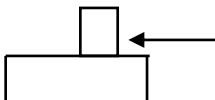
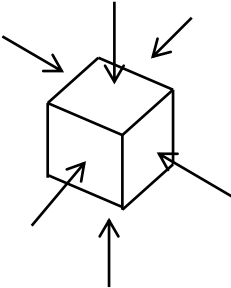


|                                                    |                                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |      |      |      |                                                                                     |                   |             |      |      |                                                                                                                                                                                                                                                                                   |             |             |             |
|----------------------------------------------------|--------------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|-------------------------------------------------------------------------------------|-------------------|-------------|------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|
| DOCUMENT No.<br>SSSS2-S-859                        |                                      |            | TITLE<br>製品仕様書                                                                                                                                                                                                                                                                                                                                                                                                                                                            |      |      |      |      |                                                                                     |                   |             |      |      | PAGE<br>1／6                                                                                                                                                                                                                                                                       |             |             |             |
| BACKGROUND                                         |                                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |      |      |      |                                                                                     |                   |             |      |      | 鉛フリー(S)<br><br>DIP                                                                                                                                                                                                                                                                |             |             |             |
| 1. General 一般事項                                    |                                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |      |      |      |                                                                                     |                   |             |      |      |                                                                                                                                                                                                                                                                                   |             |             |             |
| 1.1 Application 適用範囲                               |                                      |            | This specification is applied to low current circuit (Secondary circuit) slide switch used for electronic equipment.<br>この仕様書は主として電子機器に用いる低電流回路用(2次側回路用)スライドスイッチに適用する。                                                                                                                                                                                                                                                                                                    |      |      |      |      |                                                                                     |                   |             |      |      |                                                                                                                                                                                                                                                                                   |             |             |             |
| 1.2 Operating temperature range                    |                                      |            | 使用温度範囲: -40 ～ 85℃                                                                                                                                                                                                                                                                                                                                                                                                                                                         |      |      |      |      |                                                                                     |                   |             |      |      |                                                                                                                                                                                                                                                                                   |             |             |             |
| 1.3 Storage temperature range                      |                                      |            | 保存温度範囲: -40 ～ 85℃                                                                                                                                                                                                                                                                                                                                                                                                                                                         |      |      |      |      |                                                                                     |                   |             |      |      |                                                                                                                                                                                                                                                                                   |             |             |             |
| 1.4 Test conditions 試験状態                           |                                      |            | Unless otherwise specified, the atmospheric conditions for making measurements and tests are as follows.<br>試験及び測定は特に規定がない限り以下の標準状態のもとで行う。<br>Ambient temperature 温度: 5～35℃<br>Relative humidity 相対湿度: 25～85％<br>Air pressure 気圧: 86～106kPa<br>Should any doubt arise in judgement, tests shall be conducted at the following conditions.<br>ただし、判定に疑義を生じた場合は以下の基準状態で行う。<br>Ambient temperature 温度: 20±2℃<br>Relative humidity 相対湿度: 60～70％<br>Air pressure 気圧: 86～106kPa |      |      |      |      |                                                                                     |                   |             |      |      |                                                                                                                                                                                                                                                                                   |             |             |             |
| 2.Appearance, construction and dimensions 外観、構造、寸法 |                                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |      |      |      |                                                                                     |                   |             |      |      |                                                                                                                                                                                                                                                                                   |             |             |             |
| 2.1 Appearance 外観                                  |                                      |            | Switch shall have good finishing, and no rust, crack or plating failures.<br>各部の仕上げは良好で、機能上有害な錆、傷、割れ、めっき不良及び剥離等があってはならない。                                                                                                                                                                                                                                                                                                                                                 |      |      |      |      |                                                                                     |                   |             |      |      |                                                                                                                                                                                                                                                                                   |             |             |             |
| 2.2 Construction and dimensions 構造、寸法              |                                      |            | Refer to individual product drawing. 個別製品図による。                                                                                                                                                                                                                                                                                                                                                                                                                            |      |      |      |      |                                                                                     |                   |             |      |      |                                                                                                                                                                                                                                                                                   |             |             |             |
| 3.Rating 定格                                        |                                      |            | Maximum 最大定格 <u>6</u> V DC <u>0.3</u> A (Resistive load)(抵抗負荷)<br><br>Minimum 最小定格 <u>3</u> V DC <u>50</u> $\mu$ A (Resistive load)(抵抗負荷)                                                                                                                                                                                                                                                                                                                                 |      |      |      |      |                                                                                     |                   |             |      |      |                                                                                                                                                                                                                                                                                   |             |             |             |
| 4. Electrical specification 電気的性能                  |                                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |      |      |      |                                                                                     |                   |             |      |      |                                                                                                                                                                                                                                                                                   |             |             |             |
|                                                    | Items 項目                             |            | Test conditions 試験条件                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |      |      |      |                                                                                     |                   |             |      |      | Criteria 判定基準                                                                                                                                                                                                                                                                     |             |             |             |
| 4.1                                                | Contact resistance<br>接 触 抵 抗        |            | Shall be measured at 1 kHz±200 Hz (20 mV MAX, 50 mA MAX)<br>1 kHz±200 Hz、電圧 20 mV 以下、電流 50 mA 以下による方法。                                                                                                                                                                                                                                                                                                                                                                    |      |      |      |      |                                                                                     |                   |             |      |      | 70 mΩ MAX                                                                                                                                                                                                                                                                         |             |             |             |
| 4.2                                                | Insulation<br>resistance<br>絶 縁 抵 抗  |            | Test voltage: <u>500</u> V DC, measured after 1 min ± 5 s<br>Applied position: Between all terminals<br>Between terminals and ground(frame)<br>DC <u>500</u> V の電圧を 1分±5秒間端子相互間、端子フレーム間に印加し、測定する。                                                                                                                                                                                                                                                                         |      |      |      |      |                                                                                     |                   |             |      |      | 100 MΩ MIN                                                                                                                                                                                                                                                                        |             |             |             |
| 4.3                                                | Voltage proof<br>耐 電 圧               |            | Test voltage: <u>500</u> V AC (50～60Hz, cut-off current 2 mA)<br>Duration: 1 min<br>Applied position: Between all terminals<br>Between terminals and ground(frame)<br>AC <u>500</u> V (50～60Hz、感度電流 2 mA) の電圧を 1分間端子相互間、端子フレーム間に印加する。                                                                                                                                                                                                                                     |      |      |      |      |                                                                                     |                   |             |      |      | No dielectric breakdown shall occur.<br>絶縁破壊のないこと。                                                                                                                                                                                                                                |             |             |             |
| 4.4                                                | Changeover timing<br>切換タイミング         |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |      |      |      |                                                                                     |                   |             |      |      | Refer to individual product drawing.<br>個別製品図による。                                                                                                                                                                                                                                 |             |             |             |
| 5. Mechanical specification 機械的性能                  |                                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |      |      |      |                                                                                     |                   |             |      |      |                                                                                                                                                                                                                                                                                   |             |             |             |
|                                                    | Items 項目                             |            | Test conditions 試験条件                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |      |      |      |                                                                                     |                   |             |      |      | Criteria 判定基準                                                                                                                                                                                                                                                                     |             |             |             |
| 5.1                                                | Operating force<br>作 動 力             |            | A static load shall be applied to the root of actuator in operating direction.<br>操作部の根元に作動方向へ静荷重を加えて測定する。<br>                                                                                                                                                                                                                                                                       |      |      |      |      |                                                                                     |                   |             |      |      | Refer to individual product drawing.<br>個別製品図による。                                                                                                                                                                                                                                 |             |             |             |
| 5.2                                                | Robustness of<br>terminal<br>端 子 強 度 |            | A static load of <u>3</u> N shall be applied to the tip of terminal in a desired direction for 1 min. The test shall be done once per terminal.<br>端子先端の一方向へ <u>3</u> N の静荷重を1分間加える。<br>ただし、回数は1端子当たり1回とする。                                                                                                                                                                                                                                                               |      |      |      |      |                                                                                     |                   |             |      |      | Shall be free from terminal looseness.<br>damage and breakage of terminal holding portion. Terminals may be bent after test. Electrical performance requirement specified in item 4 shall be satisfied.<br>端子の脱落、破損及び端子保持部の破損のないこと。ただし、端子の曲がりは差し支えないものとする。また、試験後 4項の電気的性能を満足すること。 |             |             |             |
|                                                    |                                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |      |      |      |                                                                                     |                   |             |      |      |                                                                                                                                                                                                                                                                                   | APPD.       | CHKD.       | DSGD.       |
|                                                    |                                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |      |      |      |                                                                                     |                   |             |      |      |                                                                                                                                                                                                                                                                                   | Feb.01.2019 | Feb.01.2019 | Feb.01.2019 |
|                                                    |                                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |      |      | 5,6  |  | Usage notes added | Feb.01,2019 | F. Y | F. Y | H. K                                                                                                                                                                                                                                                                              | F. Yasuda   | F. Yasuda   | H. Kamada   |
|                                                    |                                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |      |      |      |                                                                                     | Initial design    | June16,2009 | K. T | K. T | T. U                                                                                                                                                                                                                                                                              |             |             |             |
| PAGE                                               | SYMB                                 | BACKGROUND | DATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | APPD | CHKD | DSGD | PAGE | SYMB                                                                                | BACKGROUND        | DATE        | APPD | CHKD | DSGD                                                                                                                                                                                                                                                                              |             |             |             |

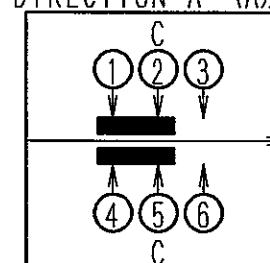
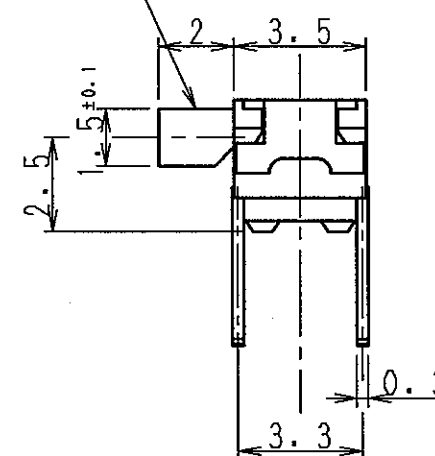
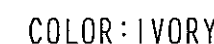
| DOCUMENT No. |                                     | TITLE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | PRODUCT SPECIFICATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                              | PAGE |
|--------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| SSSS2-S-859  |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 製品仕様書                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2/6  |
|              |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |
|              | Items 項目                            | Test conditions 試験条件                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | Criteria 判定基準                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |      |
| 5.3          | Robustness of actuator<br>操 作 部 強 度 | A static load of <u>20 N</u> shall be applied in the operating direction of actuator for 15 s.<br>操作部の作動方向に <u>20 N</u> の静荷重を15秒間加える。<br>A static load of <u>10 N</u> shall be applied in the pull direction of actuator for 15 s.<br>操作部の引張方向に <u>10 N</u> の静荷重を15秒間加える。<br>Vertical knob type(つまみ上出しタイプ)<br>A static load of <u>10 N</u> shall be applied in the perpendicular direction of operation at the tip of actuator for 15 s.<br>操作部の先端に作動方向と直角に <u>10 N</u> の静荷重を15秒間加える。<br>Horizontal knob type(つまみ横出しタイプ)<br>A static load of <u>5 N</u> shall be applied in the perpendicular direction of operation at the tip of actuator for 15 s.<br>操作部の先端に作動方向と直角に <u>5 N</u> の静荷重を15秒間加える。 |  | Shall be free from pronounced wobble, deformation and mechanical abnormalities.<br>Electrical performance requirement specified in item 4 shall be satisfied.<br>著しいガタ及び曲がりのないこと。<br>機械的に異常のないこと。<br>また、試験後 4項の電気的性能を満足すること。                                                                                                                                                                                                                                                        |      |
| 5.4          | Wobble of actuator<br>操 作 部 の 振 れ   | Run-out(P-P) shall be measured by applying a static load of 0.5N in the perpendicular direction of operation at the tip of actuator.<br>操作部の先端に作動方向と直角に 0.5N の静荷重を加え、振れ幅(最大値)を測定する。                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | P-P: <u>0.6</u> mm MAX                                                                                                                                                                                                                                                                                                                                                                                                                                                              |      |
| 5.5          | Vibration<br>耐 振 性                  | Switch shall be secured to a testing machine by a normal mounting device and method.<br>Switch shall be measured after following test.<br>スイッチを正規の取付用具、取付方法で試験機に固定し、下記条件で試験を行い、試験後測定する。<br>(1)Vibration frequency range 振動数範囲: 10~55 Hz<br>(2>Total amplitude 全振幅: 1.5 mm<br>(3)Sweep ratio 掃引の割合: 10-55-10 Hz Approx. 1 min 約1分<br>(4)Method of changing the sweep vibration frequency: Logarithmic or linear<br>掃引振動数の変化方法 対数又は直線近似<br>(5)Direction of vibration: Three perpendicular directions including actuator<br>振動の方向 操作部を含む垂直3方向<br>(6)Duration 振動時間: 2 h each (6 h in total) 各 2時間 (計 6時間)                                                                                             |  | Contact resistance 接触抵抗 (Item 4.1):<br><u>70</u> mΩ MAX<br>Insulation resistance 絶縁抵抗(Item 4.2):<br><u>100</u> MΩ MIN<br>Voltage proof 耐電圧 (Item 4.3):<br>Apply <u>500</u> V AC for 1 min.<br>No dielectric breakdown shall occur.<br>絶縁破壊のないこと。<br>Operating force 作動力 (Item 5.1):<br>Within specified value.<br>規格値内とする。<br>Shall be free from mechanical abnormalities.<br>機械的に異常がないこと。                                                                                          |      |
| 5.6          | Shock<br>耐 衝 撃 性                    | Switch shall be measured after following test.<br>下記条件で試験を行い、試験後測定する。<br>(1)Mounting method 取付方法: Normal mounting method<br>正規の方法で取り付ける。<br>(2)Acceleration 加速度: 490 m/s <sup>2</sup><br>(3)Duration 作用時間: 11 ms<br>(4)Test direction 試験方向: 6 directions 6 面<br>(5)Number of shocks 試験回数: 3 times per direction<br>(18 times in total)<br>各方向各3回 (計18回)                                                                                                                                                                                                                                                                                                                                           |  | <br>Contact resistance 接触抵抗 (Item 4.1):<br><u>70</u> mΩ MAX<br>Insulation resistance 絶縁抵抗(Item 4.2):<br><u>100</u> MΩ MIN<br>Voltage proof 耐電圧 (Item 4.3):<br>Apply <u>500</u> V AC for 1 min.<br>No dielectric breakdown shall occur.<br>絶縁破壊のないこと。<br>Operating force 作動力 (Item 5.1):<br>Within specified value.<br>規格値内とする。<br>Shall be free from mechanical abnormalities.<br>機械的に異常がないこと。 |      |
| 5.7          | Solderability<br>はんだ付け性             | Switch shall be checked after following test.<br>下記条件で試験を行い、試験後確認する。<br>(1)Solder はんだ: Sn-3.0Ag-0.5Cu<br>(2)Flux フラックス: EC-19S-8<br>(3)Soldering temperature はんだ温度: 245±5 °C<br>Immersing time 浸漬時間: 3±0.5 s<br>Flux immersing time shall be 5~10 s in normal room temperature.<br>ただし、フラックス浸漬は常温で5~10秒とする。<br>(4)Immersion depth: Immersion depth shall be at copper plating portion for<br>浸漬深さ P.C.B. terminal after mounting.<br>Thickness of P.C.B.: 1.6 mm<br>プリント基板用端子はプリント基板(t1.6)実装後、銅箔面まで浸漬。                                                                                                                                                                                            |  | More than <u>90</u> % of immersed part shall be covered with solder.<br>If frame is made of tin-plate, cutting section shall not be applied.<br>浸漬した部分の <u>90</u> %以上がはんだで覆われていること。<br>ただし、ぶりき枠の場合は、破断面は適用しない。                                                                                                                                                                                                                                                                      |      |

|                             |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |             |                       |                        |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                   |                                                                                                                                                                                                                |  |
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| DOCUMENT No.<br>SSSS2-S-859 |                                        | TITLE<br>製品仕様書                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | PAGE<br>3/6        |             |                       |                        |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                   |                                                                                                                                                                                                                |  |
|                             |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |             |                       |                        |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                   |                                                                                                                                                                                                                |  |
|                             | Items 項目                               | Test conditions 試験条件                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Criteria 判定基準                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |             |                       |                        |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                   |                                                                                                                                                                                                                |  |
| 5.8                         | Resistance to soldering heat<br>はんだ耐熱性 | <div>The test shall be conducted under the following conditions.<br/>下記条件で試験を行う。</div> <div>(1)Solder はんだ: Sn-3.0Ag-0.5Cu<br/>(2)Flux フラックス: EC-19S-8<br/>(3)Temperature and immersing time 温度と浸漬時間</div> <table><tr><td></td><td>Temperature 温度(°C)</td><td>Time 時間 (s)</td></tr><tr><td>Dip soldering デイップはんだ</td><td>260± 5</td><td>3±1 Once 1回</td></tr><tr><td>Manual soldering 手はんだ</td><td>350±10</td><td>3 +1/0 * Twice 2回</td></tr></table> <div>* Second soldering shall be conducted after the switch cooled down.<br/>1回目終了後、一旦常温に戻すことを条件とする。</div> <div>(4)Immersion depth: Immersion depth shall be at copper plating portion for P.C.B. terminal after mounting.<br/>浸漬深さ Thickness of P.C.B.(Single sided copper clad phenolic resin P.C.B.): 1.2mm 1.6 mm<br/>プリント基板用端子はプリント基板(片面銅張りフェノール樹脂積層板t1.2 t1.6)実装後、銅箔面まで浸漬。</div> <div>(5)Pre-heating condition of dip soldering *Temperature(At the upside surface of P.C.B.): 100°C MAX<br/>デイップはんだのプリヒート条件 温度(プリント基板の上面)<br/>*Time :60 s MAX<br/>時間</div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Temperature 温度(°C) | Time 時間 (s) | Dip soldering デイップはんだ | 260± 5                 | 3±1 Once 1回 | Manual soldering 手はんだ                                                                                                                                                                                                                                                                                                                                                                                                                                              | 350±10 | 3 +1/0 * Twice 2回 | <div>No abnormalities shall be observed in appearance and operation. The electrical performance requirements specified in item 4 shall be satisfied.<br/>外観に著しい変形のないこと。<br/>また、動作に異常がなく、4項の電気的性能を満足すること。</div> |  |
|                             | Temperature 温度(°C)                     | Time 時間 (s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |             |                       |                        |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                   |                                                                                                                                                                                                                |  |
| Dip soldering デイップはんだ       | 260± 5                                 | 3±1 Once 1回                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |             |                       |                        |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                   |                                                                                                                                                                                                                |  |
| Manual soldering 手はんだ       | 350±10                                 | 3 +1/0 * Twice 2回                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |             |                       |                        |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                   |                                                                                                                                                                                                                |  |
| 6.Durability 耐久性能           |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |             |                       |                        |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                   |                                                                                                                                                                                                                |  |
|                             | Items 項目                               | Test conditions 試験条件                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Criteria 判定基準                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |             |                       |                        |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                   |                                                                                                                                                                                                                |  |
| 6.1                         | Operating life without load<br>無負荷寿命   | <div>Switch shall be operated 10,000 cycles at 15~20 cycles/min without load.<br/>無負荷にて10,000サイクル(動作速度15~20サイクル/分)連続動作を行う。</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <div>Contact resistance 接触抵抗 (Item 4.1):<br/>100 mΩ MAX<br/>Insulation resistance. measured at DC 100V.<br/>絶縁抵抗 DC 100V : 10 MΩ MIN<br/>Voltage proof 耐電圧 (Item 4.3):<br/>Apply 100 V AC for 1 min.<br/>No dielectric breakdown shall occur.<br/>絶縁破壊のないこと。<br/>Operating force 作動力 (Item 5.1):<br/>Within +10, -30% of specified value.<br/>規格値の +10, -30% 以内。<br/>No abnormalities shall be recognized in appearance and construction.<br/>外観、構造に異常がないこと。</div> |                    |             |                       |                        |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                   |                                                                                                                                                                                                                |  |
| 6.2                         | Operating life with load<br>負荷寿命       | <div>Switch shall be operated at 15~20 cycles/min with condition as following table.<br/>下記表にて(動作速度15~20サイクル/分)連続動作を行う。</div> <table><tr><td colspan="2">Load 負荷</td><td>Cycles</td></tr><tr><td>6 V DC 0.3 A</td><td>(Resistive load)(抵抗負荷)</td><td>10,000</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Load 負荷                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    | Cycles      | 6 V DC 0.3 A          | (Resistive load)(抵抗負荷) | 10,000      | <div>Contact resistance 接触抵抗 (Item 4.1):<br/>130 mΩ MAX<br/>Insulation resistance. measured at DC 100V.<br/>絶縁抵抗 DC 100V : 10 MΩ MIN<br/>Voltage proof 耐電圧 (Item 4.3):<br/>Apply 100 V AC for 1 min.<br/>No dielectric breakdown shall occur.<br/>絶縁破壊のないこと。<br/>Operating force 作動力 (Item 5.1):<br/>Within +10, -30% of specified value.<br/>規格値の +10, -30% 以内。<br/>No abnormalities shall be recognized in appearance and construction.<br/>外観、構造に異常がないこと。</div> |        |                   |                                                                                                                                                                                                                |  |
| Load 負荷                     |                                        | Cycles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |             |                       |                        |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                   |                                                                                                                                                                                                                |  |
| 6 V DC 0.3 A                | (Resistive load)(抵抗負荷)                 | 10,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |             |                       |                        |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                   |                                                                                                                                                                                                                |  |
| 7.Environmental test 耐候性    |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |             |                       |                        |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                   |                                                                                                                                                                                                                |  |
|                             | Items 項目                               | Test conditions 試験条件                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Criteria 判定基準                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |             |                       |                        |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                   |                                                                                                                                                                                                                |  |
| 7.1                         | Cold<br>耐寒性                            | <div>After testing at -40±2°C for 500h, the switch shall be allowed to stand under normal room temperature and humidity conditions for 1 h, and then measurement shall be made within 1 h. Water drops shall be removed.<br/>-40±2°Cにて500時間試験後、常温常湿中に1時間放置し1時間以内に測定する。<br/>ただし、水滴は取り除く。</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <div>Contact resistance 接触抵抗 (Item 4.1):<br/>100 mΩ MAX<br/>Insulation resistance 絶縁抵抗(Item 4.2):<br/>10 MΩ MIN<br/>Voltage proof 耐電圧 (Item 4.3):<br/>Apply 500 V AC for 1 min.<br/>No dielectric breakdown shall occur.<br/>絶縁破壊のないこと。<br/>Operating force 作動力 (Item 5.1):<br/>Within +10, -30% of specified value.<br/>規格値の +10, -30% 以内。<br/>No abnormalities shall be recognized in appearance and construction.<br/>外観、構造に異常がないこと。</div>                      |                    |             |                       |                        |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                   |                                                                                                                                                                                                                |  |

| DOCUMENT No. |                                                                                   | TITLE                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | PAGE                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SSSS2-S-859  |                                                                                   | 製品仕様書                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 4/6                                                                                                                                                                                                                                                                                                                                                                                                                    |
|              |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                        |
|              | Items 項目                                                                          | Test conditions 試験条件                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Criteria 判定基準                                                                                                                                                                                                                                                                                                                                                                                                          |
| 7.2          | Dry heat<br>耐熱性                                                                   | After testing at 85±2℃ for 500h, the switch shall be allowed to stand under normal room temperature and humidity conditions for 1 h, and then measurement shall be made within 1 h.<br>85±2℃にて500時間試験後、常温常湿中に1時間放置し1時間以内に測定する。                                                                                                                                                                                                                                         | Contact resistance 接触抵抗 (Item 4.1):<br>100 mΩ MAX<br>Insulation resistance 絶縁抵抗(Item 4.2):<br>10 MΩ MIN<br>Voltage proof 耐電圧 (Item 4.3):<br>Apply 500 V AC for 1 min.<br>No dielectric breakdown shall occur.<br>絶縁破壊のないこと。<br>Operating force 作動力 (Item 5.1):<br>Within +10, -30% of specified value.<br>規格値の +10, -30% 以内。<br>No abnormalities shall be recognized in appearance and construction.<br>外観、構造に異常がないこと。 |
| 7.3          | Damp heat<br>耐湿性                                                                  | After testing at 60±2℃ and 90～95%RH for 500h, the switch shall be allowed to stand under normal room temperature and humidity conditions for 1 h, and then measurement shall be made within 1 h. Water drops shall be removed.<br>60±2℃、相対湿度90～95%にて500時間試験後、常温常湿中に1時間放置し1時間以内に測定する。ただし、水滴は取り除く。                                                                                                                                                                       | Contact resistance 接触抵抗 (Item 4.1):<br>100 mΩ MAX<br>Insulation resistance 絶縁抵抗(Item 4.2):<br>10 MΩ MIN<br>Voltage proof 耐電圧 (Item 4.3):<br>Apply 100 V AC for 1 min.<br>No dielectric breakdown shall occur.<br>絶縁破壊のないこと。<br>Operating force 作動力 (Item 5.1):<br>Within +10, -30% of specified value.<br>規格値の +10, -30% 以内。<br>No abnormalities shall be recognized in appearance and construction.<br>外観、構造に異常がないこと。 |
| 7.4          | Salt mist<br>塩水噴霧<br>(EIA-364-26)                                                 | Switch shall be checked after following test.<br>下記条件で試験を行い、試験後確認する。<br>(1)Temperature 温度: 35±2℃<br>(2)Salt solution 塩水濃度: 5±1% (Solids by mass) (質量比)<br>(3)Duration 試験時間: 48 ±1 h<br>After the test, salt deposit shall be removed in running water.<br>試験後試料に付着した塩堆積物を流水で落とす。                                                                                                                                                                                       | No remarkable corrosion shall be recognized in metal part.<br>機能上有害な著しいさびがないこと。                                                                                                                                                                                                                                                                                                                                        |
| 7.5          | Change of temperature<br>温度サイクル                                                   | After 5 cycles of following conditions, the switch shall be allowed to stand under normal room temperature and humidity conditions for 1 h, and measurement shall be made within 1 h after that. Water drops shall be removed.<br>下記条件で5サイクル試験後、常温常湿中に1時間放置し1時間以内に測定する。ただし、水滴は取り除く。<br><div><div>85±2℃</div><div>Normal room Temperature 常温</div><div>-40±3℃</div><div><div>30min</div><div>2～3min</div><div>30min</div><div>2～3min</div><div>1cycle</div></div></div> | Contact resistance 接触抵抗 (Item 4.1):<br>100 mΩ MAX<br>Insulation resistance 絶縁抵抗(Item 4.2):<br>10 MΩ MIN<br>Voltage proof 耐電圧 (Item 4.3):<br>Apply 100 V AC for 1 min.<br>No dielectric breakdown shall occur.<br>絶縁破壊のないこと。<br>Operating force 作動力 (Item 5.1):<br>Within +10, -30% of specified value.<br>規格値の +10, -30% 以内。<br>No abnormalities shall be recognized in appearance and construction.<br>外観、構造に異常がないこと。 |
| 7.6          | Damp heat with load<br>(Resistance to silver migration)<br>耐湿負荷<br>(耐銀マイグレーション特性) | DC voltage 1.5 times as much as rated voltage shall be applied continuously between adjacent terminals at 60±2℃ and 90～95%RH. After 500 h testing, switch shall be allowed to stand under normal room temperature and humidity conditions for 1 h, and measurement shall be made within 1 h after that.<br>Water drops shall be removed.<br>60±2℃、相対湿度90～95%にて隣接端子間に定格電圧の1.5倍の直流電圧を連続印加し、500時間試験後、常温常湿中に1時間放置し1時間以内に測定する。ただし、水滴は取り除く。                                  | Insulation resistance 絶縁抵抗 (50V DC):<br>10 MΩ MIN<br>Voltage proof 耐電圧:<br>Apply 100V AC for 1 min.<br>No dielectric breakdown shall occur.<br>AC 100V、1分間印加。<br>絶縁破壊のないこと。                                                                                                                                                                                                                                            |



| DOCUMENT No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | TITLE | PRODUCT SPECIFICATIONS | PAGE |
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| SSSS2-S-859                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       | 製品仕様書                  | 6／6  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |                        |      |
| <div>D. Storage method. 保管方法</div> <div>D1. If you don't use the product immediately, store it as delivered in the following environment: with neither direct sunshine nor corrosive gas and in normal temperatures. However, it is recommended that you should use it as soon as possible before six months pass.<br/>製品は納入形態のまま常温, 常湿で直射日光の当たらず腐食性ガスが発生しない場所に保管し納入から6ヶ月以内を限度として出来るだけ早くご使用下さい。</div> <div>D2. Storage conditions the switches packed before being mounted.<br/>実装前、梱包状態での保管条件<br/>Temperature 温度：-5～35℃<br/>Humidity 湿度：35～85%RH</div> <div>D3. After you break the seal, you should put the remaining in a plastic bag to separate it from the outside and store it in the same environment mentioned above. You should use it up as soon as possible.<br/>開封後はポリ袋で外気との遮断を図り上記と同じ環境下で保管しすみやかにご使用下さい。</div> <div>D4. Do not stack too many switches for strafe.<br/>過剰な積み重ねは行わないで下さい。</div> <div>E. Others. その他</div> <div>E1. This specification will be invalid one year after it is issued, if you don't return it or don't place an order<br/>本仕様書は発行日より1年間を経過して、ご返却又は発注の無い場合は、無効とさせていただきます。</div> <div>E2. Please understand that the specifications other than electric and mechanical characteristics and outside dimensions may be changed at our own direction.<br/>電氣的, 機械的特性, 外観寸法および取付寸法以外につきましては、当社の都合により変更させて頂く事が有りますので、あらかじめご了承下さい。</div> <div>E3. Never use the product beyond the rating. It may catch fire. If you think that the product may be used beyond the rating due to some abnormal conditions, you must take certain protective measures, such as a protective circuit to shut down the current.<br/>定格を超えての使用は火災発生の恐れがありますので絶対に避けて下さい。また異常使用等で定格を超える恐れがある場合は保護回路等で電流遮断等の対策をして下さい。</div> <div>E4. It is recommended to install a protective or redundant circuit, or to perform safety tests when you use the switches for the equipment requiring expensive safety, whatever purposes the equipment is applied for.<br/>用途の如何にかかわらず、高い安全性が求められる機器にお使いになるときは、保護回路や冗長回路を設けて機器の安全を図られると同時に、お得意先において安全性のテストをされることをお勧めします。</div> <div>E5. Though we are confident in switch quality, we cannot deny the possibility that they could fail due to short or open circuit.<br/>Therefore, if you use a switch for a product requiring special safety, we would like you to verify in advance what effects your module would receive in case the switch alone should fail. And secure safety as a whole system by introducing that fail-safe design, i.e. a protection network.<br/>スイッチの品質には万全を尽くしてますが故障モードとしてショート、オープンの発生が皆無とは言えません。安全性が重視されるセットの設計に際しては、SWの単品故障にたいしてセットとしての影響を事前にご検討いただき、保護回路等のフェールセーフ設計のご検討を十分に行い安全を確保して頂きますようにお願いします。</div> |       |                        |      |



FURUKAWA DIV. (A3)