

|                                                                |                             |                                                                                                        |                                                                                                                                                                                         |                                        |            |
|----------------------------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------|
| 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             |            |
| 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 .                                                                        | 50 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 AXIAL DIRECTIONS. | ① NO ELECTRICAL DISCONTINUITY OF 1 μs.<br>② CONTACT RESISTANCE: 50 mΩ MAX.                                                                                                              | ×                                      | —          |
| SHOCK                                                          |                             | 981 m/s <sup>2</sup> , DURATION OF PULSE 6 ms AT 3 TIMES IN 3 BOTH AXIAL DIRECTIONS.                   | ③ NO DAMAGE, CRACK AND LOOSENESS OF PARTS.                                                                                                                                              | ×                                      | —          |
| MECHANICAL OPERATION                                           |                             | 20 TIMES INSERTIONS AND EXTRACTIONS.                                                                   | ① CONTACT RESISTANCE: 50 mΩ MAX.<br>② NO DAMAGE, CRACK AND LOOSENESS OF PARTS.                                                                                                          | ×                                      | —          |
| FPC RETENTION FORCE                                            |                             | MEASURED BY APPLICABLE FPC. (THICKNESS OF FPC SHALL BE t=0.30mm AT INITIAL CONDITION.)                 | DIRECTION OF INSERTION : 4.8N MIN. (note 1)                                                                                                                                             | ×                                      | —          |
| 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.                                  | ×                                      | —          |
| RAPID CHANGE OF TEMPERATURE                                    |                             | TEMPERATURE-55→+15TO+35→+85→+15TO+35°C<br>TIME 30→ 2 TO 3 → 30→ 2 TO 3min UNDER 5 CYCLES.              | ① CONTACT RESISTANCE: 50 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±2 °C,<br>RELATIVE HUMIDITY 90 TO 95 % , 96 h.                                            |                                                                                                                                                                                         | ×                                      | —          |
| DAMP HEAT,CYCLIC                                               |                             | EXPOSED AT -10 TO +65 °C,<br>RELATIVE HUMIDITY 90 TO 96 % ,<br>10 CYCLES,TOTAL 240 h.                  | ① CONTACT RESISTANCE: 50 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       |
| △                                                              |                             |                                                                                                        |                                                                                                                                                                                         |                                        |            |
| REMARK                                                         |                             |                                                                                                        | APPROVED                                                                                                                                                                                | NM. NISHIMATSU                         | 12. 02. 16 |
|                                                                |                             |                                                                                                        | CHECKED                                                                                                                                                                                 | NM. NISHIMATSU                         | 12. 02. 16 |
|                                                                |                             |                                                                                                        | DESIGNED                                                                                                                                                                                | YH. KOTANI                             | 12. 02. 15 |
| Unless otherwise specified, refer to JIS C 5402.               |                             |                                                                                                        | DRAWN                                                                                                                                                                                   | NM. SANPEI                             | 12. 02. 15 |
| Note QT:Qualification Test AT:Assurance Test X:Applicable Test |                             |                                                                                                        | DRAWING NO.                                                                                                                                                                             | ELC4-325187-10                         |            |
| HRS                                                            | SPECIFICATION SHEET         |                                                                                                        | PART NO.                                                                                                                                                                                | FH33J-16S-0. 5SH (10)                  |            |
|                                                                | HIROSE ELECTRIC CO., LTD.   |                                                                                                        | CODE NO.                                                                                                                                                                                | CL580-1331-2-10                        | △ 1/2      |

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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.                                                             | x                     | —                                                                                         |
| COLD                                                                                                                                                           | EXPOSED AT                                                                                                                                      | -55±3°C, 96 h. | ② NO DAMAGE, CRACK AND LOOSENESS OF PARTS.                                                   | x                     | —                                                                                         |
| SULPHUR DIOXIDE<br>[JIS C 0090]                                                                                                                                | EXPOSED AT 40±2 °C , RELATIVE HUMIDITY ±5%<br>25±5 PPM FOR                                                                                      | 80 96 h.       | ① CONTACT RESISTANCE: 100 mΩ MAX.<br>② NO DAMAGE, CRACK AND LOOSENESS OF PARTS.              | x                     | —                                                                                         |
| HYDROGEN SULPHIDE<br>[JIS C 0092]                                                                                                                              | EXPOSED AT 40±2 °C , RELATIVE HUMIDITY 80±5% ,<br>10 TO 15 PPM FOR                                                                              | 96 h.          | ③ NO EVIDENCE OF CORROSION WHICH AFFECTS TO OPERATION OF CONNECTOR.                          | x                     | —                                                                                         |
| SOLDERABILITY                                                                                                                                                  | SOLDERED AT SOLDER TEMPERATURE, 235 ±5°C FOR IMMERSION DURATION, 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                     | —                                                                                         |
| <div>(note1)</div> <div>THIS PRODUCT HAS FLIP-LOCK CONSTRUCTION. FASTEN FPC ON PCB OR SOMETHING FIXED IF FORCE IN VERTICAL DIRECTION SHALL BE PREDICTED.</div> |                                                                                                                                                 |                |                                                                                              |                       |                                                                                           |
| Note QT:Qualification Test AT:Assurance Test X:Applicable Test                                                                                                 |                                                                                                                                                 |                | DRAWING NO.                                                                                  | ELC4-325187-10        |                                                                                           |
|                                                                             | SPECIFICATION SHEET                                                                                                                             |                | PART NO.                                                                                     | FH33J-16S-0. 5SH (10) |                                                                                           |
|                                                                                                                                                                | HIROSE ELECTRIC CO., LTD.                                                                                                                       |                | CODE NO                                                                                      | CL580-1331-2-10       |  2/2 |