



**THE DATASHEET OF  
FH67-20S-0.5SV**



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| APPLICABLE STANDARD  |  |                           |  |  |          |
|--|--|---------------------------|--|--|----------|
| RATING   | Operating temperature range  | -55 °C to 125 °C (note 6) | Storage temperature range  | -10°C TO 60°C(Packed condition)                          |          |
|  | Voltage  | 50V AC / DC               | Operating or storage humidity range  | Relative humidity 90% MAX(Not dewed)                     |          |
|  | Current  | 0.50 A                    | Applicable cable (FPC/FFC)   | t=0.33±0.03mm, Gold plating (Ground plate : Tin plating) |          |
| SPECIFICATIONS   |  |                           |  |  |          |
| ITEM   | TEST METHOD  |                           | REQUIREMENTS   | QT   | AT       |
| CONSTRUCTION   |  |                           |  |  |          |
| General examination  | Visually and by measuring instrument.  |                           | According to drawing.  | ×  | ×        |
| Marking  | Confirmed visually.  |                           | (note 1)   | ×  | ×        |
| ELECTRICAL 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 mA .  |                           | [FPC] Initial:60 mΩ MAX、 After each test:80 mΩ MAX (Including bulk resistance L=8mm)<br>[FFC] Initial:80 mΩ MAX、 After each test:100 mΩ MAX (Including bulk resistance L=26mm)   | ×  | —        |
| MECHANICAL CHARACTERISTICS                                     |  |                           |  |  |          |
| Vibration  | Frequency 10 to 55 Hz, half amplitude 0.75 mm, for 10 cycles in 3 axial directions.                    |                           | ① No electrical discontinuity of 1 μs.<br>② Contact resistance: 80 mΩ MAX(FPC) 100. mΩ MAX(FFC)<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 both axial directions.                   |                           |  | ×  | —        |
| Mechanical operation   | 10 times insertions and extractions.   |                           | ① Contact resistance: 80 mΩ MAX(FPC) 100. mΩ MAX(FFC)<br>② No damage, crack and looseness of parts.  | ×  | —        |
| FPC/FFC insertion/extraction force                             | Measured by applicable FPC/FFC. (Thickness of FPC/FFC shall be t=0.33mm at initial condition.)         |                           | Insertion force : Direction of insertion (n : Number of contacts)<br>2+0.35×n N MAX (FPC/FFC) (note 2)<br>2+0.41×n N MAX (Shielded FFC) (note 2)<br>Extraction force : Direction of extraction (n : Number of contacts)<br>4+0.32×n N MAX (FPC/FFC) (note 2)<br>4+0.42×n N MAX (Shielded FFC) (note 2) | ×  | —        |
| FPC/FFC retention force  | Measured by applicable FPC/FFC. (Thickness of FPC/FFC shall be t=0.33mm at initial condition.)         |                           | Direction of extraction (n : Number of contacts)<br>18+0.08×n N MIN (FPC/FFC) (note3)<br>15+0.1×n N MIN (Shielded FFC) (note3)   | ×  | —        |
| ENVIRONMENTAL CHARACTERISTICS                                  |  |                           |  |  |          |
| Rapid change of temperature                                    | Temperature-55→+15 to +35→+125→+15 to +35°C<br>Time 30→ 2 to 3 → 30 → 2 to 3 min<br>Under 1000 cycles. |                           | ① Contact resistance: 80 mΩ MAX(FPC) 100. mΩ MAX(FFC)<br>② Insulation resistance: 50 MΩ MIN.<br>③ No damage, crack and looseness of parts.   | ×  | —        |
| Damp heat (Steady state)                                       | Exposed at 60±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 %, 10 cycles, TOTAL 240 h.                     |                           | ① Contact resistance: 80 mΩ MAX(FPC) 100. mΩ MAX(FFC)<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     |
|  | 1  | DIS-F-00006186            | KN. KOBAYASHI  | HS. HIRAHARA   | 20200615 |
| REMARK   |  |                           | APPROVED   | HH. SHINDO   | 20180517 |
|  |  |                           | CHECKED  | KN. SHIBUYA  | 20180517 |
|  |  |                           | DESIGNED   | SI. TAMAKI   | 20180516 |
|  |  |                           | DRAWN  | DS. HIROWATARI   | 20180516 |
| Unless otherwise specified, refer to IEC 60512.                |  |                           |  |  |          |
| Note QT:Qualification Test AT:Assurance Test X:Applicable Test |  |                           | DRAWING NO.  | ELC-370364-00-00   |          |
|  | SPECIFICATION SHEET  |                           | PART NO.   | FH67-**S-0. 5SV  |          |
|  | HIROSE ELECTRIC CO., LTD.  |                           | CODE NO.   | CL580  | 1/2      |

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## SPECIFICATIONS

| ITEM                                  | TEST METHOD  | REQUIREMENTS  | QT | AT |
|---------------------------------------|--|---|----|----|
| Dry heat                              | Exposed at 125±2°C, 1000 h.  | ① Contact resistance: 80 mΩ MAX(FPC)<br>100. mΩ MAX(FFC)<br>② No damage, crack and looseness of parts | ×  | —  |
| Cold                                  | Exposed at -55±3°C, 1000 h.  |   | ×  | —  |
| Sulphur dioxide<br>[JIS C 60068-2-42] | Exposed at 40±2 °C,<br>Relative humidity 80±5%<br>25±5 ppm for 96 h.   | ① Contact resistance: 80 mΩ MAX(FPC)<br>100. mΩ MAX(FFC)  | ×  | —  |
| Solderability                         | Soldered at solder temperature,<br>245±0.3°C for immersion duration,3±0.3 sec.   | A new uniform coating of solder shall cover a minimum of 95 % of the surface being immersed.          | ×  | —  |
| Resistance to soldering heat          | 1) Reflow soldering :<br>Peak TMP. 250 °C MAX .<br>Reflow TMP. over 220 °C 60 to 90 sec.<br>Number of reflow : 2 times<br>2) Soldering irons :<br>TMP. 350±10 °C for 5±1 sec . | No deformation of case of excessive looseness of the terminals. ( <i>note 4</i> )                     | ×  | —  |

**(note 1)**

This product features "One Action Lock" and vertical mount.  
 "One Action Lock" completes FPC/FFC lock just by inserting the FPC/FFC.  
 Do not operate the actuator when inserting the FPC/FFC.

**(note 2)**

Do not insert the FPC/FFC to this product at an angle.

**(note 3)**

Stabilize the FPC/FFC to PCB or something fixed, if pull-up or pull-down force is expected to be applied to the FPC/FFC.  
 There's a case with FPC/FFC retention force doesn't fulfill the value, because FPC/FFC specification affects the result of FPC/FFC retention force.

**(note 4)**



Blisters which may be generated on the housing do not affect product performance.

**(note 5)**

The occurrence and the length of whisker, and the performance deterioration caused by it are out of the scope of this specification

**4 (note 6)**

The heat resistant temperature when using FFC is 105°C.  
 When the heat resistant temperature of FPC/FFC is less than 125°C/105°C, the heat resistant temperature of FPC/FFC is applied.


|   |                           |             |          |                  |   |
|---|---------------------------|-------------|----------|------------------|---|
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|  | SPECIFICATION SHEET       |             | PART NO. | FH67-**S-0.5SV   |   |
|   | HIROSE ELECTRIC CO., LTD. |             | CODE NO  | CL580            |  2/2 |

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