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Underwriters Laboratories Inc.

File E52653
Project 90SC13796

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# REPORT

# ON

# COMPONENT - RECEPTACLES FOR ATTACHMENT PLUGS AND PLUGS

Hirose Electric Co., Ltd.
Yokohama 222, Japan



An independent.
not-for-profit organization
testing for public safety

DESCRIPTION

PRODUCT COVERED:

USR Component Connector,

Cat. No. DF1B, followed by 2 thru 16, 18 or 20, followed by S, followed by 2.5R, followed by (01) thru (99) or blank.

Cat. No. DF1B, followed by 2 thru 16, 18 or 20, followed by P, followed by 2.5DS or 2.5DSA, followed by (01) thru (99) or blank.

Cat. No. DF1B, followed by 2 thru 13, followed by ES, followed by 2.5RC, followed by (01) thru (99) or blank.

Cat. Nos. DF1B and DF1BA, followed by 2 thru 13, followed by EP, followed by 2.5RC, followed by (01) thru (99) or blank.

Cat. No. DF1B, followed by 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32 or 34, followed by DEP or DES, followed by 2.5RC, followed by (01) thru (99) or blank.

Cat. No. DF1BA, followed by 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30 or 34, followed by DEP, followed by 2.5RC, followed by (01) thru (99) or blank.

Cat. No. DF1B, followed by 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38 or 40, followed by DS, followed by 2.5RC, followed by (01) thru (99) or blank.

Cat. No. DF1B, followed by 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38 or 40, followed by DP, followed by 2.5DS or 2.5DSA, followed by (01) thru (99) or blank.

Cat. No. DF11BB, followed by 7, 8 or 10, followed by P, followed by 2.5DS, followed by (01) thru (99) or blank.

Cat. No. DF1BD, followed by 2 thru 10, followed by P, followed by 2.5DSA, followed by (01) thru (99) or blank.

Cat. Nos. DF11 **and DF11H**, followed by 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32 or 34, followed by DS, followed by 2C, followed by (01) thru (99) or blank.

Cat. No. DF11, followed by 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32 or 34, followed by DP, followed by 2DSA or 2DS, followed by (01) thru (99) or blank.

Cat. Nos. DF11, **DF11B**, DF11C, **DF11D**, **DF11F**, DF11G and DF11J, followed by 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32 or 40, followed by DP, followed by 2V, followed by (01) thru (99) or blank.

Cat. No. DF11, followed by 4, 6, 8, 10, 14, 16, 18, 20, 22, 24, 26, 28, 30 or 32, followed by DEP, followed by 2C, followed by (01) thru (99) or blank.

Cat. No. DF11, followed by 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30 or 32, followed by DS, followed by 2DSA, followed by (01) thru (99) or blank.

Cat. No. DF11, followed by 4, 6 or 8, followed by DP, followed by SP1 or SP2, followed by (01) thru (99) or blank.

Cat. No. DF11, followed by 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30 or 32, followed by DS, followed by 2R26 or 2R28, followed by (01) thru (99) or blank.

Cat. No. DF11E, followed by 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32 or 34, followed by DP, followed by 2DSA, followed by (01) thru (99) or blank.

*Cat. Nos. DF11, DF11B **and DF11C**, followed by 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32 or 40, followed by DS, followed by 2V, followed by (01) thru (99) or blank.

All Series' designations may be proceeded by Suffix "Z", denoting zinc free tin plating.

ELECTRICAL RATING:

| Connector Type: | Contact Type | Wire Size | Voltage (V) | Amps |
|---|---|---|---|---|
| DF1B Pin Header | -- | -- | 30 | 3 A |
| DF1B Socket | DF1B-2022SC# | 20-22 AWG | 30 | 3 A |
| | DF1B-2428SC# | 24-28 AWG | 30 | 1 A |
| | DF1B-30SC# | 30 AWG | 30 | 0.5 A |
| | DF1B-R24# | 24 AWG | 30 | 2 A |
| | DF1B-R26# | 26 AWG | 30 | 2 A |
| | DF1B-R28# | 28 AWG | 30 | 1 A |
| DF1B Plug | DF1B-2022PC# | 20-22 AWG | 30 | 3 A |
| | DF1B-2428PC# | 24-28 AWG | 30 | 1 A |
| | DF1B-30PC# | 30 AWG | 30 | 0.5 A |
| | DF1B-24PR# | 24 AWG | 30 | 2 A |
| | DF1B-26PR# | 26 AWG | 30 | 2 A |
| | DF1B-28PR# | 28 AWG | 30 | 1 A |
| DF11 Pin Header: | -- | -- | 30 | 2 A |
| DF11 Socket: | S-V Contact | N/A | 30 | 2A |
| | S(A) Contact | N/A | 30 | 2 A |
| | DF11-22SC# | 22 AWG | 30 | 2 A |
| | DF11-2428SC# | 24-28 AWG | 30 | 1 A |
| | DF11-30SC# | 30 AWG | 30 | 0.5 A |
| | DF11-#DS-2R24 | 24 AWG | 30 | 1 A |
| | DF11-#DS-2R26 | 26 AWG | 30 | 1 A |
| | DF11-#DS-2R28 | 28 AWG | 30 | 1 A |
| DF11 Plug | DF11-EP2428PC# | 24-28 AWG | 30 | 1 A |

N/A: Surface mount on PCB

**Disconnecting Use (see Sec Gen for required marking).**

GENERAL:

These devices are multi-pole connectors intended for factory assembly where the acceptability of combinations is determined by Underwriters Laboratories Inc. The devices are identified as follows:

* USR indicates investigation to United States Standards, UL 1977.

TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use - For use only in complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

Conditions of Acceptability - In order to be judged acceptable as a component of electrical equipment, the following conditions should be met.

1. These devices should be used only where they will not interrupt the current.

2. The placement of these devices within the equipment enclosure should be such that spacings between the live parts and the equipment are suitable for the particular application.

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*3. The electrical and mechanical contact between the connector and the printed wiring board is to be judged in the end-use equipment.

*4. The factory assembled contacts have been investigated for the following wire ranges and maximum tensile forces:

| Part No. | Wire Range (AWG) | Tensile Force (lb) |
|---|---|---|
| DF1B | 26 AWG | 7 |
| DF1B | 30 AWG | 4.5 |
| DF1B | 20 AWG | 8 |
| DF11 | 30 AWG | 5.25 |
| DF11 | 22, 26 AWG | 8 |

*5. The operating temperature of these devices should not exceed the temperature ratings of the insulating materials. These materials may be used interchangeably at a maximum temperature of 65°C.

*6. Dielectric-Voltage-Withstand testing has been conducted between adjacent poles at a potential of **1060** V.