

Mar.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.  
In case of consideration for using Automotive equipment / device which demand high reliability, kindly contact our sales window correspondents.

| 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                    | APPLICABLE CABLE  | t=0.3±0.05mm, GOLD PLATING.(4~30 POS.)<br>t=0.3±0.03mm, GOLD PLATING.(OVER 31 POS.) |                |
| SPECIFICATIONS   |  |                          |   |   |                |
| ITEM   | TEST METHOD  |                          | REQUIREMENTS  | QT  | AT             |
| CONSTRUCTION   |  |                          |   |   |                |
| GENERAL EXAMINATION  | VISUALLY AND BY MEASURING INSTRUMENT.  |                          | ACCORDING TO DRAWING.   | x   | x              |
| MARKING  | CONFIRMED VISUALLY.  |                          |   | x   | x              |
| ELECTRIC CHARACTERISTICS                                       |  |                          |   |   |                |
| VOLTAGE PROOF  | 150 V AC FOR 1 min.  |                          | NO FLASHOVER OR BREAKDOWN.  | x   | x              |
| INSULATION RESISTANCE  | 100 V DC.  |                          | 500 MΩ MIN.   | x   | x              |
| CONTACT RESISTANCE   | AC 20 mV MAX ( 1 KHz ) , 1 mA .  |                          | 50 mΩ MAX.<br>INCLUDING FPC,FFC BULK RESISTANCE (L=8mm)   | x   | x              |
| 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: 50 mΩ MAX.<br>③ NO DAMAGE, CRACK AND LOOSENESS OF PARTS.  | x   | —              |
| SHOCK  | 981 m/s <sup>2</sup> , DURATION OF PULSE 6 ms AT 3 TIMES IN 3 DIRECTIONS.                        |                          |   | x   | —              |
| MECHANICAL OPERATION   | 20 TIMES INSERTIONS AND EXTRACTIONS.   |                          | ① CONTACT RESISTANCE: 50 mΩ MAX.<br>② NO DAMAGE, CRACK AND LOOSENESS OF PARTS.  | x   | —              |
| FPC RETENSION FORCE  | MEASURED BY APPLICABLE FPC. (THICKNESS OF FPC SHALL BE t=0.30mm AT INITIAL CONDITION.)           |                          | DIRECTION OF INSERTION :<br>0.3N × n MIN.(4~30 POS.)<br>0.2N × n MIN.(OVER 31 POS.) (note 1)  | x   | —              |
| ENVIRONMENTAL CHARACTERISTICS                                  |  |                          |   |   |                |
| CORROSION SALT MIST  | EXPOSED AT 35±2 °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.<br>④ CONTACT RESISTANCE: 50 mΩ MAX.<br>⑤ INSULATION RESISTANCE: 50 MΩ MIN.<br>⑥ NO DAMAGE, CRACK AND LOOSENESS OF PARTS. | x   | —              |
| RAPID CHANGE OF TEMPERATURE                                    | TEMPERATURE-55→+15TO+35→+85→+15TO+35°C<br>TIME 30→ 2 TO 3 → 30→ 2 TO 3 min UNDER 5 CYCLES.       |                          |   | x   | —              |
| DAMP HEAT (STEADY STATE)                                       | EXPOSED AT 40±2 °C,<br>RELATIVE HUMIDITY 90 TO 95 %, 96 h.                                       |                          |   | x   | —              |
| DAMP HEAT,CYCLIC   | EXPOSED AT -10 TO +65 °C,<br>RELATIVE HUMIDITY 90 TO 96 %, 10 CYCLES,TOTAL 240 h.                |                          |   | x   | —              |
|  | COUNT  | DESCRIPTION OF REVISIONS | DESIGNED  | CHECKED   | DATE           |
|  | 0  |                          |   |   |                |
| REMARK   |  |                          | APPROVED  | MO. ISHIDA  | 07.02.17       |
|  |  |                          | CHECKED   | NM. NISHIMATSU  | 07.02.17       |
|  |  |                          | DESIGNED  | YH. KOTANI  | 07.02.14       |
| Unless otherwise specified, refer to JIS C 5402.               |  |                          | DRAWN   | YH. KOTANI  | 07.02.14       |
| Note QT:Qualification Test AT:Assurance Test X:Applicable Test |  |                          | DRAWING NO.   |   | ELC4-156169-02 |
| <b>HRS</b>   | SPECIFICATION SHEET  |                          | PART NO.  | FH33-**S-0.5SH(10)  |                |
|  | HIROSE ELECTRIC CO., LTD.  |                          | CODE NO.  | CL580   | △ 1/2          |



Mar. 1. 2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.  
In case of consideration for using Automotive equipment / device which demand high reliability, kindly contact our sales window correspondents.

## SPECIFICATIONS

| ITEM                              | TEST METHOD   | REQUIREMENTS   | QT | AT |
|-----------------------------------|---|--|----|----|
| DRY HEAT                          | EXPOSED AT 85±2 °C, 96 h.   | ① CONTACT RESISTANCE: 50 mΩ MAX.<br>② NO DAMAGE, CRACK AND LOOSENESS OF PARTS.   | x  | —  |
| COLD                              | EXPOSED AT -55±3°C, 96 h.   |  | x  | —  |
| SURPHUR DIOXIDE<br>[JIS C 0090]   | EXPOSED AT 40±2 °C , RELATIVE HUMIDITY 80 ±5%<br>25±5 PPM 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. | x  | —  |
| HYDROGEN SULPHIDE<br>[JIS C 0092] | EXPOSED AT 40±2 °C , RELATIVE HUMIDITY 80±5% ,<br>10 TO 15 PPM FOR 96 h.  |  | x  | —  |
| SOLDERABILITY                     | SOLDERED AT SOLDER TEMPERATURE,<br>235 ±5°C FOR IMMERSION DURATION,<br>2±0.5 sec.   | A NEW UNIFORM COATING OF SOLDER SHALL COVER A MINIMUM OF 95 % OF THE SURFACE BEING IMMERSED.   | x  | —  |
| RESISTANCE TO 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 ± 10 °C FOR 5±1 sec . | NO DEFORMATION OF CASE OF EXCESSIVE LOOSENESS OF THE TERMINALS.  | x  | —  |

**(note1)**

THIS PRODUCT HAS FLIP-LOCK CONSTRUCTION. FASTEN FPC ON PCB OR SOMETHING FIXED IF FORCE IN VERTICAL DIRECTION SHALL BE PREDICTED.

|   |                           |             |          |                     |   |     |
|---|---------------------------|-------------|----------|---------------------|---|-----|
| Note QT:Qualification Test AT:Assurance Test X:Applicable Test                      |                           | DRAWING NO. |          | ELC4-156169-02      |   |     |
|  | SPECIFICATION SHEET       |             | PART NO. | FH33-**S-0. 5SH(10) |   |     |
|   | HIROSE ELECTRIC CO., LTD. |             | CODE NO  | CL580               |  | 2/2 |