

|                                                                                                                                                                                                                                                                                                             |                             |                                                                                                                                                                             |             |                                                                                                                        |                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Applicable standard                                                                                                                                                                                                                                                                                         |                             |                                                                                                                                                                             |             |                                                                                                                        |                         |
| Rating                                                                                                                                                                                                                                                                                                      | Operating Temperature Range | -55 to +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)      |
|                                                                                                                                                                                                                                                                                                             | Voltage                     | 250 V AC/DC                                                                                                                                                                 |             | UL • C-UL Rating                                                                                                       | Voltage<br>30 V AC/DC   |
|                                                                                                                                                                                                                                                                                                             | Current                     | AWG 22 to 24 : 2.0A<br>AWG 26 : 1.5A<br>AWG 28 : 1.0A<br>AWG 30 : 0.5A                                                                                                      |             | Current                                                                                                                | 2.0A                    |
|                                                                                                                                                                                                                                                                                                             |                             |                                                                                                                                                                             |             | Applicable Connector                                                                                                   | DF51-24DS-2C            |
|                                                                                                                                                                                                                                                                                                             |                             |                                                                                                                                                                             |             | Applicable Contact                                                                                                     | DF11-****SC(F)A(##)     |
| 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                                                                                                                                                                                                                                                                                    |                             |                                                                                                                                                                             |             |                                                                                                                        |                         |
| Contact Resistance<br>Millivolt Level Method                                                                                                                                                                                                                                                                |                             | 20mV MAX, 1mA (DC or 1000Hz).                                                                                                                                               |             | 30 mΩ MAX.                                                                                                             | X —                     |
| 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                                                                                                                                                                                                                                                                                        |                             | 50 times insertion and extraction.                                                                                                                                          |             | 1.Contact resistance: 30 mΩ MAX.<br>2.No damage, crack or looseness of parts.                                          | X —                     |
| Mating and unmating force                                                                                                                                                                                                                                                                                   |                             | It takes out and inserts with a conformity connector.                                                                                                                       |             | 1.Insertion Force :67.7 N MAX.<br>2.Extraction Force :6.0 N MIN.                                                       | X —                     |
| Vibration                                                                                                                                                                                                                                                                                                   |                             | Frequency 10 to 55 Hz, single amplitude 0.75 mm, at 10 cycles for 3 direction.                                                                                              |             | 1.No electrical discontinuity of 1 μ s.<br>2.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 —                     |
| Environmental Characteristics                                                                                                                                                                                                                                                                               |                             |                                                                                                                                                                             |             |                                                                                                                        |                         |
| Damp Heat<br>(Steady State)                                                                                                                                                                                                                                                                                 |                             | Exposed at 40 ± 2°C , humidity 90 to 95 %, 96 h.<br>(After leaving the room temperature for 1 to 2h.)                                                                       |             | 1.Contact resistance: 30 mΩ MAX.<br>2.Insulation resistance: 500 MΩ MIN.<br>3.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.Contact resistance: 30 mΩ MAX.<br>2.Insulation resistance: 1000 MΩ MIN.<br>3.No damage, crack or looseness of parts. | X —                     |
| Dry Heat                                                                                                                                                                                                                                                                                                    |                             | Exposed at 105±2°C, 96h                                                                                                                                                     |             | 1.Contact resistance: 30 mΩ MAX.<br>2.Insulation resistance: 1000 MΩ MIN.<br>3.No damage, crack or looseness of parts. | X —                     |
| Cold                                                                                                                                                                                                                                                                                                        |                             | Exposed at -55±3°C, 96h                                                                                                                                                     |             | 1.Contact resistance: 30 mΩ MAX.<br>2.Insulation resistance: 1000 MΩ MIN.<br>3.No damage, crack or looseness of parts. | 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                    |
|                                                                                                                                                                                                                                                                                                             | 2                           | DIS-H-00005270                                                                                                                                                              | TS. MIYAKI  | SZ. ONO                                                                                                                | 20190912                |
| Unless otherwise specified, refer to IEC 60512.                                                                                                                                                                                                                                                             |                             |                                                                                                                                                                             | APPROVED    | HS. OKAWA                                                                                                              | 20180529                |
|                                                                                                                                                                                                                                                                                                             |                             |                                                                                                                                                                             | CHECKED     | ST. WADA                                                                                                               | 20180529                |
|                                                                                                                                                                                                                                                                                                             |                             |                                                                                                                                                                             | DESIGNED    | TH. SATO                                                                                                               | 20180528                |
|                                                                                                                                                                                                                                                                                                             |                             |                                                                                                                                                                             | DRAWN       | TH. SATO                                                                                                               | 20180528                |
| Note QT:Qualification Test AT:Assurance Test X:Applicable Test                                                                                                                                                                                                                                              |                             |                                                                                                                                                                             | DRAWING NO. |                                                                                                                        | ELC-363565-50-00        |
|                                                                                                                                                                                                                                                                                                             | SPECIFICATION SHEET         |                                                                                                                                                                             | PART NO.    | DF51A-24DP-2DS (50)                                                                                                    |                         |
|                                                                                                                                                                                                                                                                                                             | HIROSE ELECTRIC CO., LTD.   |                                                                                                                                                                             | CODE NO.    | CL543-5067-0-50                                                                                                        | 1/2                     |

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| Specifications                                                                      |                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                |                     |                                                                                       |     |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------|-----|
| Item                                                                                | Test method                                                                                                                                                                                                                                                                                   | Requirements                                                                                                                                                                   | QT                  | AT                                                                                    |     |
| Resistance To Soldering Heat                                                        | 1)Solder bath method <br>Soldered at solder temperature, 260℃ for in immersion, duration, 5 s.<br>2)Manual soldering<br>Soldering iron temperature :270℃,<br>Soldering time : 3s.<br>No strength on contact. | Such as impaired function ,no deformation of case of excessive looseness of the terminals.  | X                   | —                                                                                     |     |
| Solderability                                                                       | Soldering temperature : 245℃<br>Duration of immersion :soldering, for 5 sec.                                                                                                                                                                                                                  | New uniform coating of solder shall cover minimum of 95 % of the surface Being immersed.                                                                                       | X                   | —                                                                                     |     |
|                                                                                     |                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                |                     |                                                                                       |     |
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|  | SPECIFICATION SHEET                                                                                                                                                                                                                                                                           | PART NO.                                                                                                                                                                       | DF51A-24DP-2DS (50) |                                                                                       |     |
|                                                                                     | HIROSE ELECTRIC CO., LTD.                                                                                                                                                                                                                                                                     | CODE NO                                                                                                                                                                        | CL543-5067-0-50     |  | 2/2 |