

|                                                                                                                                                            | COUNT                       | DESCRIPTION OF REVISIONS                                                                                        | BY                            | CHKD | DATE                           |                                                                                                                    | COUNT                           | DESCRIPTION OF REVISIONS                | BY       | CHKD | DATE |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------|------|--------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------|-----------------------------------------|----------|------|------|
|                                                                                                                                                            | 4                           | RE-5-1833                                                                                                       | OCU                           | JDH  | 17. 11. 30                     |                                                                                                                    |                                 |                                         |          |      |      |
|                                                                                                                                                            | 1                           | RE-5-2459                                                                                                       | OCU                           | JDH  | 20. 07. 15                     |                                                                                                                    |                                 |                                         |          |      |      |
| APPLICABLE STANDARD                                                                                                                                        |                             |                                                                                                                 |                               |      |                                |                                                                                                                    |                                 |                                         |          |      |      |
| RATING                                                                                                                                                     | OPERATING TEMPERATURE RANGE |                                                                                                                 | -55℃ ~ +85℃                   |      |                                | STORAGE TEMPERATURE RANGE                                                                                          |                                 | -10℃ ~ +50℃(Packed Condition)           |          |      |      |
|                                                                                                                                                            | VOLTAGE                     |                                                                                                                 | 50V [AC(rms) / DC]            |      |                                | OPERATING OR STORAGE HUMIDITY RANGE                                                                                |                                 | Relative Humidity<br>90% MAX(NOT DEWED) |          |      |      |
|                                                                                                                                                            | CURRENT                     |                                                                                                                 | 0.5A [AC(rms) / DC] (note1)   |      |                                | APPLICABLE CABLE                                                                                                   |                                 | FFC/FPC (t=0.2±0.03mm)                  |          |      |      |
| SPECIFICATIONS                                                                                                                                             |                             |                                                                                                                 |                               |      |                                |                                                                                                                    |                                 |                                         |          |      |      |
| ITEM                                                                                                                                                       |                             | TEST METHOD                                                                                                     |                               |      |                                | REQUIREMENTS                                                                                                       |                                 |                                         | QT       | AT   |      |
| CONSTRUCTION                                                                                                                                               |                             |                                                                                                                 |                               |      |                                |                                                                                                                    |                                 |                                         |          |      |      |
| GENERAL EXAMINATION                                                                                                                                        |                             | VISUALLY AND BY MEASURING INSTRUMENT                                                                            |                               |      |                                | ACCORDING TO DRAWING                                                                                               |                                 |                                         | O        | O    |      |
| MARKING                                                                                                                                                    |                             | CONFIRMED VISUALLY                                                                                              |                               |      |                                |                                                                                                                    |                                 |                                         | O        | O    |      |
| ELECTRICAL CHARACTERISTICS                                                                                                                                 |                             |                                                                                                                 |                               |      |                                |                                                                                                                    |                                 |                                         |          |      |      |
| CONTACT RESISTANCE                                                                                                                                         |                             | MATE APPLICABLE FPC/FFC AND APPLY A CURRENT OF 1mA DC(OR 1,000Hz)                                               |                               |      |                                | 100 mΩ MAX.<br>INCLUDING FFC/FPC BULK RESISTANCE(L=8mm)                                                            |                                 |                                         | O        | O    |      |
| INSULATION RESISTANCE                                                                                                                                      |                             | MATE APPLICABLE FPC/FFC AND APPLY A VOLTAGE OF DC 100V                                                          |                               |      |                                | 500 MΩ MIN.                                                                                                        |                                 |                                         | O        | O    |      |
| VOLTAGE PROOF                                                                                                                                              |                             | MATE APPLICABLE FPC/FFC AND APPLY A VOLTAGE OF AC 150V FOR 1 min.                                               |                               |      |                                | NO FLASHOVER OR BREAKDOWN.                                                                                         |                                 |                                         | O        | O    |      |
| MECHANICAL CHARACTERISTICS                                                                                                                                 |                             |                                                                                                                 |                               |      |                                |                                                                                                                    |                                 |                                         |          |      |      |
| FPC RETENSION FORCE                                                                                                                                        |                             | MEASURE BY APPLICABLE FPC/FFC(t=0.2)<br>AT INITIAL CONDITION                                                    |                               |      |                                | ①VERTICAL DIRECTION : 0.25N/Pin MIN.<br>②HORIZONTAL DIRECTION : 0.25N/Pin MIN.                                     |                                 |                                         | O        | -    |      |
| MECHANICAL OPERATION                                                                                                                                       |                             | 20 TIMES INSERTIONS AND EXTRACTIONS                                                                             |                               |      |                                | ①CONTACT RESISTANCE: 100mΩ MAX<br>②NO DAMAGE,CRACK AND LOOSENESS OF PARTS                                          |                                 |                                         | O        | -    |      |
| VIBRATION                                                                                                                                                  |                             | FREQUENCY 10 ~ 55 Hz, HALF AMPLITUDE 0.75 mm<br>AT 2h, IN 3 DIRECTIONS                                          |                               |      |                                | ①NO ELECTRICAL DISCONTINUITY OF 1μs.<br>②CONTACT RESISTANCE : 100mΩ MAX                                            |                                 |                                         | O        | -    |      |
| SHOCK                                                                                                                                                      |                             | 981m/s <sup>2</sup> DIRECTION OF PULSE 6ms AT 3 TIMES<br>IN 3 DIRECTIONS.                                       |                               |      |                                | ③NO DAMAGE,CRACK AND LOOSENESS OF PARTS                                                                            |                                 |                                         | O        | -    |      |
| ENVIRONMENTAL CHARACTERISTICS                                                                                                                              |                             |                                                                                                                 |                               |      |                                |                                                                                                                    |                                 |                                         |          |      |      |
| DAMP HEAT(STEADY STATE)                                                                                                                                    |                             | EXPOSED AT 40℃, 90~95 %, 96Hr.                                                                                  |                               |      |                                | ①CONTACT RESISTANCE: 100 mΩ MAX.                                                                                   |                                 |                                         | O        | -    |      |
| RAPID CHAGE OF TEMPERATURE                                                                                                                                 |                             | TEMPERATURE : -55 → 15~35 → +85 → 15~35 ℃<br>TIME : 30 → 2~3 → 30 → 2~3 min.<br>5 CYCLES WITH ABOVE CONDITIONS. |                               |      |                                | ②INSULATION RESISTANCE: 100 MΩ MIN.<br>③NO DAMAGE, CRACK OR LOOSENESS OF PARTS.                                    |                                 |                                         | O        | -    |      |
| DAMP HEAT, CYCLE                                                                                                                                           |                             | TEMPERATURE -10→+65<br>HUMIDITY : 90~95%<br>10 CYCLE(240Hr)                                                     |                               |      |                                | ①CONTACT RESISTANCE: 100mΩ MAX.<br>②INSULATION RESISTANCE: 100 MΩ MIN.<br>③NO DAMAGE, CRACK OR LOOSENESS OF PARTS. |                                 |                                         | O        | -    |      |
| DRY HEAT                                                                                                                                                   |                             | EXPOSED AT 85℃, 96Hr                                                                                            |                               |      |                                | ①CONTACT RESISTANCE : 100mΩ MAX                                                                                    |                                 |                                         | O        | -    |      |
| COLD                                                                                                                                                       |                             | EXPOSED AT -55℃, 96Hr                                                                                           |                               |      |                                | ②NO DAMAGE, CRACK OR LOOSENESS OF PARTS.                                                                           |                                 |                                         | O        | -    |      |
| CORROSION SALT SPRAY                                                                                                                                       |                             | EXPOSED AT 35℃, 5 % SALT WATER SPRAY FOR 96Hr                                                                   |                               |      |                                | ①CONTACT RESISTANCE 100mΩ MAX<br>②NO DAMAGE, CRACK OR LOOSENESS OF PARTS.                                          |                                 |                                         | O        | -    |      |
| HYDROGEN SULPHIDE                                                                                                                                          |                             | EXPOSED IN 3 PPM FOR 96Hr.<br>(TEST STANDARD : JEIDA-38)                                                        |                               |      |                                | ③NO EVIDENCE OF CORROSION WHICH AFFECTS<br>TO OPERATION OF CONNECTOR.                                              |                                 |                                         | O        | -    |      |
| RESISTANCE TO SOLDERING HEAT                                                                                                                               |                             | PROFILE : 250℃ MAX.<br>230℃ WITHIN 60 sec                                                                       |                               |      |                                | ①NO DEFORMATION OF CASE OF EXCESSIVE<br>LOOSENESS OF THE TERMINALS.<br>②NO DAMAGE OF ELECTRICAL PERFORMANCE        |                                 |                                         | O        | -    |      |
| SOLDERABILITY<br>                                                                                                                                          |                             | SOLDER DIPPING TEMPERATURE 245±5℃<br>(TEST STANDARD : MIL-STD-202)<br>3±0.3 SEC                                 |                               |      |                                | A NEW UNIFORM COATING OF SOLDER<br>SHALL COVER A MINIMUM OF 95% OF<br>THE SURFACE BEING IMMERSSED.                 |                                 |                                         | O        | -    |      |
| (note 1)<br>WHEN THE SAME VALUE OF CURRENT ARE APPLIED TO ALL CONTACTS AT THE SAME TIME IN ONCE,<br>SET THE CURRENT TO THE 70% OF THE RATED CURRENT VALUE. |                             |                                                                                                                 |                               |      |                                |                                                                                                                    |                                 |                                         |          |      |      |
| REMARKS                                                                                                                                                    |                             | CONDITIONS FOR TESTING                                                                                          |                               |      | DRAWN                          | DESIGNED                                                                                                           | CHECKED                         | APPROVED                                | RELEASED |      |      |
|                                                                                                                                                            |                             |                                                                                                                 |                               |      | OH.C.U<br>17. 03. 06           | OH.C.U<br>17. 03. 06                                                                                               | CHO.D.H<br>17. 03. 06           | SONG.H.C<br>17. 03. 06                  |          |      |      |
| UNLESS OTHERWISE SPECIFIED, REFER TO JIS C 5402.                                                                                                           |                             |                                                                                                                 |                               |      |                                |                                                                                                                    |                                 |                                         |          |      |      |
| NOTE QT: QUALIFICATION TEST AT: ASSURANCE TEST O: APPLICABLE TEST                                                                                          |                             |                                                                                                                 |                               |      |                                |                                                                                                                    |                                 |                                         |          |      |      |
| HIROSE KOREA CO.,LTD.                                                                                                                                      |                             |                                                                                                                 | REFERENCE SPECIFICATION SHEET |      |                                |                                                                                                                    | PART NO.<br>TF13BA-SERIES (800) |                                         |          |      |      |
| CODE NO.(OLD)                                                                                                                                              |                             | DRAWING NO.<br>ELC4-632308-80                                                                                   |                               |      | CODE NO.<br>CL 6508-0036-0-800 |                                                                                                                    |                                 |                                         |          | 1/1  |      |