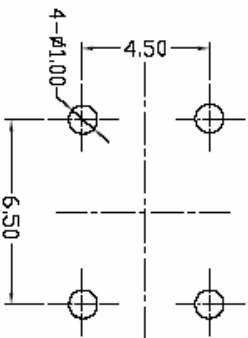
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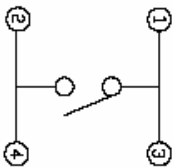
| REV. | MODIFICATION | DATE | ISSUING<br>制圖 | CHECKED<br>審核 | APPROVED<br>核准 |
|------|--------------|------|---------------|---------------|----------------|
| 1    | 修改           |      |               |               |                |
| 2    |              |      |               |               |                |



P.C.B. MOUNTING PATTERN

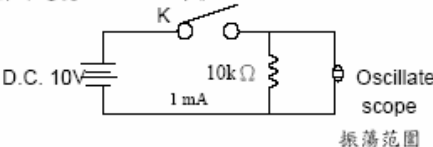
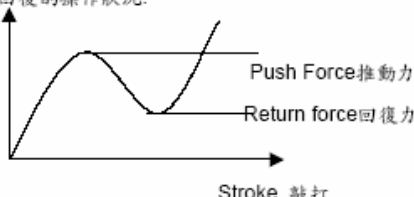
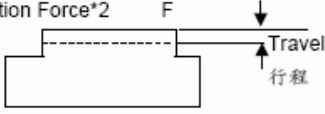
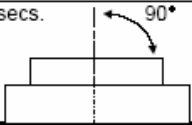


CIRCUIT DIAGRAM



| NAME | 標準規格        | Quantity | SIZE | ISSUED | DATE       | REV. | DATE       | REV. |
|------|-------------|----------|------|--------|------------|------|------------|------|
| 名稱   |             | 數量       | 規格   | 版數     | 日期         | 修改   | 日期         | 修改   |
| 料號   | KSM-07C0430 | 規格       | 規格   | 規格     | 2008/04/16 | 規格   | 2008/04/16 | 規格   |
| 材質   |             | 單位       | 單位   | 單位     |            | 單位   |            | 單位   |

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| DESCRIPTION<br>種類                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | TACT SWITCH<br>輕觸開關        | DATE<br>日期                                                                                                                                              | 2008/6/16            |
| MODEL No<br>品名                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | KSM-0FG0430                | PAGE<br>頁碼                                                                                                                                              | 1 OF 6               |
| <p><b>1 GENERAL 一般特性</b></p> <p>1.1 Switch action: Push-on type S.P.S.T.<br/>開關動作：推動類型為S.P.S.T.</p> <p>1.2 Switch rating : D.C : 12V 50mA.<br/>開關額定值：直流電：12V 50mA.</p> <p>1.3 Operation temperature range: -20 ~ +70℃<br/>操作額定溫度 -20 ~ +70℃</p> <p>1.4 Preservative temperature range single condition : - 40 ~ +80℃ .<br/>防腐條件下的額定溫度:- 40 ~ +80℃ .<br/>Taping condition : - 20 ~+60℃<br/>輕敲的條件：-20 ~+60℃</p> <p>1.5 Appearance and dimensions:See individual drawing page .<br/>外觀和尺寸：見單獨的圖紙。</p> <p>1.6 Standard conditions unless otherwise .The test and measurements shall be carried out as follows :<br/>標準條件除非另有測試試驗和測量法將會影響它的變化如下：</p> <p>Ambient temperature:5 ~ 35℃ .<br/>外界環境溫度：5 ~ 35 ℃ .<br/>Relative humidity:45 ~ 85%<br/>相對濕度：45 ~ 85%<br/>Air pressure:86 ~ 106 KPa<br/>氣壓：86 ~ 106 Kpa</p> <p><b>2 PERFORMANCE 性能</b></p> <p><b>2.1 ELECTRICAL CHARACTERISTICS .電氣性能.</b></p> |                            |                                                                                                                                                         |                      |
| NO.<br>序號                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ITEMS<br>項目                | TEST CONDITIONS<br>試驗條件                                                                                                                                 | CRITERIA<br>標準       |
| 2.1.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Contact resistance<br>接觸電阻 | Push Force: ( Operation Force ) x 2( 1KHz, 20mV, 5~50mA )<br>推力：（操作力）*2（1KHz, 20mV, 5~50mA）<br>Measurement tool:contact resistance meter<br>測量工具：低電阻電橋儀 | 100mΩmax.<br>100mΩ以下 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            |                                                                                                                                                         |                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            |                                                                                                                                                         |                      |

|                                       |                               |                                                                                                                                                                                                                      |            |                                                                  |
|---------------------------------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------------------------------------------------------------|
| DESCRIPTION<br>種類                     |                               | TACT SWITCH<br>輕觸開關                                                                                                                                                                                                  | DATE<br>日期 | 2008/6/16                                                        |
| MODEL No<br>品名                        |                               | KSM-0FG0430                                                                                                                                                                                                          | PAGE<br>頁碼 | 2 OF 6                                                           |
| NO.                                   | ITEMS                         | TEST CONDITIONS                                                                                                                                                                                                      |            | CRITERIA                                                         |
| 2.1.2                                 | Insulation resistance<br>絕緣電阻 | Test voltage : 100V DC<br>試驗電壓： 100V 電流電壓<br>Measured after:1 min ± 5 secs.<br>標準模仿：1分鐘±5秒                                                                                                                           |            | 100MΩ min.<br>100MΩ 以上.                                          |
| 2.1.3                                 | Withstand Voltage<br>額定電壓     | Test voltage: 250V AC; Duration:<br>1 min. ( 50 ~ 60 Hz, cut-off current 2 mA )<br>電壓實驗：250V 交流電壓；持續時間：1 分鐘。<br>( 50 ~ 60 Hz, cut-off current 2 mA )                                                                 |            | No insulation destruction<br>沒有絕緣之異常變化                           |
| 2.1.4                                 | Bouncing<br>振蕩                | <p>Operation speed : 3 ~ 4times/s<br/>操作速度：3~4次每秒</p> <div></div> <p>ON: 3ms max.<br/>開：3ms 最大。<br/>OFF: 8ms max.<br/>關：8ms 最大。</p> |            |                                                                  |
| 2.2 MECHANICAL CHARACTERISTICS .機械性能. |                               |                                                                                                                                                                                                                      |            |                                                                  |
| NO.<br>序號                             | ITEMS<br>項目                   | TEST CONDITIONS<br>試驗條件                                                                                                                                                                                              |            | CRITERIA<br>標準                                                   |
| 2.2.1                                 | Operation Force<br>操作力        | <p>Push by recommended operating condition.<br/>推動與回復的操作狀況。</p> <div></div>                                                       |            | Push force<br>推動力<br>160g±50g,<br>Returnforce<br>回復力<br>60g Min. |
| 2.2.2                                 | Travel To Closure<br>行程到終止    | <p>Push by recommended operating condition.<br/>推動與回復的操作狀況。<br/>F *Operation Force*2<br/>操作力</p> <div></div>                      |            | 0.25 ± 0.10mm                                                    |
| 2.2.3                                 | Push Strength<br>推動力          | <p>10N For 15 secs.</p> <div></div>                                                                                               |            | No Damage.<br>(Electrical and Mechanical)<br><br>無異常（電能和性能）      |

|                                   |                                  |                                                                                                                                                                                                                                                                                                                                          |                                                                                                                             |           |
|-----------------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------|
| DESCRIPTION<br>種類                 |                                  | TACT SWITCH<br>輕觸開關                                                                                                                                                                                                                                                                                                                      | DATE<br>日期                                                                                                                  | 2008/6/16 |
| MODEL No<br>品名                    |                                  | KSM-0FG0430                                                                                                                                                                                                                                                                                                                              | PAGE<br>頁碼                                                                                                                  | 3 OF 6    |
| NO.<br>序號                         | ITEMS<br>項目                      | TEST CONDITIONS<br>試驗條件                                                                                                                                                                                                                                                                                                                  | CRITERIA<br>標準                                                                                                              |           |
| 2.2.4                             | Vibration<br>Test<br>振動試驗        | 1) Amplitude : 1.5 mm<br>振幅：1.5 mm<br>2) Sweep Rate: 10~55~10Hz For 1 min.<br>沖擊速度：10~55~10Hz For 1 分鐘.<br>3) Sweep Method: Logarithmic frequency sweep rate.<br>沖擊方法：沖擊速度的對數的頻率.<br>4) Vibration direction : X. Y. Z.(3 Directions).<br>振動方向：X. Y. Z.(3個方向).<br>5) Time :Each Direction 2 hours (Total 6 hours).<br>時間：每個方向2小時（總共6個小時）。 | No.2.1 and 2.2.1 to 2.2.2<br>shall be satisfied.<br>2.1 和 2.2.1到 2.2.2<br>均符合要求。                                            |           |
| NO.<br>序號                         | ITEMS<br>項目                      | TEST CONDITIONS<br>試驗條件                                                                                                                                                                                                                                                                                                                  | CRITERIA<br>標準                                                                                                              |           |
| 2.2.5                             | Soldering Heat<br>test<br>加熱焊錫試驗 | Mount the switch on P.C.B by adhesive.<br>用 粘 合 劑 把 開 關 粘 在 P.C.B 板 上 .<br>1) Reflow process one time .(Refer to section 3.1)<br>回流過程為一次。（涉及部分見3.1）<br>2) Standard conditions after test : 24 hours.<br>標準條件試驗：24小時。                                                                                                                     | Contact resistance<br>100mΩ max.<br>No.2.1shall be satisfied.<br>接觸電阻100mΩ以下符合2.1<br>的要求                                    |           |
| 2.2.6                             | DIP<br>Solderability<br>波峰焊      | After spirited flux.<br>模仿劇烈的熔化過程.<br>Temperature : 245℃ ± 5℃<br>溫度; 245℃ ± 5℃<br>Soldering time : 3 ± 0.5 secs.<br>焊錫時間：3±0.5 秒。                                                                                                                                                                                                        | 70% or more of surface<br>area of the portion<br>immersed in solder shall<br>be covered by new solder.<br>焊料覆蓋為70%或更多部分之範圍。 |           |
| 2.3 CLIMATIC CHARACTERISTICS 環境性能 |                                  |                                                                                                                                                                                                                                                                                                                                          |                                                                                                                             |           |
| NO.<br>序號                         | ITEMS<br>項目                      | TEST CONDITIONS<br>試驗條件                                                                                                                                                                                                                                                                                                                  | CRITERIA<br>標準                                                                                                              |           |
| 2.3.1                             | Cold Test<br>耐冷試驗                | 1) Temperature : - 40℃ ± 2℃<br>溫度：- 40℃ ± 2℃<br>2) Duration of test :96h<br>持續時間：96h.<br>3) Take off a drop water .<br>能滴下一滴水。<br>4) Standard conditions after test : 1 h<br>標準條件後試驗：1小時。                                                                                                                                                | Contact resistance<br>200mΩ max.<br>接觸電阻200mΩ以下。                                                                            |           |

|                   |                                                        |                                                                                                                                                                                                                                            |                   |                          |                                                                                                                                                                                                                     |
|-------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DESCRIPTION<br>種類 |                                                        | TACT SWITCH<br>輕觸開關                                                                                                                                                                                                                        |                   | DATE<br>日期               | 2008/6/16                                                                                                                                                                                                           |
| MODEL No<br>品名    |                                                        | KSM-0FG0430                                                                                                                                                                                                                                |                   | PAGE<br>頁碼               | 4 OF 6                                                                                                                                                                                                              |
|                   |                                                        |                                                                                                                                                                                                                                            |                   |                          |                                                                                                                                                                                                                     |
| NO.<br>序號         | ITEMS<br>項目                                            | TEST CONDITIONS試驗條件                                                                                                                                                                                                                        |                   |                          | CRITERIA<br>標準                                                                                                                                                                                                      |
| 2.3.2             | Heat Test<br>耐熱試驗                                      | 1) Temperature : 85℃ ± 2℃<br>溫度：85℃ ± 2℃<br>2) Duration of test :96h<br>持續時間：96h.<br>3) Standard conditions after test : 1 h<br>標準條件後試驗：1小時.                                                                                               |                   |                          | Contact resistance<br>200mΩ max.<br>接觸電阻200mΩ以下.                                                                                                                                                                    |
| 2.3.3             | Temperature<br>Cycle<br>溫度周期                           | 1) Test cycles : 20 cycles<br>測試周期：20次<br>2) Standard conditions after test : 1h<br>標準條件持續時間為：1小時                                                                                                                                          |                   |                          | Contact resistance<br>200mΩ max.<br>No.2.1.2 to 2.1.4 and                                                                                                                                                           |
|                   |                                                        |                                                                                                                                                                                                                                            | TEMPERATURE<br>溫度 | DURATION OF TEST<br>持續時間 | No. 2.2.1 to 2.2.2 shall                                                                                                                                                                                            |
|                   |                                                        | 1 CYCLE<br>1周期                                                                                                                                                                                                                             | 20±5℃             | 1h                       | be satisfied .                                                                                                                                                                                                      |
|                   |                                                        |                                                                                                                                                                                                                                            | -40±2℃            | 1h                       | 接觸電阻200mΩ以下.                                                                                                                                                                                                        |
|                   |                                                        |                                                                                                                                                                                                                                            | 20±5℃             | 1h                       | 2.1.2到 2.1.4 和 2.2.1 到2.2.2                                                                                                                                                                                         |
|                   |                                                        |                                                                                                                                                                                                                                            | 85±5℃             | 1h                       | 都符合要求.                                                                                                                                                                                                              |
| 2.3.4             | Humidity Test<br>耐濕試驗                                  | 1) Temperature : 60±2℃<br>溫度：60±2℃<br>2) Relative humidity : 90 ~ 95%<br>相對濕度：90 ~ 95%<br>3) Duration of test : 96h<br>持續時間：96h.<br>4) Take off a drop water.<br>能滴下一滴水.<br>5) Standard conditions after test : 1h<br>標準條件後試驗：1小時.         |                   |                          | Contact resistance<br>200mΩ max.<br>No.2.1.2 to 2.1.4 and<br>No. 2.2.1 to 2.2.2 shall<br>be satisfied .<br>接觸電阻200mΩ以下.<br>2.1.2到 2.1.4 和 2.2.1 到2.2.2<br>都符合要求.                                                    |
| 2.3.5             | Endurance<br>( Switching<br>action )<br>性能<br>( 操作開關 ) | 1) D.C. 12V 50mA resistance load<br>負載電阻D.C. 12V 50mA<br>2) Operation speed : 1 ~ 1n times/s<br>操作速度：1 ~ 1n次每一秒<br>3) Push force : max. value of operation force<br>推動力：操作力的最大值.<br>4) Operation number : 300,000 times.<br>壽命：300 , 000次. |                   |                          | Contact resistance<br>200mΩ max.<br>Bounce : 100ms max.<br>Variation rate of operation<br>force shall be within ±30%<br>to the value before testing<br>接觸電阻200mΩ以下.<br>振動：100ms以下.<br>操作力的變化比率在±30% 以內<br>時對試驗最有利的. |

|                   |                        |                                                                                                                                                                                                                                     |                                                                                                                                                                  |
|-------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DESCRIPTION<br>種類 | TACT SWITCH<br>輕觸開關    | DATE<br>日期                                                                                                                                                                                                                          | 2008/6/16                                                                                                                                                        |
| MODEL No<br>品名    | KSM-0FG0430            | PAGE<br>頁碼                                                                                                                                                                                                                          | 5 OF 6                                                                                                                                                           |
| NO.<br>序號         | ITEMS<br>項目            | TEST CONDITIONS<br>試驗條件                                                                                                                                                                                                             | CRITERIA<br>標準                                                                                                                                                   |
| 2.3.6             | Withstand SO2<br>抗二氧化硫 | 1) Density : 10±2ppm.<br>密度：10±2ppm.<br>2) Temperature : 40±2℃<br>溫度：40±2℃<br>3) Relative humidity : 80 ~ 85%<br>相對濕度：80 ~ 85%<br>4) Duration of test : 24h<br>持續時間：24h.<br>5) Standard conditions after test : 1 h<br>標準條件後試驗：1小時。 | Contact resistance<br>200mΩ max.<br>No.2.1.2 to 2.1.4 and<br>No. 2.2.1 to 2.2.2 shall<br>be satisfied .<br>接觸電阻200mΩ以下。<br>2.1.2到 2.1.4 和 2.2.1 到2.2.2<br>都符合要求。 |

### 3 PRECAUTION.預防.

#### 3.1 Manual Soldering 手工焊接

| Items項目                 | Condition條件                                                      |
|-------------------------|------------------------------------------------------------------|
| Flux built-up           | Mounting surface should not be coated with flux                  |
| 組合溶解                    | 表面不需要塗有焊料；                                                       |
| Preheating time         | 2±0.3min                                                         |
| 預熱時間                    | 2±0.3分鐘                                                          |
| Preheating temperature  | Ambient temperature of the soldered surface of PC Board,100℃ Max |
| 預熱溫度                    | 焊接PCB板表面的周圍溫度最大為100℃。                                            |
| Solering temperature    | 350℃ Max                                                         |
| 焊接溫度                    | 350℃以下                                                           |
| Continuous dipping time | 3s Max                                                           |
| 連續浸漬時間                  | 最多3秒                                                             |
| Number of soldering     | 2 times Max                                                      |
| 焊接次數                    | 最多2次                                                             |

Notes:  
注 意

1.Prevent flux penetration from the top side of the TACT switch.  
防止焊接時水滴到輕觸開關的頂部。

2.Switch terminals and a PC Board should not be coated with flux prior to soldering .  
開關腳與PCB焊接時不需要塗上焊接劑。

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |            |           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------|-----------|
| DESCRIPTION<br>種類                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | TACT SWITCH<br>輕觸開關 | DATE<br>日期 | 2008/6/16 |
| MODEL No<br>品名                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | KSM-0FG0430         | PAGE<br>頁碼 | 6 OF 6    |
| <p>3.If you do not use the product immediately, store it just as displayed in the following environment with neither direct sunshine nor corrosive gas and in normal temperature,however, it is recommended that you should use it as soon as possible or with six mouths from the date of delivery at the most.</p> <p>如果不立即使用產品時，貯存時不可以有陽光下的環境裡直接貯存，也不可以在常溫下有腐蝕氣體的條件下貯存，但是盡可能的要在交貨後最多不要超過六個月使用。</p> <p>4.After you break the seal, you should put the remainder in a plastic bag to shut out outside air, and store it in the same environment mentioned above,You should use it up as soon as possible.</p> <p>當密封包裝破裂後，必須把剩餘物放在塑料袋中排除外面的空氣，儲存到上面涉及到的相關環境條件中，盡快消耗完。</p> <p>5.PACKING：1000PCS/bag</p> <p>包裝：1000個每袋</p> |                     |            |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |            |           |