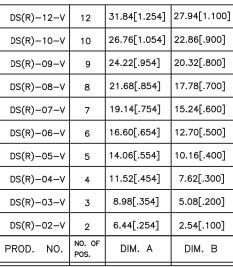
#### 附表A



(1,2,3,4,5,6,7,8,9,10,12, POS AVAIL)

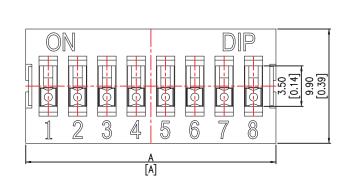
SCHEMATIC(TYP.) 0,0,0,0,0,0,0,0,0,0,0,0,0, 4444444444

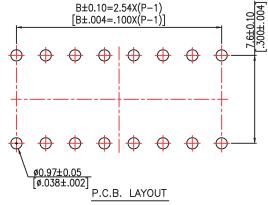
NOTE: 1. ALL DIMENSIONS ARE IN MILLIMETERS, BRACKETED DIMENSIONS ARE IN INCHES.

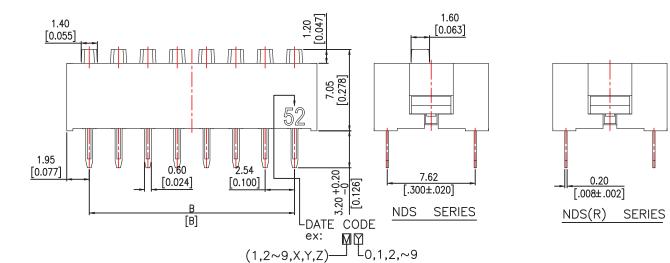
2. GENERAL TOLERANCES: 10mm OVER - ±0.20mm. 10mm BELOW - ±0.10mm.

3. MATERIAL: SEE PAGE 3 OF 3.

4. This product is lead Free.



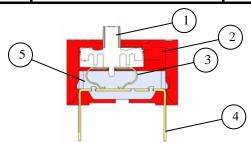




|   | 符號                      | 原尺寸 | 修改後尺寸 | 變更日期 | SCALE (比例): 1:5  | TITLE      | SLIDE TV   | PE DIP SWI     | ГСН  | SIZE | A 4    |
|---|-------------------------|-----|-------|------|------------------|------------|------------|----------------|------|------|--------|
| 1 | (A)                     |     |       |      | (ELPI): 1:0      | 圖 名        | SLIDE I II | I'L DII' SVVI  |      | 圖紙   | A4     |
| 1 |                         |     |       |      |                  | DWG NO.    | DC (       | O WCEDIEC      |      | UNIT | inch   |
| 2 | B                       |     |       |      |                  | 圖 號        | DS - (     | 00 - V SERIES  |      | 單位   | mm     |
| 3 | (C)                     |     |       |      |                  | REV.       | DATE       | APR - 08 - 20  | 112  | HEET | 1 of 1 |
| 1 | $\overline{\mathbb{Q}}$ |     |       |      |                  | 版本         | A 日期       | AFIX - 00 - 20 | /13  | 張 數  | 1 01 1 |
| 4 | <u> </u>                |     |       |      |                  | CHECKED BY | DIOLIAE    | DRAW           | N BY |      |        |
| 5 | Œ                       |     |       |      | FILE NAME: Y1288 | 審核         | RICHAF     | (1) 製          | 昌    | IREN | Ε      |

表單編號: QR-0507 版本: C

| ITEM | DESC.    | Q'TY | MATERIALS                     | TREATMENT   | REMARK |
|------|----------|------|-------------------------------|-------------|--------|
| 1.   | ACTUATOR |      | THERMOPLASTIC<br>PBT UL 94V-0 | WHITE       |        |
| 2.   | COVER    | 1    | THERMOPLASTIC<br>PBT UL 94V-0 | RED         |        |
| 3.   | CONTACT  |      | PHOSPHOR<br>BRONZE            | GOLD PLATED |        |
| 4.   | TERMINAL |      | BRONZE                        | GOLD PLATED |        |
| 5.   | BASE     | 1    | THERMOPLASTIC<br>PBT UL 94V-0 | BLACK       |        |



| Ai<br>R<br>Nt<br>01<br>02<br>03<br>04<br>05<br>06<br>07<br>08<br>09 | = Recesumber Of 1 = 1 F 2 = 2 F 3 = 3 P 4 = 4 P 5 = 5 P 6 = 6 P 7 = 7 P 8 = 8 P | rpe: Ped Actuator Ssed Actuator Position: | NO . : [ | OS _  |          |             | - Seal:<br>□ = Re | d<br>e      |
|---|---|---|----------|-------|----------|-------------|-------------------|-------------|
|   |   |   |          | TITLE | :        |             | APPD.:            |             |
|   |   |   |          |       |          | SWITCHES    | CHKD.:            |             |
| Α   | DWG.REL   |   |          | PRRC  | D.NO.: D | S(R)-□□-□-V |                   | UAN         |
| REV.  | ECO. NO.  | APPD.   |          | FILE  | NO.: E-V | '-CD21      | REV : D           | SHEET :1of1 |

# NDS(R)-V 產品規格書

文 件 編 號 : E-V-AD18

版 次: A

頁 次:1/3

#### 一、 產品型態:

本規格書是描述"指撥式開關",一般之機械特性與電氣特性,而該指撥式開關主要是用來作為訊號開關之電子裝置。

1. 使用之溫度範圍:-40℃~+85℃

2. 儲存之溫度範圍:-40℃~+85℃

3. 產品保存期限:6個月內。

### 二、額定電流:

1. 當開關之設定已固定不再作任何切換,而使電流常處於一平穩的通電狀態時,則額定電流為:100mA,50 V DC。

2. 當開關的設定不固定常需作任意切換,而使電流常處於一脈衝狀態時, 則額定電流為: 25mA, 24 V DC。

三、 操作類型:指撥滑動。

#### 四、 測試項目:

| 特性 | 項次 | 測試種類 | 測            | 試                               | 條            | 件          | 測          | 試      | 要           | 求        |
|----|----|------|--------------|---------------------------------|--------------|------------|------------|--------|-------------|----------|
| 電  | 1  | 目視檢查 | 在未施加以目視方     | n任何外<br>式檢測                     | 力及記          | 试驗前,       | 產品的 统 能之不良 |        | <b>能有影響</b> | 產品功      |
| 氣  | 2  | 接觸阻抗 | 量端子 ②測定時     | 路,在開<br>間的接觸<br>以 1KHZ<br>測量之   | 阻抗值          | 直          | 接觸阻抗       | 亢的初值   | 不得高於        | ⊱50mΩ    |
|    | 3  | 絕緣阻抗 | 直流電壓         | § 500V, 1                       | 分鐘±5         | ō 秒        | 絕緣阻抗       | 九不得低   | 於 100M      | $\Omega$ |
| 特  | 4  | 耐電壓  | 近似正弦<br>端子與底 | 的交流電<br>弦波電壓)<br>底座間,並<br>悲後,檢查 | ), 施於<br>保持1 | 雨相鄰<br>分鐘之 | 成品不得破壞等不   |        | 生, 跳火及      | 絕緣體      |
| 性  | 5  | 静電容量 | 在頻率 ]<br>容含值 | IMHZ±10K                        | HZ 下,        | 測量電        | 該電容值       | 直需 5pF | 以下          |          |

# DS(R)-V 產 品 規 格 書

文件編號: E-V-AD18 版 次: A 頁 次: 2 / 3

|              |    |       | 1 回ルー り放  |  |   |
|--------------|----|-------|---|--|---|
| 機            | 6  | 作動力   | 如圖所示,各箭<br>定推鈕操作方向<br>0N→0FF<br>0FF→0N  |  | 1000gf Max<br>(9.8N Max)                        |
|              | 7  | 操作部度  | 操作方向測定, 撓   | 操作時間 15 秒<br>靜態荷重施於                                  | 操作部不得變形及機械的功能<br>發生故障或損壞<br>電氣特性功能不得發生故障或<br>損壞 |
| 械  <br> <br> | 8  | 抗銲錫熱  | 銲溫:<br>溫度<br>260±5℃<br>(PCB 厚度為 1.6m  | 時間<br>5±1 秒<br>mm)                                   | 受測後的成品仍需符合前述<br>2~6 測試項規格的要求                    |
| 特            | 9  | 振動測試  | 請依照 MIL-STD-<br>規定之方法做測<br>①頻率:10-55-1<br>環測試,週期1<br>②振動方向:以<br>包含推鈕操作。<br>③測試時間:每一 | 試<br>OHZ 的頻率循<br>分鐘<br>X,Y,Z 三軸向,<br>之方向             | 受測後之成品仍需符合前述<br>2~6 測試項規格的要求                    |
|              |    |       | 請依照 MIL-STD-<br>件 A 所規定之方<br>①加速度:50G<br>②測定時間:11=<br>③受測方向:以                       | -202F, 213B 條<br>法做測試<br>±1 毫秒<br>成品全周, 三軸<br>個方向做測試 | 受測後之成品仍需符合前述<br>2~6 測試項規格的要求                    |
| 性            | 11 | 沾 錫 性 | ①NDS(R)-V 銲溫<br>銲錫規格:M705E<br>(錫 96.5%,銀 35<br>②助銲劑:5-10<br>③浸錫時間:5±                | JIS Z 3282 A 級<br>%,銅 0.5%)<br>秒                     | 鍍金/錫面不能有拒銲現象<br>沾錫面積占總面積 75%以上                  |

# DS(R)-V 產 品 規 格 書

 文件編號: E-V-AD18

 版次: A

 页次: 3 / 3

| 耐久性 | 12 | 壽命測試 | 測試時需依照下列所設定情況<br>①施以 25mA, 24V 之直流電<br>②作動速度: 15~20 回/Min<br>③受測次數: 2000 回  | ①受測後之成品仍需符合前述<br>3.4 測試項規格之要求<br>②經過測試後之接觸阻抗值不<br>得高於100mΩ                           |
|-----|----|------|---|--|
| 耐   | 13 | 耐寒性  | 請依照下列所設定的條件測試後.並於常溫常濕中放置1小時後測定<br>①受測溫度:-40±3℃<br>②受測時間:96小時                | 受測後之成品仍需符合前述<br>2~6 測試項規格之要求   |
| 候   | 14 | 耐熱性  | 請依照下列所設定的條件測試後.並於常溫常濕中放置1小時後測定<br>①受測溫度:85±2℃<br>②受測時間:96小時                 | ①受測後之成品仍需符合前述<br>3~6 測試項規格之要求<br>②經過測試後之接觸阻抗值不<br>得高於 100mΩ                          |
| 性   | 15 | 耐濕性  | 請依照下列所設定的條件測試後.並於常溫常濕中放置1小時後測定<br>①受測溫度:40±2℃<br>②相對濕度:90-95%<br>③受測時間:96小時 | ①受測後之成品仍需符合前述<br>4~6 測試項規格之要求<br>②經過測試後之接觸阻抗值不<br>得高於 100mΩ<br>③受測後之絕緣阻抗不得低於<br>10MΩ |

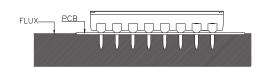
### 五、 銲錫條件

#### ■ 手工銲錫:

| 銲錫溫度   | 350℃以下 |
|--------|--------|
| 連續銲錫時間 | 5 秒以下  |

#### ■ 處理時注意事項:

- 1. 在 P. C. 板面上之助銲劑,不要黏到開關本身。
- 2. 除了有貼 TAPE 的產品形式, 可使用沖洗式清洗外; 其它則不可洗到開關本身。
- 3. 本產品請於 OFF 位置進行過錫爐、補焊等高溫作業,若不慎置於 ON 位置進行作業時,可能造成操作力下降及阻值升高等現象發生。
- 4. 若使用FLUX 為發泡式, 則要管制其發泡面高度, 不可超過已放置SW的PCB表面, 如果FLUX 發泡面超過PCB表面, 可能會侵入SW內部, 會變成導通不良原因



FILE No. : E-V-AD18
REV. : A
Page : 1 / 3

### 1.Style:

This specification describes "DUAL IN-LINE PACKAGE SWITCHES" mainly used as signal switch of electric devices with the general requirements of mechanical and electrical characteristics.

1.1 Operating Temperature Range : -40°C ~ +85°C

1.2 Storage Temperature Range :  $-40^{\circ}$ C ~  $+85^{\circ}$ C

1.3 The shelf life of product is within 6 months.

2. Current Range:

2.1 Non-Switching : 100mA, 50V DC 2.2 Switching : 25mA , 24V DC

3. Type of Actuation: Actuated by sliding

4. Test Sequence :

|                           | ITEM | DESCRIPTION                             | TEST CONDITIONS  | REQUIREMENTS   |
|---------------------------|------|---|--|--|
| PERFORMANCE               | 1    | Visual<br>Examination                   | By visual examination check without any out pressure & testing.  | There shall be no defects that affect the serviceability of the product. |
|                           | 2    | Contact<br>Resistance                   | <ul> <li>①To be measured between the two terminals associated with each switch pole.</li> <li>②Measurements shall be made with a 1kHz shall current contact resistance meter.</li> </ul> | 50mΩ Max. (initial)  |
| ELECTRIC                  | 3    | Insulation<br>Resistance                | 500V DC, 1 minute ± 5 sec.   | 100MΩ Min.   |
| ELEC                      | 4    | Dielectric<br>withstand-<br>ing Voltage | 500V AC (50Hz or 60 Hz) shall be applied between all the adjacent terminals and between the terminal and the frame for 1 minute.   | There shall be no breakdown or flashover.                                |
|                           | 5    | Capacitance                             | 1 MHz ± 10 kHz   | 5 pF Max.  |
| MECHANICAL<br>PERFORMANCE | 6    | Operation<br>Force                      | Applied in the direction of operation.  ON→OFF  OFF→ON  → □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □  | 1000gf Max<br>(9.8N Max)   |

FILE No. : E-V-AD18
REV. : A
Page : 2 / 3

|                        | 7  | Stop<br>Strength   | A static load of 1 kgf (9.8N) is applied in the operating direction and pulling direction operated for a period of 15 seconds.  A static load of 5 kgf (49N) to apply on stem top position for a period of 15 seconds. | There shall be no sign of damage mechanically  There shall be no sign of electrical function out of order or damage. |  |
|------------------------|----|--|--|--|--|
| II                     |    | Caldavias  | Soldering Temperature :  |  |  |
|                        | 8  | Soldering<br>Heat  | TEMP TIME  | As shown in item 2~6   |  |
| Y                      | 0  | Resistance   | 260°C±5°C 5±1 sec.   | 7 to shown in item 2 o   |  |
| NS<br>NS               |    |  | (PCB is 1.6mm in thickness.)   |  |  |
| MECHANICAL PERFORMANCE | 9  | Shall be vibrated in accordance with Method 201A of MIL-STD-202F  ①Frequency: 10-55-10 Hz 1 min/cycle. ②Direction: 3 vertical directions including the direction of operation. ③Test Time: 2 hours each direction. |  | As shown in item 2~6   |  |
| МЕСНА                  | 10 | Shall be shocked in accordance with Method 213B condition A of MIL-STD-202F  Shock  ① Acceleration: 50G. ② Action Time: 11 ± 1 m sec. ③ Testing Direction: 6 sides. ④ Test cycle: 3 times in each direction        |  | As shown in item 2~6   |  |
|                        | 11 | Solderabi-lity   |  | No anti-soldering and the coverage of dipping into solder must more than 75% was requested.                          |  |
| DURABILITY             | 12 | Operation<br>Life  | Measurements shall be made following the test set forth below:  ①25 mA, 24V DC resistive load ②Rate of Operation: 15~20 cycles/ minute ③Cycle of Operation: 2000 cycles.   | ① As shown in item 3,4<br>②Contact Resistance:<br>100mΩ Max.<br>(final-after test)                                   |  |

FILE No. : E-V-AD18

REV. : A

Page : 3 / 3

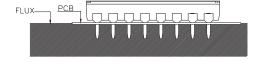
| ROOF          | 13 | Resistance<br>Low<br>Temperature  | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:  ①Temperature: -40°C±3°C ②Time: 96 hours                         | As shown in item 2~6  |
|---------------|----|-----------------------------------|--|---|
| WEATHER-PROOF | 14 | Resistance<br>High<br>Temperature | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:  ①Temperature: 85°C±2°C ②Time: 96 hours                          | ①As shown in item 3~6<br>②Contact Resistance:<br>100mΩ Max.   |
| WEA           | 15 | Resistance<br>Humidity            | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:  ①Temperature:40°C±2°C ②Relative Humidity:90~95% ③Time: 96 hours | ①As shown in item 4,6<br>②Contact Resistance:<br>100mΩ Max.<br>③Insulation Resistance:<br>10MΩ Min. |

### 5. SOLDERING CONDITIONS:

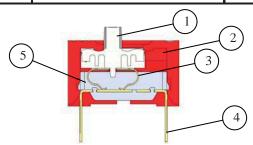
■ Manual Soldering

| Soldering Temperature     | Max.350°ℂ      |
|---------------------------|----------------|
| Continuous Soldering Time | Max. 5 seconds |

- Precautions in Handling
- 1. Care should be exercised so that flux from the upper part of the printed circuit board does not adhere to the switch.
- 2. Don't clean the switch body except with top tape sealed type, which can only spray of cleaning method from top of s/w.
- 3. Must set all poles of switch in "OFF" position when high temp of soldering, re-soldering...etc. In case careless to set in "ON" position for about processing will cause operation force decreasing & contact resistance increasing.
- 4. Please make sure that there is no flux rose over the surface of the PCB



| ITEM | DESC.    | Q'TY | MATERIALS                          | TREATMENT   | REMARK |
|------|----------|------|------------------------------------|-------------|--------|
| 1.   | ACTUATOR |      | THERMOPLASTIC<br>PBT UL 94V-0      | WHITE       |        |
| 2.   | COVER    | 1    | THERMOPLASTIC<br>PBT UL 94V-0      | RED         |        |
| 3.   | CONTACT  |      | PHOSPHOR<br>BRONZE                 | GOLD PLATED |        |
| 4.   | TERMINAL |      | BRONZE                             | GOLD PLATED |        |
| 5.   | BASE     | 1    | THERMOPLASTIC<br>PA66 20% UL 94V-0 | BLACK       |        |



|  |  |  |  |        | U     | U       |              |                   |             |
|--|--|--|--|--------|-------|---------|--------------|-------------------|-------------|
| A<br>R<br>Ni<br>02<br>03<br>04<br>05<br>06<br>07<br>08 | umber Of 1 = 1 F 2 = 2 F 8 = 3 P 4 = 4 P 5 = 5 P 6 = 6 P 7 = 7 P 8 = 8 P | Position Pos | nator ctuator  n : —  n .  n .  n .  n .  n .  n .  n .  n | NO . : | DS _  |         |              | - Seal:<br>□ = Re | d<br>e      |
|  |  |  |  |        | TITLE | :       |              | APPD.:            |             |
|  |  |  |  |        | SLIDE | TYPE DI | P SWITCHES   | CHKD.:            |             |
| Α  | DWG.RE<br>L  |  |  |        | PRRC  | D.NO.:  | DS(R)-□□-□-V | PR. : F           | AGGY        |
| REV.   | ECO. NO.   | APPD.  |  |        | FILE  | NO.: E  | -V-CD21      | REV : A           | SHEET :1of1 |

# NDS(R)-V 產 品 規 格 書

文 件 編 號 : E-V-AD18

版 次: A

頁 次:1 / 4

### 一、 產品型態:

本規格書是描述"指撥式開關",一般之機械特性與電氣特性,而該指撥式開關主要是用來作為訊號開關之電子裝置。

1. 使用之溫度範圍:-40℃~+85℃

2. 儲存之溫度範圍:-40℃~+85℃

3. 產品保存期限:6個月內。

#### 二、 額定電流:

1. 當開關之設定已固定不再作任何切換,而使電流常處於一平穩的通電狀態時,則額定電流為:100mA,50 V DC。

2. 當開關的設定不固定常需作任意切換,而使電流常處於一脈衝狀態時, 則額定電流為: 25mA, 24 V DC。

三、操作類型:指撥滑動。

#### 四、 測試項目:

| 特性 | 項次 | 測試種類  | 測            | 試                                 | 條           | 件            | 測        | 試      | 要           | 求     |
|----|----|-------|--------------|-----------------------------------|-------------|--------------|----------|--------|-------------|-------|
| 電  | 1  | 目視檢查  | 在未施力<br>以目視力 | 加任何外<br>5式檢測                      | 力及          | 試驗前,         | 產品的9     |        | 能有影響        | 產品功   |
| 氣  | 2  | 接觸阻抗  | 量端子 ②測定時     | 1路,在開<br>·間的接解<br>F以 1KHZ<br>·測量之 | 間阻抗         | 值            |          | 亢的初值   | 直不得高於       | ⊱50mΩ |
|    | 3  | 絕緣阻抗  | 直流電壓         | ₹ 500V, 1                         | 分鐘生         | 5秒           | 絕緣阻抗     | 九不得但   | え於 100M S   | Ω     |
| 特  | 4  | 耐 電 壓 | 近似正弦<br>端子與庭 | 的交流電<br>玄波電壓<br>医座間,並<br>態後,檢查    | ), 施加<br>保持 | 个兩相鄰<br>1分鐘之 | 成品不行破壞等不 |        | 章, 跳火及<br>と | 絕緣體   |
| 性  | 5  | 静電容量  | 在頻率 容含值      | 1MHZ±1OK                          | HZ下         | ,測量電         | 該電容值     | 直需 5pF | 以下          |       |

# NDS(R)-V 產 品 規 格 書

文 件 編 號 : E-V-AD18 版 次 : A

頁 次:2 / 4

| 機 | 6  | 作動力   | 如圖所示,各箭頭方向即為測定推鈕操作方向之力量<br>ON→OFF → OFF→ON   | 1000gf Max<br>(9.8N Max)   |
|---|----|-------|--|--|
|   | 7  | 操作部度  | 操作方向測定,操作時間 15 秒   | <ul><li>□操作部不得變形及機械的功能<br/>發生故障或損壞</li><li>□電氣特性功能不得發生故障或<br/>損壞</li></ul> |
| 械 | 8  | 抗銲錫熱  |  | 受測後的成品仍需符合前述<br>   |
| 特 | 9  | 振動測試  | 請依照 MIL-STD-202F, 201A 所規定之方法做測試 ①頻率:10-55-10Hz 的頻率循環測試,週期 1 分鐘 ②振動方向:以 X, Y, Z 三軸向包含推鈕操作之方向 ③測試時間:每一方向 2 小時 | 章<br>受測後之成品仍需符合前述<br>2~6 測試項規格的要求  |
|   | 10 | 衝擊試驗  | 請依照 MIL-STD-202F, 213B 係件 A 所規定之方法做測試 ①加速度:50G ②測定時間:11±1 毫秒 ③受測方向:以成品全周,三率 六個方向做測試 ④受測次數:每一方向3次             | 受測後之成品仍需符合前述<br>2~6 測試項規格的要求   |
| 性 | 11 | 沾 錫 性 | ①NDS(R)-V 銲温:245±5°C<br>銲錫規格:M705E JIS Z 3282 A 約<br>(錫 96.5%,銀 3%,銅 0.5%)<br>②助銲劑:5-10 秒<br>③浸錫時間:5±1 秒     | 發<br>鍍金/錫面不能有拒銲現象<br>沾錫面積占總面積 75%以上  |

## NDS(R)-V 產品規格書

文 件 編 號 : E-V-AD18 版 次 : A 頁 次 : 3 / 4

| 耐久性 | 12 | 壽命測試 | 測試時需依照下列所設定情況<br>①施以 25mA, 24V 之直流電<br>②作動速度: 15~20 回/Min<br>③受測次數: 2000 回  | ①受測後之成品仍需符合前述<br>3.4 測試項規格之要求<br>②經過測試後之接觸阻抗值不<br>得高於100mΩ                           |
|-----|----|------|---|--|
| 耐   | 13 | 耐寒性  | 請依照下列所設定的條件測試後.並於常溫常濕中放置1小時後測定<br>①受測溫度:-40±3℃<br>②受測時間:96小時                | 受測後之成品仍需符合前述<br>2~6 測試項規格之要求   |
| 候   | 14 | 耐熱性  | 請依照下列所設定的條件測試後.並於常溫常濕中放置1小時後測定<br>①受測溫度:85±2°C<br>②受測時間:96小時                | ①受測後之成品仍需符合前述<br>3~6 測試項規格之要求<br>②經過測試後之接觸阻抗值不<br>得高於 100mΩ                          |
| 性   | 15 | 耐濕性  | 請依照下列所設定的條件測試後.並於常溫常濕中放置1小時後測定<br>①受測溫度:40±2℃<br>②相對濕度:90-95%<br>③受測時間:96小時 | ①受測後之成品仍需符合前述<br>4~6 測試項規格之要求<br>②經過測試後之接觸阻抗值不<br>得高於 100mΩ<br>③受測後之絕緣阻抗不得低於<br>10MΩ |

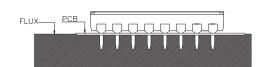
### 五、 銲錫條件

#### ■ 手工銲錫:

| 銲錫溫度   | 350℃以下 |  |
|--------|--------|--|
| 連續銲錫時間 | 5 秒以下  |  |

#### ■ 處理時注意事項:

- 1. 在 P. C. 板面上之助銲劑,不要黏到開關本身。
- 2. 除了有貼 TAPE 的產品形式, 可使用沖洗式清洗外; 其它則不可洗到開關本身。
- 3. 本產品請於 OFF 位置進行過錫爐、補焊等高溫作業,若不慎置於 ON 位置進行作業時,可能造成操作力下降及阻值升高等現象發生。
- 4. 若使用FLUX 為發泡式, 則要管制其發泡面高度, 不可超過已放置SW的PCB表面, 如果FLUX 發泡面超過PCB表面, 可能會侵入SW內部, 會變成導通不良原因



# NDS(R)-V 產 品 規 格 書

文 件 編 號 : E-V-AD18 版 次 : A

頁 次:4/4

### ■ 儲存條件的注意事項:

當物品被儲存於以下的情形與條件它可能會影響產品功能變差及吃錫性等.. 應避免儲存於下列情形

- 1. 温度在-10(max)~+40(min)&濕度在 85%(min)的地方
- 2. 在有腐蝕性氣體的地方
- 3. 長時間儲存至少6個月
- 4. 陽光直接照射的地方
  - \*以包裝的狀態儲存以避免重力承載
  - \*請儘快使用我們建議3個月之內最多6個月內使用完畢
  - \*打開包裝後,要將未使用完剩餘產品存放在適當的防潮&密閉環境中

FILE No. : E-V-AD18

REV. : A

Page : 1 / 4

### 1.Style:

This specification describes "DUAL IN-LINE PACKAGE SWITCHES" mainly used as signal switch of electric devices with the general requirements of mechanical and electrical characteristics.

1.1 Operating Temperature Range : -40°C ~ +85°C

1.2 Storage Temperature Range :  $-40^{\circ}$ C ~  $+85^{\circ}$ C

1.3 The shelf life of product is within 6 months.

### 2. Current Range:

2.1 Non-Switching: 100mA, 50V DC 2.2 Switching: 25mA, 24V DC

3. Type of Actuation: Actuated by sliding

4. Test Sequence :

|                           | ITEM | DESCRIPTION                             | TEST CONDITIONS  | REQUIREMENTS   |
|---------------------------|------|---|--|--|
| NCE                       | 1    |   | By visual examination check without any out pressure & testing.  | There shall be no defects that affect the serviceability of the product. |
| : PERFORMANCE             | 2    | Contact<br>Resistance                   | <ul> <li>①To be measured between the two terminals associated with each switch pole.</li> <li>②Measurements shall be made with a 1kHz shall current contact resistance meter.</li> </ul> | 50mΩ Max. (initial)  |
| ELECTRIC                  | 3    | Insulation<br>Resistance                | 500V DC, 1 minute ± 5 sec.   | 100MΩ Min.   |
| ELEC                      | 4    | Dielectric<br>withstand-<br>ing Voltage | 500V AC (50Hz or 60 Hz) shall be applied between all the adjacent terminals and between the terminal and the frame for 1 minute.   | There shall be no breakdown or flashover.                                |
|                           | 5    | Capacitance                             | 1 MHz ± 10 kHz   | 5 pF Max.  |
| MECHANICAL<br>PERFORMANCE | 6    | Operation<br>Force                      | Applied in the direction of operation.  ON→OFF  OFF→ON  → □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □  | 1000gf Max<br>(9.8N Max)   |

FILE No. : E-V-AD18
REV. : A
Page : 2 / 4

|                        | 7        | Stop<br>Strength  | A static load of 1 kgf (9.8N) is applied in the operating direction and pulling direction operated for a period of 15 seconds.  A static load of 5 kgf (49N) to apply on stem top position for a period of 15 seconds. | There shall be no sign of damage mechanically  There shall be no sign of electrical function out of order or damage. |
|------------------------|----------|-------------------|--|--|
| I                      |          | 0 11 :            | Soldering Temperature :  |  |
| CE                     | 8        | Soldering<br>Heat | TEMP TIME  | As shown in item 2~6   |
| IAN                    | O        | Resistance        | 260°C±5°C 5±1 sec.   | AS SHOWN III ROM 250   |
| NE N                   |          |                   | (PCB is 1.6mm in thickness.)   |  |
| MECHANICAL PERFORMANCE | 9        | Vibration         | Shall be vibrated in accordance with Method 201A of MIL-STD-202F  ①Frequency: 10-55-10 Hz 1 min/cycle. ②Direction: 3 vertical directions including the direction of operation. ③Test Time: 2 hours each direction.     | As shown in item 2~6   |
| MECHAN                 | 10 Shock |                   | Shall be shocked in accordance with Method 213B condition A of MIL-STD-202F  ① Acceleration: 50G. ② Action Time: 11 ± 1 m sec. ③ Testing Direction: 6 sides. ④ Test cycle: 3 times in each direction                   | As shown in item 2~6   |
|                        | 11       |                   |  | No anti-soldering and the coverage of dipping into solder must more than 75% was requested.                          |
| DURABILITY             | 12       | Operation<br>Life | Measurements shall be made following the test set forth below:  ①25 mA, 24V DC resistive load ②Rate of Operation: 15~20 cycles/ minute ③Cycle of Operation: 2000 cycles.   | ① As shown in item 3,4<br>②Contact Resistance:<br>100mΩ Max.<br>(final-after test)                                   |

FILE No. : E-V-AD18

REV. : A

Page : 3 / 4

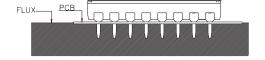
| F             | 13 | Resistance<br>Low<br>Temperature  | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:  ①Temperature: -40°C±3°C ②Time: 96 hours                         | As shown in item 2~6  |
|---------------|----|-----------------------------------|--|---|
| WEATHER-PROOF | 14 | Resistance<br>High<br>Temperature | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:  ①Temperature: 85°C±2°C ②Time: 96 hours                          | ①As shown in item 3~6<br>②Contact Resistance:<br>100mΩ Max.   |
| WEA           | 15 | Resistance<br>Humidity            | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:  ①Temperature:40°C±2°C ②Relative Humidity:90~95% ③Time: 96 hours | ①As shown in item 4,6<br>②Contact Resistance:<br>100mΩ Max.<br>③Insulation Resistance:<br>10MΩ Min. |

### 5. SOLDERING CONDITIONS:

■ Manual Soldering

| Soldering Temperature     | Max.350°ℂ      |
|---------------------------|----------------|
| Continuous Soldering Time | Max. 5 seconds |

- Precautions in Handling
- 1. Care should be exercised so that flux from the upper part of the printed circuit board does not adhere to the switch.
- 2. Don't clean the switch body except with top tape sealed type, which can only spray of cleaning method from top of s/w.
- 3. Must set all poles of switch in "OFF" position when high temp of soldering, re-soldering...etc. In case careless to set in "ON" position for about processing will cause operation force decreasing & contact resistance increasing.
- 4. Please make sure that there is no flux rose over the surface of the PCB



FILE No. : E-V-AD18

REV. : A

Page : 4 / 4

#### Notes on storage conditions:

Do not store in the following environment or it may affect product's function and solderbility:

- 1. temperature of -10 (max) ~ +40 (min) °C & humidity at 85% (min)
- 2. environment with corrosive gas
- 3. storage over 6 months
- 4. place of direct sunlight

Store with proper packaging conditions and to avoid loading heavy force

We suggest to use the products within 3 months or at least 6 months.

After opening the package, the rest products must be stored in the appropriate moisture-proof & airtight environment