

JIS

JAPANESE INDUSTRIAL STANDARD

**C 02 type connectors for radio
frequency coaxial cables**

JIS C 5412—1995

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J I S

C02 type connectors for radio
frequency coaxial cables

C 5412-1995

1. Scope This Japanese Industrial Standard specifies the C02 type connectors designed for ratings of nominal impedance 50 Ω or less, voltage 500 V (effective value) or less, and frequency 4000 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 C02 type connectors shall be as shown in Table 1.

Table 1

Type designation	Connector shape	Contact shape	Applicable cable ⁽¹⁾ (JIS C 3501)	Shape and dimensions
CN C02 SPM2.5	Plug	Male	2.5D-2V 2.5C-2V*	Attached Fig. 1
CN C02 SPM3			3D-2V 3C-2V*	
CN C02 LPM3	L type plug	Male	3D-2V 3C-2V*	Attached Fig. 2
CN C02 SPF2.5	Plug	Female	2.5D-2V 2.5C-2V*	Attached Fig. 3
CN C02 SPF3			3D-2V 3C-2V*	
CN C02 CRF3	Re-ceptacle	Female	3D-2V 3C-2V*	Attached Fig. 4

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Table 1. (continued)

Type designation	Connector shape	Contact shape	Applicable cable ⁽¹⁾ (JIS C 3501)	Shape and dimensions
CN C02 SRF	Re- ceptacle	Female	-	Attached Fig. 5
CN C02 SRFA				Attached Fig. 6
CN C02 SAFF	Adaptor	Female- female	-	Attached Fig. 7
CN C02 SAMM	Adaptor	Male- male	-	Attached Fig. 8
CN C02 PAFF	Adaptor	Female- female	-	Attached Fig. 9
CN C02 IAFM	L type adaptor	Female- male	-	Attached Fig. 10
CN C02 TAFMF	T type adaptor	Female- male- female	-	Attached Fig. 11
CN C02 DC	Cap	-	-	Attached Fig. 12

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 be as shown in the Attached Figures designated in Table 1. The dimensions of metallic portions mean those after the surface treatment.

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

Fig. 1

Unit: mm

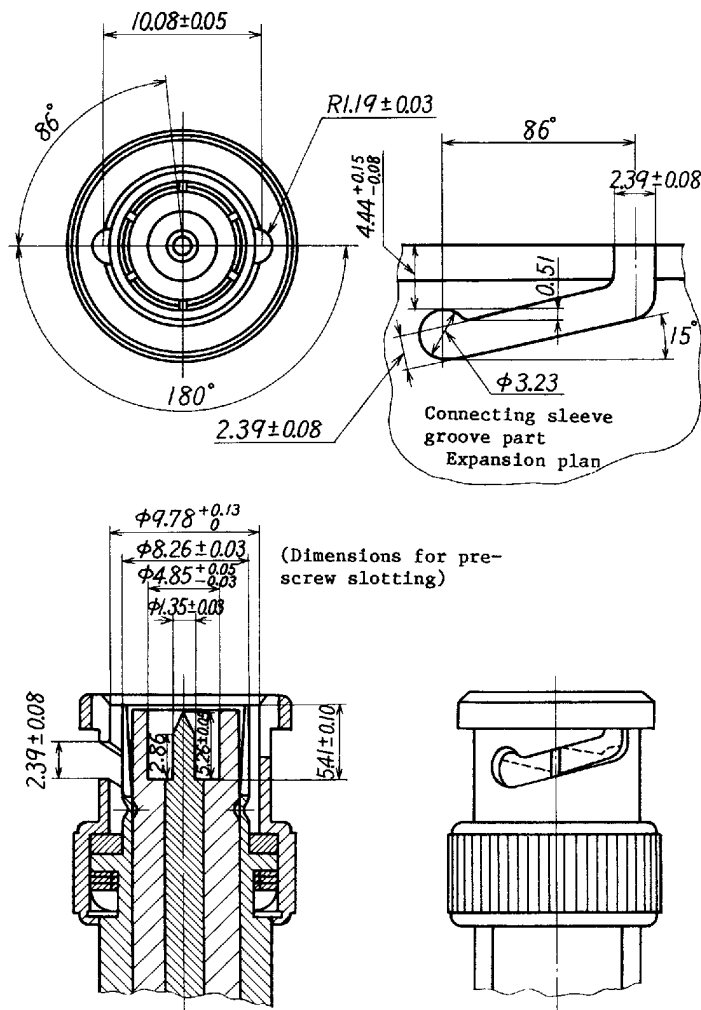
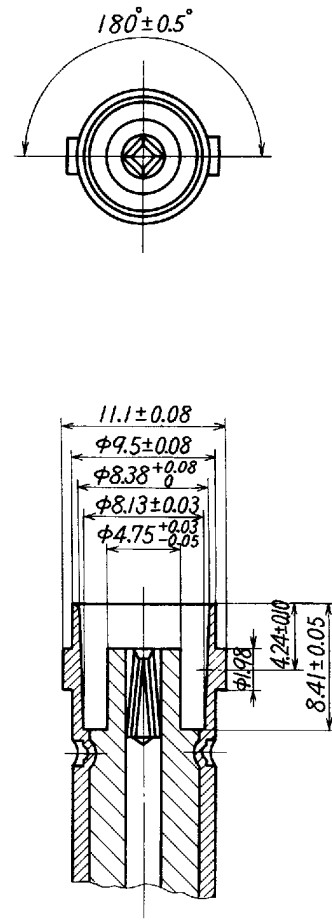


Fig. 2

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

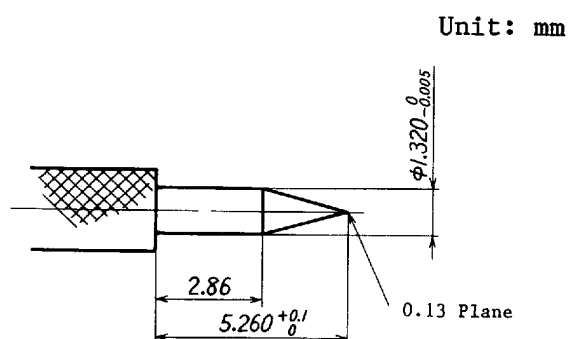
- (1) Insulation resistance When the insulation resistance is measured with approx. 500 V d.c. based on 7.2.1 of JIS C 5410, it shall be 1000 M Ω or more.
- (2) Voltage proof When a voltage of 1500 V (effective value) is applied to the specimen according to 7.2.2 of JIS C 5410, no abnormality shall appear.
- (3) Contact resistance The contact resistance shall be not more than 3 m Ω 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 2000 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 8.3.4 of JIS C 5410, using a pingauge shown in Fig. 3, it shall be not less than 1.0 N.

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 The robustness of mated part shall meet the requirement of 7.3.8 of JIS C 5410 when a tensile force of 250 N is applied. When a torque corresponding to 250 N is applied to the connecting sleeve with its axis as the center, after the connector pair is mated, there shall be no abnormality in the connecting sleeve nor in the stud.
- (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 C02 SPM2.5	2.5D-2V	60 min.
CN C02 SPF2.5		
CN C02 SPM3	3D-2V	100 min.
CN C02 LPM3		
CN C02 SPF3		
CN C02 CRF3		

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 200 N is applied to the mounting part, the part shall meet the requirement described in 8.(6) of JIS C 5410.
- (7) Repetitive operation After repeating 5000 times of connecting and disconnecting according to 7.3.10 of JIS C 5410, the contact resistance shall be 10 mΩ or less.

6.3 Corrosion resistance After carrying out the test based on 7.4.5 of JIS C 5410, 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 comply with Attached Table 1.

8. Marking The marking shall comply with 11. of JIS C 5410.

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Attached Table 1. C02 type connector test item list

Test item Applicable article	Construc- tion and marking	Electrical performance				Mechanical performance						Corrosion resistance	
		Insulation resistance	Voltage proof	Contact resistance	Voltage standing wave ratio	Interchange- ability	Retention force of female contact	Fixing force of contact with stopper part	Robustness of mated part	Connecting strength of cable part	Robustness of mounting part		Repetitive operation
Type 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 C02 SPM2.5	○	○	○	○	△	○	—	—	△	△	—	△	△
CN C02 SPM3	○	○	○	○	△	○	—	—	△	△	—	△	△
CN C02 LPM3	○	○	○	○	△	○	—	—	△	△	—	△	△
CN C02 SPF2.5	○	○	○	○	△	○	△	—	△	△	—	△	△
CN C02 SPF3	○	○	○	○	△	○	△	—	△	△	—	△	△
CN C02 CRF3	○	○	○	○	△	○	△	—	△	△	△	△	△
CN C02 SRF	○	○	○	○	—	○	△	△	△	—	△	△	△
CN C02 SRFA	○	○	○	○	—	○	△	△	△	—	△	△	△
CN C02 SAFF	○	○	○	○	△	○	△	△	△	—	—	△	△
CN C02 SAMM	○	○	○	○	△	○	—	△	△	—	—	△	△
CN C02 PAFF	○	○	○	○	△	○	△	△	△	—	△	△	△
CN C02 LAFM	○	○	○	○	△	○	△	—	△	—	—	△	△
CN C02 TAFMF	○	○	○	○	—	○	△	—	△	—	—	△	△
CN C02 DC	○	—	—	—	—	—	—	—	—	—	—	—	△

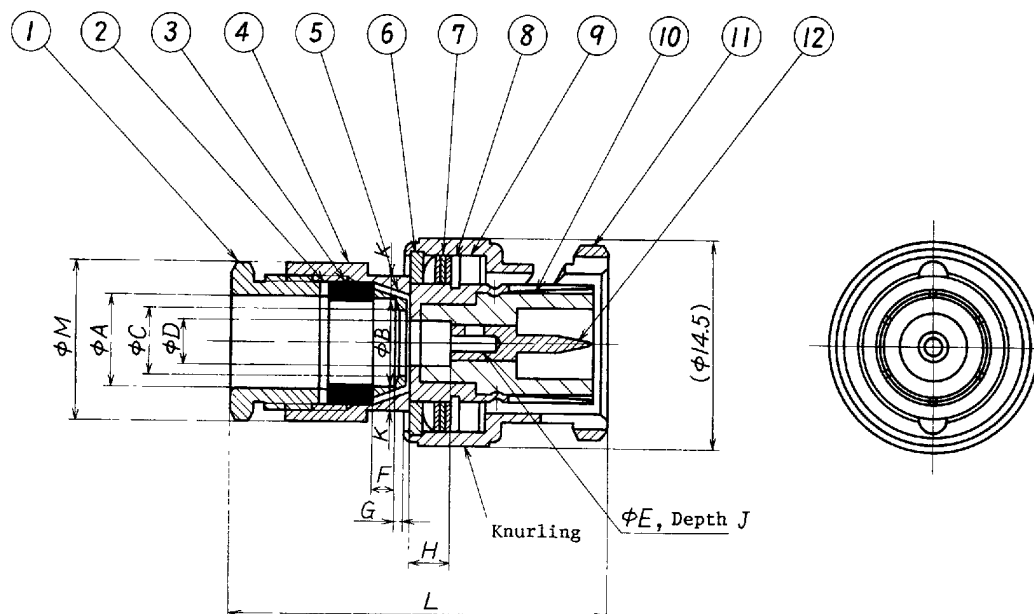
Remarks: In principle, mark ○ applies to the general tests and mark △ applies to the special tests.



Attached Fig. 1

CN C02 SPM2.5 CN C02 SPM3

Unit: mm



Remarks: The values in parentheses in this figure are shown for information.

Type designation	Dimensions											
	A	B	C	D	E	F	G	H	J	K	L	M
CN C02 SPM2.5	$4.8^{+0.2}_0$	$4.8^{+0.2}_0$	4.00	2.90	1.00	1.6	0.8	3.0	3.2	$9.5^{+0.0}_{-0.3}$	(25)	11.1
CN C02 SPM3	$5.8^{+0.2}_0$	$5.8^{+0.2}_0$	4.30	3.20	1.20	1.6	0.8	3.0	3.2	$9.5^{+0.0}_{-0.3}$	(25)	11.1

Remarks: The values in parentheses in this table are shown for information.

Attached Fig. 1. (continued)

Component number	Component name	Material	Treatment	Quantity	Remarks
①	Clamping metal fittings	Brass	Electroplated coating of silver	1	
②	Washer	Brass	Electroplated coating of silver	1	
③	Gasket	Synthetic rubber	-	1	
④	Shell	Brass	Electroplated coating of silver	1	
⑤	Clamp	Brass	Electroplated coating of silver	1	
⑥	Washer	Brass	Electroplated coating of silver	1	
⑦	Spring washer	Phosphor bronze	Electroplated coating of silver	3	
⑧	Washer	Brass	Electroplated coating of silver	2	May be in one piece with ④.
⑨	Gasket	Synthetic rubber	-	1	
⑩	Insulator	Fluoro-resin	-	1	
⑪	Connecting sleeve	Brass	Electroplated coating of silver	1	
⑫	Center contact	Brass	Electroplated coating of silver	1	