

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Radio-frequency connectors -
Part 23: Pin and socket connector for use with 3,5 mm rigid precision coaxial
lines with inner diameter of outer conductor of 3,5 mm (0,1378 in)

Connecteurs pour fréquences radioélectriques -
Partie 23: Connecteur mâle et connecteur femelle pour lignes coaxiales rigides
de précision de 3,5 mm avec diamètre intérieur du conducteur extérieur de 3,5
mm (0,1378 in)

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IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**Radio-frequency connectors -
Part 23: Pin and socket connector for use with 3,5 mm rigid precision
coaxial lines with inner diameter of outer conductor 3,5 mm (0,1378 in)**

FOREWORD

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IEC 61169-23 has been prepared by subcommittee 46F: RF and microwave passive components, of IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories. It is an International Standard.

This first edition cancels and replaces IEC 60169-23:1991. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 60169-23:1991:

- a) use of IEC 61169-1:2013 as its generic specification instead of using IEC 60169-1:1987;
- b) all the subclauses and test methods are in line with IEC 61169-1:2013;
- c) mating faces and dimensions have been revised;

- d) necessary contents have been added into the text, including gauge pins for socket-centre contact, quality assessment procedures and instructions for preparation of detail specifications.

The text of this International Standard is based on the following documents:

Draft	Report on voting
46F/715/FDIS	46F/720/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts of the IEC 61169 series, under the general title: *Radio-frequency connectors*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

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1 Scope

This part of IEC 61169, which is a sectional specification (SS), provides information and rules for the preparation of detail specifications (DS) for pin and socket connector for use with 3,5 mm rigid precision coaxial lines with inner diameter of outer conductor 3,5 mm (0,137 8 in).

This document specifies mating face dimensions for high performance connectors – grade 1, dimensional details of standard test connectors – grade 0, gauging information and tests selected from IEC 61169-1, applicable to all detail specifications relating to series 3,5 mm RF connectors.

This document indicates recommended performance characteristics to be considered when writing a detail specification and it covers test schedules and inspection requirements for assessment levels M and H.

These connectors are constructed so as to affix on the 50 Ω , 3,5 mm rigid precision coaxial line described in IEC 60457-5, and to provide low reflection to 34 GHz. These connectors can be intermated with SMA (IEC 61169-15) and 2,92 mm (IEC 61169-35) connectors.

NOTE Metric dimension are original dimensions. All undimensioned pictorial configurations are for reference purpose only.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61169-1:2013, *Radio frequency connectors - Part 1: Generic specification - General requirements and measuring methods*

IEC 62153-4-7, *Metallic cables and other passive components test methods - Part 4-7: Electromagnetic compatibility (EMC) - Test method for measuring of transfer impedance Z_T and screening attenuation a_S or coupling attenuation a_C of connectors and assemblies - Triaxial tube in tube method*

IEC 62037-3, *Passive RF and microwave devices, intermodulation level measurement - Part 3: Measurement of passive intermodulation in coaxial connectors*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

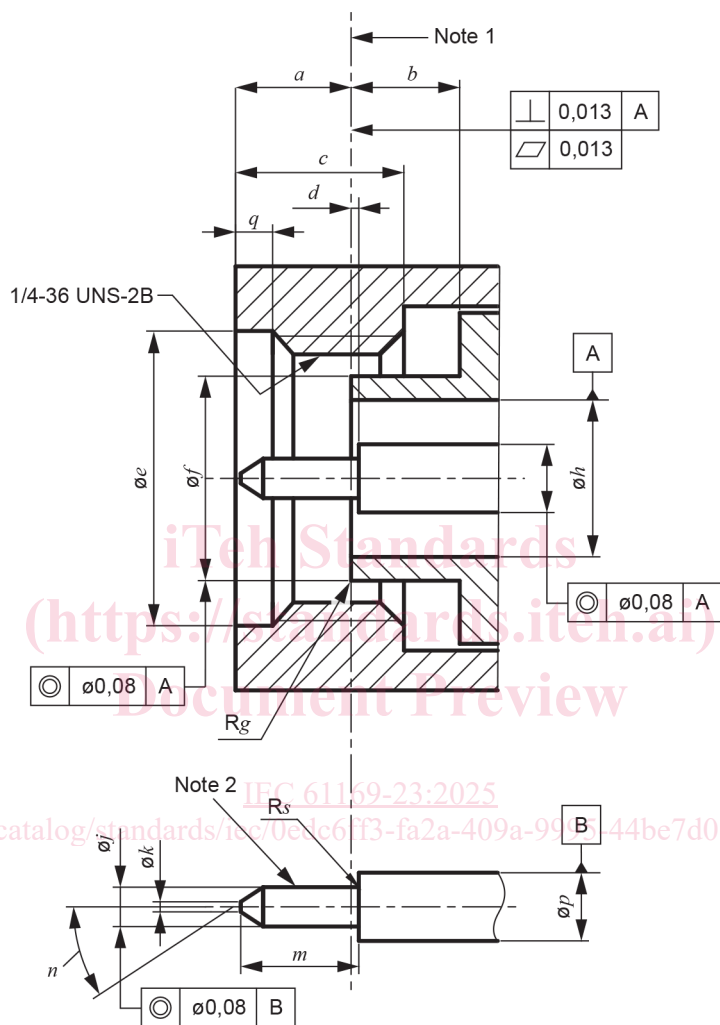
- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

4 Mating face and gauge information

4.1 Dimensions – High performance connectors – Grade1

4.1.1 Connector with pin-centre contact

The mating face of connector with pin centre contact is shown in Figure 1 and its dimensions are shown in Table 1.



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NOTE 1 Mechanical and electrical reference plane. Surface roughness R_a 0,4 μm (16 μin).

NOTE 2 Surface roughness R_a 0,4 μm (16 μin).

For dimensions, see Table 1.

Figure 1 – Connector with pin-centre contact