



The product described in this document has not been fully tested to ensure conformance to the requirements outlined below. Therefore, TE Connectivity (TE) makes no representation or warranty, express or implied, that the product will comply with these requirements. Further, TE may change these requirements based on the results of additional testing and evaluation. Contact TE Engineering for further details.

Contact Pin 1.0x0.64mm with Action Pin

1. Application Section

1.1 Content

The available specification describes of the construct, the characteristics design type, test and quality requirements of the ACTION PIN.

The press in section of the ACTION PIN is for a metallic board hole with the diameter from 1.0mm and the board thickness from 1.6mm concept. For the insertion section of the ACTION PIN is a socket contact for pin contact with 1.0 x 0.64mm jamb to apply.

1.2 General Environments

All tests, to become realized by contact system, have to in this specification specified test guideline to comply.

- Board thickness: 1.6 ± 0.2 mm
Material quality: Glass-Epoxid (NEMA grade G10, G11, FR4, FR5)
- Board hole construct according to DIN EN 60 352-5;2.4
- Position temperature: -40°C to 125°C
- Maximum permissible tension according to IEC 664/ IEC 664A (DIN VDE 0110)

2. Applicable Documents

2.1 General Documents

AK-test guideline for KFZ-socket connector (Release 1996-04)

Another standard:

- A. DIN 17 666/12.83
Low alloyed copper – phosphor bronze alloy
- B. DIN 40 802/02.76 part 2
Metal concealed base material for printed set up
- C. DIN EN 60 352-5
Solderless power connections
- D. DIN 41 640
Measure and test method for electronic – mechanical component
- E. DIN 40 046
Environment test for the electronic
- F. DIN 41 639/03.76 part 1
(IEC 50 Part 581) electronic – mechanical component
- G. DIN 50 015/10.73
Climate and your technical application constant test climate
- H. DIN 50 017/10.82
Condense water test climate

2.2 Product List

All geometrical fix position and requirements: See customer drawing 368405

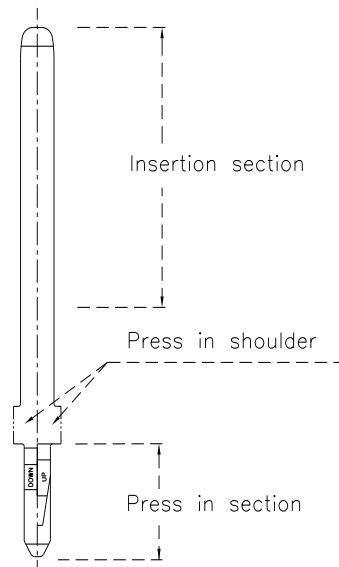
3. Requirements

3.1 Contact Construct

Design, construction and dimension of the ACTION PIN comply the drawing papers and to become re-inspection according to the Tyco Electronics quality guideline. Each other the pin contact limb in the press section and the insertion section.

Press in section: This ACTION PIN is in a metallize board hole with 1.0mm diameter press area. To overcome the press in section of the board is very small held. The presses in section of the ACTION PIN exist of two equal large spring beam, its cross section size as belonging to board hole. At press in the board becomes to the press in section elastic deforms and worry thereby for one safe electronic connection and one high fix seat of the ACTION PIN in the board.

Insertion section: The insertion section is contact pin with the cross section 1.0 x 0.64mm qualified. Its point at connect force minimization one geometric defined at pin point. As counterpart serve a socket contact for the pin contact with 1.0 x 0.64mm jamb. Insertion section and counterpart have to one identical surface coating to show in the contact section.



3.2 Material

- A Base material copper – tin alloy according to TE Specification:
See drawing
- B Base coating – Insertion section:
See drawing
- C Base coating – Press in section:
See drawing

3.3 Requirements and Tests

| Description | Requirement | Test |
|---|--|--|
| Prospect and Measure test | Compliance the requirements according to drawing papers | According to IEC 512-2, Test 1a and 1b |
| Electronic Test | | |
| Current carrying capacity Max. Current heating Current heating according to the environment | Slope from the application and design to result in each other various value, therefore in figure 3.3 A to follow. If not any comparable example to contain are shown, must be the application of the individual case test or to let test | |

3.3 A

Example: Pin: ACTION PIN PN x-368405-y, Material: CuSn6 (post – tin)

Board: 1.6mm FR4; Conductor length: L=14mm, b=1.8mm

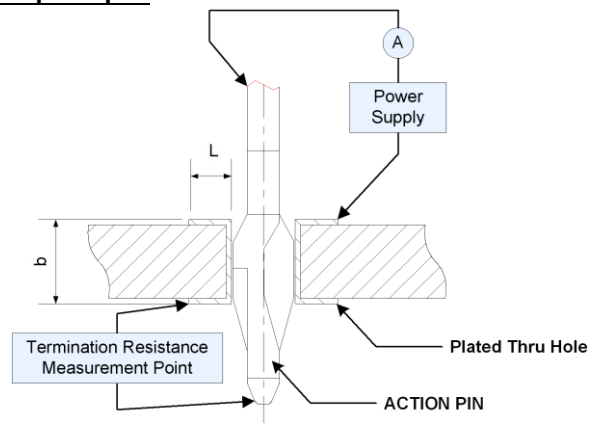
Drilled Hole $\varnothing 1.15 \pm 0.025\text{mm}$, Finished Hole $\varnothing 0.94 \sim 1.09\text{mm}$

Surface:

Copper through hole plating: $25 \sim 75\mu\text{m}$, HAL Tin Lead: $4 \sim 10\mu\text{m}$

Or immersion tin: $0.5 \sim 1.0\mu\text{m}$

Measure principle:



| Mechanical Tests | | |
|---|---|--|
| Hold force the ACTION PIN zone in the board in new condition | $\geq 50\text{ N}$ (Contact Surface Sn) (Board Hole Sn) | According to IEC 512-8, Test 15a Test velocity : 25mm/min |
| Hold force the ACTION PIN zone in the board according to environmental simulation | $\geq 40\text{ N}$ (Contact Surface Sn) (Board Hole Sn) | According to IEC 512-8, Test 15a Test velocity : 25mm/min |
| Press in force | 60 - 180 N (Contact Surface Sn) (Board Hole Sn) | Test velocity : 25mm/min |

| Environmental simulation according to PG 19 / AK test guideline for KFZ – socket connector (Abnormalities: Worst Temperature: 125°C, Moistness Cycle: 21 days) | | |
|---|---|---|
| Thermal shock | <p>The clearance resistance may be not test following worst value to exceed: Resistance variation >1mOhm</p> <p>To become the contact attempt for at least 15min with normal current charge, so may the current heating max. 20°C more amount as be a new contact</p> <p>In the section of the contact area may not any corrosion to occur</p> <p>The mechanical function of the socket connector, it must be ensure</p> | According to IEC 68 T.2-14. Period: 144 cycle, Temperature: -40°C / 125°C |
| Thermal variation | | According to IEC 68 T.2-14. Period: 20 cycle, Temperature: -40°C / 125°C |
| Storage by dryer warmth | | According to EN 60068-2-2 Period: 120h Temperature: 125°C |
| Industry Climate | | According to DIN 41640 T.72 (0.02ppm SO ₂ , 0.01ppm H ₂ S, 0.2ppm NO ₂ , 0.01ppm Cl ₂ , Period : 21d / 75% r.F./25°C) Current Velocity: 1 m ³ /h |
| Moistness warmth cycle | | According to IEC 68 T.2-30. Period: 21 cycle per 24h / Tu=25°C, To=55°C/95% r.F. |
| Vibration test in all 3 spatial axis | | f: 15 – 1000 Hz, a=10g, Period: 6h per spatial axis |
| Mechanical shocks in all 3 spatial axis | | According to EN 60068-2-27, a=30g, t=6ms, Alternative sinusoidal 50 shock per spatial axis |

3.4 Procedure

| Test | Test Group ¹ | | | |
|--|---------------------------|---|---|---|
| | A | B | C | D |
| | Test Squence ² | | | |
| Prospect and measure test | 1 | 1 | 1 | |
| Current carrying capacity | | | 2 | |
| Hold force the contact in the board (Against mounting alignment) | 2 | 3 | | |
| Environmental simulation with vibration test (PG19) | | 2 | | |

- 1) See Para 4.1 A
- 2) Numbers indicate sequence in which tests are performed.