

# JIS

**JAPANESE INDUSTRIAL STANDARD**

**C 01 type connectors for radio  
frequency coaxial cables**

**JIS C 5411—1995**

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## JAPANESE INDUSTRIAL STANDARD

J I S

C 01 type connectors for radio  
frequency coaxial cables

C 5411-1995

1. Scope This Japanese Industrial Standard specifies the C01 type connectors designed for ratings of nominal impedance 50  $\Omega$  or less, voltage 500 V (effective value) or less, and frequency 10000 MHz or less based on JIS C 5410 (hereafter referred to as "connectors").

Remarks: The following standards are cited in this Standard:

JIS C 3501 Radio-frequency coaxial cables

JIS C 5401 General rules of connectors for use in electronic equipment

JIS C 5410 General rules of connectors for radio frequency coaxial cables

2. Definitions For the purpose of this Standard the definitions given in JIS C 5401 and JIS C 5410 apply.

3. Composition of type designation The composition of type designation shall be in accordance with 4.1 of JIS C 5410.

4. Classification The classification of C01 type connectors shall be as shown in Table 1.

Table 1

| Type designation | Connector shape | Contact shape | Applicable cable <sup>(1)</sup> (JIS C 3501) | Shape and dimensions |
|------------------|-----------------|---------------|----------------------------------------------|----------------------|
| CN C01 SPM5      | Plug            | Male          | 5D-2V<br>5C-2V*                              | Attached Fig. 1      |
| CN C01 SPM5W     |                 |               | 5D-2W                                        |                      |
| CN C01 SPM8      |                 |               | 8D-2V<br>7C-2V*                              |                      |
| CN C01 SPM10     |                 |               | 10D-2V<br>10C-2V*                            |                      |
| CN C01 LPM5      | L type plug     | Male          | 5D-2V<br>5C-2V*                              | Attached Fig. 2      |
| CN C01 LPM8      |                 |               | 8D-2V<br>7C-2V*                              |                      |

Table 1 (continued)

| Type designation | Connector shape | Contact shape      | Applicable cable <sup>(1)</sup> (JIS C 3501) | Shape and dimensions |
|------------------|-----------------|--------------------|----------------------------------------------|----------------------|
| CN C01 SPF5      | Plug            | Female             | 5D-2V<br>5C-2V*                              | Attached Fig. 3      |
| CN C01 SPF5W     |                 |                    | 5D-2W                                        |                      |
| CN C01 SPF8      |                 |                    | 8D-2V<br>7C-2V*                              |                      |
| CN C01 SPF10     |                 |                    | 10D-2V<br>10C-2V*                            |                      |
| CN C01 CRF5      | Receptacle      | Female             | 5D-2V<br>5C-2V*                              | Attached Fig. 4      |
| CN C01 CRF8      |                 |                    | 8D-2V<br>7C-2V*                              |                      |
| CN C01 SRF       | Receptacle      | Female             | -                                            | Attached Fig. 5      |
| CN C01 SAFF      | Adaptor         | Female-female      | -                                            | Attached Fig. 6      |
| CN C01 PAFF      | Adaptor         | Female-female      | -                                            | Attached Fig. 7      |
| CN C01 SAMM      | Adaptor         | Male-male          | -                                            | Attached Fig. 8      |
| CN C01 LAFM      | L type adaptor  | Female-male        | -                                            | Attached Fig. 9      |
| CN C01 TAFMF     | T type adaptor  | Female-male-female | -                                            | Attached Fig. 10     |
| CN C01 DC        | Cap             | -                  | -                                            | Attached Fig. 11     |

Note (1) Cables marked with \* are those which do not ensure impedance matching, and include cables dissatisfying the requirement on the connecting strength of cable.

## 5. Construction

5.1 Construction, shape and dimensions Dimensions for the mated part shall be as shown in Fig. 1 and Fig. 2. The shapes and dimensions for other parts shall conform to the Attached figures specified in Table 1. The dimensions of metallic portions mean those after the surface treatment.

The construction and shape of the portions without specified dimensions show an example. The tolerances on dimensions without specified difference shall be in accordance with 8.2 of JIS C 5410.

Fig. 1

Unit: mm

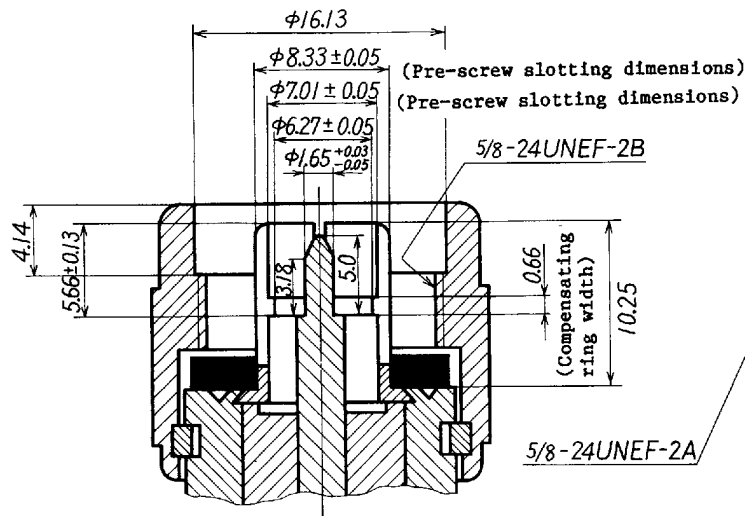
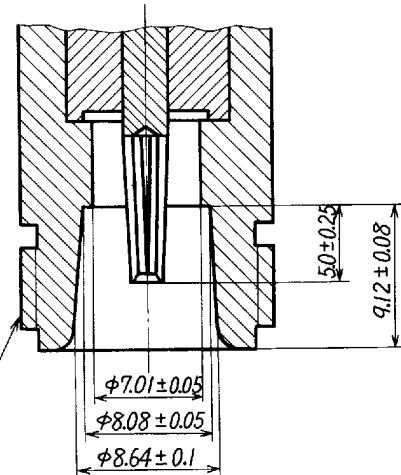


Fig. 2

Unit: mm



5.2 Material Material shall be in accordance with 8.3.1 of JIS C 5410.

5.3 Finish Finish shall be in accordance with 8.3.2 of JIS C 5410.

## 6. Performances

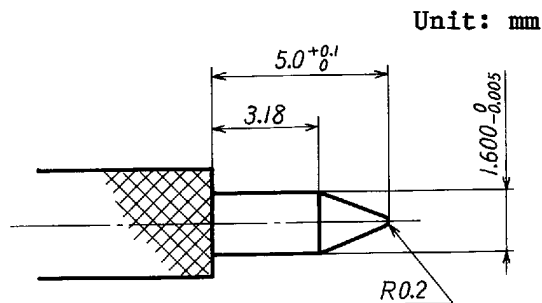
### 6.1 Electrical performances

- (1) Insulation resistance When the insulation resistance is measured with about 500 V d.c. based on 7.2.1 of JIS C 5410, it shall be 1000 M $\Omega$  or more.
- (2) Voltage proof When a voltage of 1000 V (effective value) is applied to the specimen according to 7.2.2 of JIS C 5410, no abnormality shall appear.
- (3) Contact resistance The contact resistance shall be not more than 3 m $\Omega$  when measured according to 7.2.3 of JIS C 5410.
- (4) Voltage standing wave ratio The voltage standing wave ratio shall be 1.2 or less, when measured up to 4000 MHz according to 7.2.4 of JIS C 5410.

### 6.2 Mechanical performances

- (1) Interchangeability As for the interchangeability, the connectors with the mating part shown in Fig. 1 shall be connected with those shown in Fig. 2 without any abnormality.
- (2) Retention force of female contact When the retention force of the female contact is measured according to 7.3.4 of JIS C 5410, using a pingauge shown in Fig. 3, it shall be 1.0 N or more.

Fig. 3



- (3) Fixing force of contact with stopper When a force of 5.0 N or more is applied, the fixing force of a contact with stopper shall meet the requirement in 7.3.5 of JIS C 5410.
- (4) Robustness of mated part When a tensile force of 300 N is applied, the robustness of mated part shall meet the requirement in 7.3.8 of JIS C 5410.
- (5) Connecting strength of cable When the tensile force specified in Table 2 in correlation with the connector and the applicable cable is applied, the connecting strength of cable shall meet the requirement in 7.3.7 of JIS C 5410.

Table 2

| Type designation | Applicable cable (JIS C 3501) | Tensile force N |
|------------------|-------------------------------|-----------------|
| CN C01 SPM5      | 5D-2V                         | 200 min.        |
| CN C01 LPM5      |                               |                 |
| CN C01 SPF5      |                               |                 |
| CN C01 CRF5      |                               |                 |
| CN C01 SPM5W     | 5D-2W                         | 250 min.        |
| CN C01 SPF5W     |                               |                 |
| CN C01 SPM8      | 8D-2V                         | 250 min.        |
| CN C01 LPM8      |                               |                 |
| CN C01 SPF8      |                               |                 |
| CN C01 CRF8      |                               |                 |
| CN C01 SPM10     | 10D-2V                        | 400 min.        |
| CN C01 SPF10     |                               |                 |

Remarks: An example of fixing method of the cable in normal way is shown in Informative reference Fig. 1.

- (6) Robustness of mounting part When a tensile force of 500 N is applied, the robustness of mounting part shall meet the requirement in 7.3.9 of JIS C 5410.
- (7) Repetitive operation After repeating 5000 times of connecting and disconnecting the connector according to 7.3.10 of JIS C 5410, the contact resistance shall be 10 mΩ or less.
- 6.3 Corrosion resistance After the test based on 7.4.5 of JIS C 5410 is carried out, the voltage proof shall meet the requirement in 6.1 (2), and the contact resistance shall be 50 mΩ or less.

## 7. Test

7.1 Standard conditions of testing place These shall comply with 9.1 of JIS C 5410.

7.2 Test items These shall be as given in Attached Table 1.

8. Marking The marking shall conform to 11. of JIS C 5410.

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Attached Table 1 C01 Type connector test item list

| Test item<br><div>Applicable provision</div> | Construc-<br>tion and<br>marking | Electrical performance   |                  |                       |                                   | Mechanical performance       |                                            |                                                  |                                |                                    |                                     |                         | Corrosion<br>resistance |
|----------------------------------------------|----------------------------------|--------------------------|------------------|-----------------------|-----------------------------------|------------------------------|--------------------------------------------|--------------------------------------------------|--------------------------------|------------------------------------|-------------------------------------|-------------------------|-------------------------|
|                                              |                                  | Insulation<br>resistance | Voltage<br>proof | Contact<br>resistance | Voltage<br>standing<br>wave ratio | Inter-<br>change-<br>ability | Retention<br>force of<br>female<br>contact | Fixing<br>force of<br>contact<br>with<br>stopper | Robustness<br>of mated<br>part | Connecting<br>strength<br>of cable | Robustness<br>of mount-<br>ing part | Repetitive<br>operation |                         |
| Type<br>designation                          | 5 and 8.                         | 6.1(1)                   | 6.1(2)           | 6.1(3)                | 6.1(4)                            | 6.2(1)                       | 6.2(2)                                     | 6.2(3)                                           | 6.2(4)                         | 6.2(5)                             | 6.2(6)                              | 6.2(7)                  | 6.3                     |
| CN C01 SPM5                                  | ○                                | ○                        | ○                | ○                     | △                                 | ○                            | —                                          | —                                                | △                              | △                                  | —                                   | △                       | △                       |
| CN C01 SPM5W                                 | ○                                | ○                        | ○                | ○                     | △                                 | ○                            | —                                          | —                                                | △                              | △                                  | —                                   | △                       | △                       |
| CN C01 SPM8                                  | ○                                | ○                        | ○                | ○                     | △                                 | ○                            | —                                          | —                                                | △                              | △                                  | —                                   | △                       | △                       |
| CN C01 SPM10                                 | ○                                | ○                        | ○                | ○                     | △                                 | ○                            | —                                          | —                                                | △                              | △                                  | —                                   | △                       | △                       |
| CN C01 LPM5                                  | ○                                | ○                        | ○                | ○                     | △                                 | ○                            | —                                          | —                                                | △                              | △                                  | —                                   | △                       | △                       |
| CN C01 LPM8                                  | ○                                | ○                        | ○                | ○                     | △                                 | ○                            | —                                          | —                                                | △                              | △                                  | —                                   | △                       | △                       |
| CN C01 SPF5                                  | ○                                | ○                        | ○                | ○                     | △                                 | ○                            | △                                          | —                                                | —                              | △                                  | —                                   | △                       | △                       |
| CN C01 SPF3W                                 | ○                                | ○                        | ○                | ○                     | △                                 | ○                            | △                                          | —                                                | —                              | △                                  | —                                   | △                       | △                       |
| CN C01 SPF8                                  | ○                                | ○                        | ○                | ○                     | △                                 | ○                            | △                                          | —                                                | —                              | △                                  | —                                   | △                       | △                       |
| CN C01 SPF10                                 | ○                                | ○                        | ○                | ○                     | △                                 | ○                            | △                                          | —                                                | —                              | △                                  | —                                   | △                       | △                       |
| CN C01 CRF5                                  | ○                                | ○                        | ○                | ○                     | △                                 | ○                            | △                                          | —                                                | —                              | △                                  | △                                   | △                       | △                       |
| CN C01 CRF8                                  | ○                                | ○                        | ○                | ○                     | △                                 | ○                            | △                                          | —                                                | —                              | △                                  | △                                   | △                       | △                       |
| CN C01 SRF                                   | ○                                | ○                        | ○                | ○                     | —                                 | ○                            | △                                          | △                                                | —                              | —                                  | △                                   | △                       | △                       |
| CN C01 SAFF                                  | ○                                | ○                        | ○                | ○                     | △                                 | ○                            | △                                          | △                                                | —                              | —                                  | —                                   | △                       | △                       |
| CN C01 PAFF                                  | ○                                | ○                        | ○                | ○                     | △                                 | ○                            | △                                          | △                                                | —                              | —                                  | △                                   | △                       | △                       |
| CN C01 SAMM                                  | ○                                | ○                        | ○                | ○                     | △                                 | ○                            | —                                          | —                                                | △                              | —                                  | —                                   | △                       | △                       |
| CN C01 LAFM                                  | ○                                | ○                        | ○                | ○                     | △                                 | ○                            | △                                          | —                                                | △                              | —                                  | —                                   | △                       | △                       |
| CN C01 TAFMF                                 | ○                                | ○                        | ○                | ○                     | —                                 | ○                            | △                                          | —                                                | △                              | —                                  | —                                   | △                       | △                       |
| CN C01 DC                                    | ○                                | —                        | —                | —                     | —                                 | —                            | —                                          | —                                                | —                              | —                                  | —                                   | —                       | △                       |

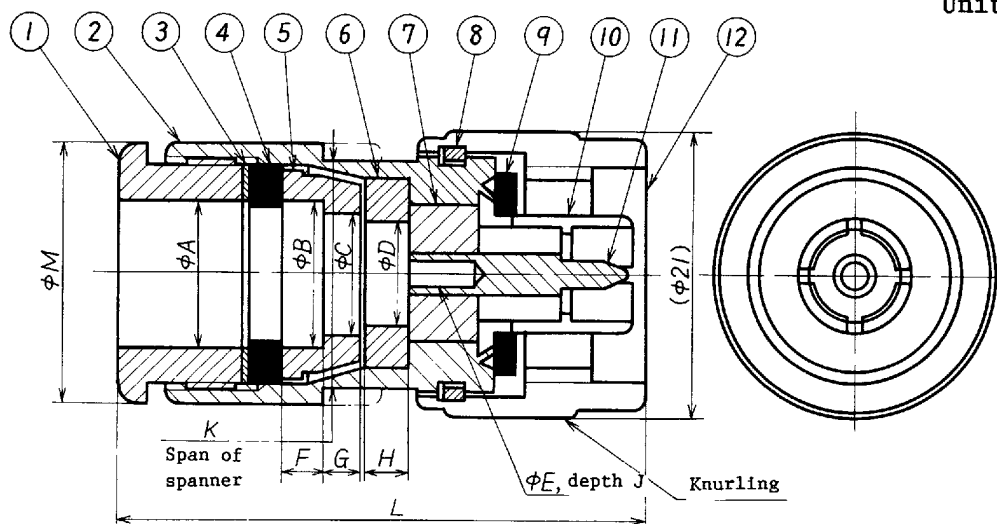
Remarks: As a rule, ○ is applicable to general tests, and △ special tests.

Attached Fig. 1

CN C01 SPM5 CN C01 SPM5W

CN C01 SPM8 CN C01 SPM10

Unit: mm



Remarks: The values in parentheses are shown for information.

| Type designation | Dimensions      |                 |       |       |      |     |     |     |     |                      |      |      |
|------------------|-----------------|-----------------|-------|-------|------|-----|-----|-----|-----|----------------------|------|------|
|                  | A               | B               | C     | D     | E    | F   | G   | H   | J   | K                    | L    | M    |
| CN C01 SPM5      | $7.8^{+0.2}_0$  | $7.8^{+0.2}_0$  | 6.10  | 5.00  | 1.60 | 3.2 | 3.2 | 3.5 | 6.4 | $15.9^{+0.0}_{-0.3}$ | (46) | 17.5 |
| CN C01 SPM5W     | $8.5^{+0.2}_0$  | $8.5^{+0.2}_0$  | 6.80  | 5.00  | 1.60 | 3.2 | 3.2 | 3.5 | 6.4 | $15.9^{+0.0}_{-0.3}$ | (46) | 17.5 |
| CN C01 SPM8      | $11.6^{+0.3}_0$ | $11.6^{+0.3}_0$ | 9.30  | 8.00  | 2.70 | 3.2 | 3.2 | 3.5 | 6.4 | $17.5^{+0.0}_{-0.3}$ | (46) | 19.0 |
| CN C01 SPM10     | $13.7^{+0.3}_0$ | $13.7^{+0.3}_0$ | 11.30 | 10.00 | 3.20 | 5.2 | 3.2 | 3.5 | 6.4 | $20.6^{+0.0}_{-0.3}$ | (48) | 22.2 |

Remarks: The values in parentheses are shown for information.