

| APPLICABLE STANDARD |                             |                 |                                     |  |
|---------------------|-----------------------------|-----------------|-------------------------------------|--|
| RATING              | OPERATING TEMPERATURE RANGE | -55 °C TO 85 °C | STORAGE TEMPERATURE RANGE           | -10 °C TO 50 °C (PACKED CONDITION)     |
|                     | VOLTAGE                     | 50 V AC / DC    | OPERATING OR STORAGE HUMIDITY RANGE | RELATIVE HUMIDITY 90 % MAX (NOT DEWED) |
|                     | CURRENT                     | 0.5 A (note 1)  | APPLICABLE CABLE                    | t=0.2±0.03mm, GOLD PLATING             |

### SPECIFICATIONS

| ITEM | TEST METHOD | REQUIREMENTS | QT | AT |
|------|-------------|--------------|----|----|
|------|-------------|--------------|----|----|

#### CONSTRUCTION

|                     |                                       |                       |   |   |
|---------------------|---------------------------------------|-----------------------|---|---|
| GENERAL EXAMINATION | VISUALLY AND BY MEASURING INSTRUMENT. | ACCORDING TO DRAWING. | × | × |
| MARKING             | CONFIRMED VISUALLY.                   |                       | × | × |

#### ELECTRIC CHARACTERISTICS

|                       |                                |   |   |   |
|-----------------------|--------------------------------|---|---|---|
| VOLTAGE PROOF         | 150 V AC FOR 1 min.            | NO FLASHOVER OR BREAKDOWN.                                | × | × |
| INSULATION RESISTANCE | 100 V DC.                      | 500 MΩ MIN.   | × | × |
| CONTACT RESISTANCE    | AC 20 mV MAX ( 1 KHz ), 1 mA . | 100 mΩ MAX.<br>INCLUDING FPC, FFC BULK RESISTANCE (L=8mm) | × | × |

#### MECHANICAL CHARACTERISTICS

|                      |  |   |   |   |
|----------------------|--|---|---|---|
| VIBRATION            | FREQUENCY 10 TO 55 Hz, HALF AMPLITUDE 0.75 mm, - m/s <sup>2</sup> FOR 10 CYCLES IN 3 DIRECTIONS. | ① NO ELECTRICAL DISCONTINUITY OF 1 μs.<br>② CONTACT RESISTANCE: 100 mΩ MAX.<br>③ NO DAMAGE, CRACK AND LOOSENESS OF PARTS. | × | — |
| SHOCK                | 981 m/s <sup>2</sup> , DURATION OF PULSE 6 ms AT 3 TIMES IN 3 DIRECTIONS.                        |   | × | — |
| MECHANICAL OPERATION | 20 TIMES INSERTIONS AND EXTRACTIONS.   | ① CONTACT RESISTANCE: 100 mΩ MAX.<br>② NO DAMAGE, CRACK AND LOOSENESS OF PARTS.   | × | — |
| FPC RETENSION FORCE  | MEASURED BY APPLICABLE FPC. (THICKNESS OF FPC SHALL BE t=0.20mm AT INITIAL CONDITION.)           | ① DIRECTION OF INSERTION : 0.15N × n MIN.<br>② VERTICAL DIRECTION OF INSERTION : 0.15N × n MIN. (note 2)                  | × | — |
| LOCK OPERATION FORCE | MEASURED BY APPLICABLE FPC. (THICKNESS OF FPC SHALL BE t=0.20mm AT INITIAL CONDITION.)           | ① CLOSING FORCE :<br>0.3N × n MAX. (4 ~ 8 POS.)<br>0.1N × n MAX. (9 ~ 50 POS.)<br>② OPENING FORCE : 0.05N × n MIN.        | × | — |

#### ENVIRONMENTAL CHARACTERISTICS

|                             |   |  |   |   |
|-----------------------------|---|--|---|---|
| CORROSION SALT MIST         | EXPOSED AT 35 °C , 5 % SALT WATER SPRAY FOR 96 h.   | ① CONTACT RESISTANCE: 100 mΩ MAX.<br>② NO DAMAGE, CRACK AND LOOSENESS OF PARTS.<br>③ NO EVIDENCE OF CORROSION WHICH AFFECTS TO OPERATION OF CONNECTOR.                                   | × | — |
| RAPID CHANGE OF TEMPERATURE | TEMPERATURE -55 → +15 TO +35 → +85 → +15 TO +35 °C<br>TIME 30 → 2~3 → 30 → 2~3 min<br>UNDER 5 CYCLES. | ① CONTACT RESISTANCE: 100 mΩ MAX.<br>② INSULATION RESISTANCE: 50 MΩ MIN.<br>③ NO DAMAGE, CRACK AND LOOSENESS OF PARTS.   | × | — |
| DAMP HEAT (STEADY STATE)    | EXPOSED AT 40 °C,<br>RELATIVE HUMIDITY 90 TO 95 %, 96 h.  |  | × | — |
| DAMP HEAT, CYCLIC           | EXPOSED AT -10 TO +65 °C,<br>RELATIVE HUMIDITY 90 TO 96 %, 10 CYCLES, TOTAL 240 h.                    | ① CONTACT RESISTANCE: 100 mΩ MAX.<br>② INSULATION RESISTANCE: 1 MΩ MIN. (AT HIGH HUMIDITY)<br>③ INSULATION RESISTANCE: 50 MΩ MIN. (AT DRY)<br>④ NO DAMAGE, CRACK AND LOOSENESS OF PARTS. | × | — |

| COUNT | DESCRIPTION OF REVISIONS | DESIGNED | CHECKED | DATE |
|-------|--------------------------|----------|---------|------|
| 0     |                          |          |         |      |

|        |          |             |          |
|--------|----------|-------------|----------|
| REMARK | APPROVED | RI.TAKAYASU | 06.02.15 |
|        | CHECKED  | HY.KISHI    | 06.02.15 |
|        | DESIGNED | KK.FURUKAWA | 06.02.15 |
|        | DRAWN    | KK.YAMAMOTO | 06.02.15 |

Unless otherwise specified, refer to JIS C 5402.

|  |             |                |
|--|-------------|----------------|
| Note QT:Qualification Test AT:Assurance Test X:Applicable Test | DRAWING NO. | ELC4-155218-03 |
|--|-------------|----------------|

|            |                           |          |                      |       |
|------------|---------------------------|----------|----------------------|-------|
| <b>HRS</b> | SPECIFICATION SHEET       | PART NO. | FH19C-**S-0.5SH (05) |       |
|            | HIROSE ELECTRIC CO., LTD. | CODE NO. | CL580                | ▲ 1/2 |

| SPECIFICATIONS   |  |   |             |                      |                |
|--|--|---|-------------|----------------------|----------------|
| ITEM   | TEST METHOD  | REQUIREMENTS  | QT          | AT                   |                |
| DRY HEAT   | EXPOSED AT 85 °C, 96 h.  | ① CONTACT RESISTANCE: 100 mΩ MAX.   | x           | —                    |                |
| COLD   | EXPOSED AT -55°C, 96 h.  | ② NO DAMAGE, CRACK AND LOOSENESS OF PARTS.  | x           | —                    |                |
| SURPHUR DIOXIDE<br>[JIS C 0090]  | EXPOSED AT 40 °C , RELATIVE HUMIDITY 80% ,<br>25 PPM FOR 96 h.   | ① CONTACT RESISTANCE: 100 mΩ MAX.   | x           | —                    |                |
| HYDROGEN SULPHIDE<br>[JIS C 0092]  | EXPOSED AT 40 °C , RELATIVE HUMIDITY 80% ,<br>10 ~ 15 PPM FOR 96 h.  | ② NO DAMAGE, CRACK AND LOOSENESS OF PARTS.<br>③ NO EVIDENCE OF CORROSION WHICH AFFECTS TO OPERATION OF CONNECTOR. | x           | —                    |                |
| SOLDERABILITY  | SOLDERED AT SOLDER TEMPERATURE, 235 °C<br>FOR IMMERSION DURATION, 2 sec.   | A NEW UNIFORM COATING OF SOLDER SHALL COVER A MINIMUM OF 95 % OF THE SURFACE BEING IMMersed.                      | x           | —                    |                |
| RESISTANCE TO<br>SOLDERING HEAT  | 1) REFLOW SOLDERING :<br>PEAK TMP. 250 °C MAX .<br>REFLOW TMP. 230 °C MIN FOR 60 sec.<br>2) SOLDERING IRONS :<br>TMP. 350 ± 5 °C FOR 5 sec . | NO DEFORMATION OF CASE OF EXCESSIVE LOOSENESS OF THE TERMINALS.   | x           | —                    |                |
| <p><b>(note 1)</b></p> <p>WHEN THE SAME VALUE OF CURRENT ARE APPLID TO ALL CONTACTS AT THE SAME TIME IN ONCE, SET THE CURRENT TO THE 70 % OF THE RATED CURRENT VALUE.</p> <p><b>(note 2)</b></p> <p>THIS PRODUCT HAS FLIP-LOCK CONSTRUCTION. FASTEN FPC ON PCB OR SOMETHING FIXED IF FORCE IN VERTICAL DIRECTION SHALL BE PREDICTED.</p> |  |   |             |                      |                |
| Note QT:Qualification Test AT:Assurance Test X:Applicable Test   |  |   | DRAWING NO. |                      | ELC4-155218-03 |
| <b>HRS</b>   | SPECIFICATION SHEET  |   | PART NO.    | FH19C-**S-0.5SH (05) |                |
|  | HIROSE ELECTRIC CO., LTD.  |   | CODE NO     | CL580                | △ 2/2          |