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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Applicable standard                                                                                                                                                                                                                                                                                         |                             |                                                                                                                                                                             |                                                                                                                                                                          |                                                                        |                                                                                           |
| Rating<br>                                                                                                                                                                                                                 | Operating Temperature Range | -55to +105°C (Note1)                                                                                                                                                        | Storage Temperature Range                                                                                                                                                | -10 °C to +60°C (Note3)                                                |                                                                                           |
|                                                                                                                                                                                                                                                                                                             | Operating Humidity Range    | 20% to 80% (Note2)                                                                                                                                                          | Storage Humidity Range                                                                                                                                                   | 40% to 70% (Note3)                                                     |                                                                                           |
|                                                                                                                                                                                                                                                                                                             | Applicable Connector        | DF51A-8DP-2DSA/DS(##)<br>DF51-8DEP-2C(##)                                                                                                                                   | Current                                                                                                                                                                  | AWG 22 to 24 : 2.0A<br>AWG 26 : 1.5A<br>AWG 28 : 1.0A<br>AWG 30 : 0.5A |                                                                                           |
|                                                                                                                                                                                                                                                                                                             | Applicable Contact          | DF11-22SC(A)/SCF(A)<br>DF11-2428SC(A)/SCF(A)<br>DF11-30SC(A)/SCF(A)                                                                                                         |                                                                                                                                                                          |                                                                        |                                                                                           |
|                                                                                                                                                                                                                                                                                                             | Voltage                     | 250 V AC/DC                                                                                                                                                                 |                                                                                                                                                                          | UL • C-UL Rating                                                       | Voltage                                                                                   |
|                                                                                                                                                                                                                                                                                                             |                             |                                                                                                                                                                             | Current                                                                                                                                                                  | AWG 22 : 2.0A<br>AWG 24 to 28 : 1.0A<br>AWG 30 : 0.5A                  |                                                                                           |
| 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                                                                                                                                                                                                   |                             |                                                                                                                                                                             |                                                                                                                                                                          |                                                                        |                                                                                           |
| Insulation Resistance                                                                                                                                                                                                                                                                                       |                             | 500 V DC.                                                                                                                                                                   | 1000 MΩ MIN.                                                                                                                                                             |                                                                        | X —                                                                                       |
| Voltage Proof                                                                                                                                                                                                                                                                                               |                             | 650 V AC for 1 min.                                                                                                                                                         | No flashover or breakdown.                                                                                                                                               |                                                                        | X —                                                                                       |
| Mechanical Characteristics                                                                                                                                                                                                                                                                                  |                             |                                                                                                                                                                             |                                                                                                                                                                          |                                                                        |                                                                                           |
| Mechanical Operation (Sn Plating)                                                                                                                                                                                                                                                                           |                             | 30 times insertion and extraction.                                                                                                                                          | No damage, crack or looseness of parts.                                               |                                                                        | X —                                                                                       |
| Mechanical Operation (Au Plating)                                                                                                                                                                                                                                                                           |                             | 50 times insertion and extraction.                                                                                                                                          |                                                                                                                                                                          |                                                                        | X —                                                                                       |
| Mating and unmating Force (Sn Plating)                                                                                                                                                                                                                                                                      |                             | It takes out and inserts with a conformity connector.                                                                                                                       | 1.Insertion Force : 40.2N MAX.<br>2.Extraction Force : 2.2N MIN.                                                                                                         |                                                                        | X —                                                                                       |
| Mating and unmating Force (Au Plating)                                                                                                                                                                                                                                                                      |                             | It takes out and inserts with a conformity connector.                                                                                                                       | 1.Insertion Force : 30.9N MAX.<br>2.Extraction Force : 2.0N MIN.                                                                                                         |                                                                        | X —                                                                                       |
| Vibration                                                                                                                                                                                                                                                                                                   |                             | Frequency 10 to 55 Hz, single amplitude 0.75 mm, at 10 cycles for 3 direction.                                                                                              | No damage, crack or looseness of parts.                                             |                                                                        | X —                                                                                       |
| Shock                                                                                                                                                                                                                                                                                                       |                             | Acceleration 490 m/s <sup>2</sup> duration of pulse 11 ms at 3 times for 3 directions.                                                                                      |                                                                                                                                                                          |                                                                        | X —                                                                                       |
| Contact extraction force                                                                                                                                                                                                                                                                                    |                             | Pull out the cable after housing fixation.                                                                                                                                  | 11.8N MIN                                                                                                                                                                |                                                                        | X —                                                                                       |
| Environmental Characteristics                                                                                                                                                                                                                                                                               |                             |                                                                                                                                                                             |                                                                                                                                                                          |                                                                        |                                                                                           |
| Damp Heat (Steady State)                                                                                                                                                                                                                                                                                    |                             | Exposed at 40 ± 2°C, humidity 90 to 95 %, 96 h. (After leaving the room temperature for 1 to 2h.)                                                                           | 1.Insulation resistance: 500 MΩ MIN. <br>2.No damage, crack or looseness of parts.  |                                                                        | X —                                                                                       |
| Rapid Change Of Temperature                                                                                                                                                                                                                                                                                 |                             | Temperature -55°C→ +105°C<br>Time 30min→ 30min<br>Under 5 Cycles.<br>(The transferring time of the tank is 2 to 3 MIN)<br>(After leaving the room temperature for 1 to 2h.) | 1.Insulation resistance: 1000 MΩ MIN. <br>2.No damage, crack or looseness of parts. |                                                                        | X —                                                                                       |
| Dry Heat                                                                                                                                                                                                                                                                                                    |                             | Exposed at 105±2°C, 96h                                                                                                                                                     |                                                                                                                                                                          |                                                                        | X —                                                                                       |
| Cold                                                                                                                                                                                                                                                                                                        |                             | Exposed at -55±3°C, 96h                                                                                                                                                     |                                                                                                                                                                          |                                                                        | X —                                                                                       |
| Remarks<br>Note 1:Include the temperature rising by current.<br>Note 2:No condensing<br>Note 3:Apply to the condition of long term storage for unused products before mount on pcb,<br>After mounted on pcb, operating temperature and humidity range is applied for interim storage during transportation. |                             |                                                                                                                                                                             |                                                                                                                                                                          |                                                                        |                                                                                           |
|                                                                                                                                                                                                                          | COUNT                       | DESCRIPTION OF REVISIONS                                                                                                                                                    | DESIGNED                                                                                                                                                                 | CHECKED                                                                | DATE                                                                                      |
|                                                                                                                                                                                                                                                                                                             | 6                           | DIS-H-00004486                                                                                                                                                              | TS. MIYAKI                                                                                                                                                               | SZ. ONO                                                                | 20181212                                                                                  |
| Unless otherwise specified, refer to IEC 60512.                                                                                                                                                                                                                                                             |                             |                                                                                                                                                                             | APPROVED                                                                                                                                                                 | HS. OKAWA                                                              | 20160707                                                                                  |
|                                                                                                                                                                                                                                                                                                             |                             |                                                                                                                                                                             | CHECKED                                                                                                                                                                  | YN. TAKASHITA                                                          | 20160707                                                                                  |
|                                                                                                                                                                                                                                                                                                             |                             |                                                                                                                                                                             | DESIGNED                                                                                                                                                                 | TT. OHSAKO                                                             | 20160707                                                                                  |
|                                                                                                                                                                                                                                                                                                             |                             |                                                                                                                                                                             | DRAWN                                                                                                                                                                    | TT. OHSAKO                                                             | 20160707                                                                                  |
| Note QT:Qualification Test AT:Assurance Test X:Applicable Test                                                                                                                                                                                                                                              |                             |                                                                                                                                                                             | DRAWING NO.                                                                                                                                                              |                                                                        | ELC-362056-00-00                                                                          |
|                                                                                                                                                                                                                          | SPECIFICATION SHEET         |                                                                                                                                                                             | PART NO.                                                                                                                                                                 | DF51-8DS-2C                                                            |                                                                                           |
|                                                                                                                                                                                                                                                                                                             | HIROSE ELECTRIC CO., LTD.   |                                                                                                                                                                             | CODE NO.                                                                                                                                                                 | CL543-5032-3-00                                                        |  1/1 |