

# HSCH 2,5-2U-2220 9005 - PCB header



2201792

<https://www.phoenixcontact.com/us/products/2201792>

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PCB headers, nominal cross section: 2.5 mm<sup>2</sup>, color: black, nominal current: 8 A, rated voltage (III/2): 320 V, contact surface: Tin, contact connection type: Pin, number of potentials: 6, number of rows: 2, number of positions: 6, number of connections: 6, product range: HSCH 2,5/..-G, pitch: 5 mm, mounting: Wave soldering, pin layout: Mixed pinning, solder pin [P]: 3.8 mm, number of solder pins per potential: 1, plug-in system: HSC 2,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: packed in cardboard, Partially assembled version

## Your advantages

- Partially equipped version for application-specific position layouts

## Commercial data

|                                      |                    |
|--------------------------------------|--------------------|
| Item number                          | 2201792            |
| Packing unit                         | 50 pc              |
| Minimum order quantity               | 50 pc              |
| Sales key                            | AC15               |
| Product key                          | ACHECB             |
| Catalog page                         | Page 35 (NTK-2014) |
| GTIN                                 | 4046356911566      |
| Weight per piece (including packing) | 3.103 g            |
| Weight per piece (excluding packing) | 2.535 g            |
| Customs tariff number                | 85366930           |
| Country of origin                    | PL                 |

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## Technical data

### Product properties

|                           |                |
|---------------------------|----------------|
| Product type              | PCB headers    |
| Product family            | HSCH 2,5/...-G |
| Number of positions       | 6              |
| Pitch                     | 5 mm           |
| Number of connections     | 6              |
| Number of rows            | 2              |
| Number of potentials      | 6              |
| Pin layout                | Mixed pinning  |
| Solder pins per potential | 1              |

### Electrical properties

|                             |       |
|-----------------------------|-------|
| Nominal current $I_N$       | 8 A   |
| Nominal voltage $U_N$       | 320 V |
| Degree of pollution         | 3     |
| Contact resistance          | 2 mΩ  |
| Rated voltage (III/3)       | 250 V |
| Rated surge voltage (III/3) | 4 kV  |
| Rated voltage (III/2)       | 320 V |
| Rated surge voltage (III/2) | 4 kV  |
| Rated voltage (II/2)        | 600 V |
| Rated surge voltage (II/2)  | 4 kV  |

### Mounting

|               |                |
|---------------|----------------|
| Mounting type | Wave soldering |
| Pin layout    | Mixed pinning  |

### Material specifications

#### Material data - contact

|  |  |
|--|--|
| Note                                     | WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/JEDEC JESD 201 |
| Contact material                         | Cu alloy   |
| Surface characteristics                  | Tin-plated   |
| Metal surface soldering area (top layer) | Tin (4 - 8 μm Sn)  |

#### Material data - housing

|  |              |
|--|--------------|
| Color (Housing)  | black (9005) |
| Insulating material  | PA           |
| Insulating material group                                    | I            |
| CTI according to IEC 60112                                   | 600          |
| Flammability rating according to UL 94                       | V0           |
| Glow wire flammability index GWFI according to EN 60695-2-12 | 850          |

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|   |        |
|---|--------|
| Glow wire ignition temperature GWIT according to EN 60695-2-13    | 775    |
| Temperature for the ball pressure test according to EN 60695-10-2 | 125 °C |

Material data – actuating element

|  |     |
|--|-----|
| Insulating material                    | PA  |
| Insulating material group              | I   |
| CTI according to IEC 60112             | 600 |
| Flammability rating according to UL 94 | V0  |

Notes

|                       |   |
|-----------------------|---|
| Assembly instruction: | Refer to the data sheet for the range in the download area. |
|-----------------------|---|

Safety note

|             |   |
|-------------|---|
| Safety note | <p>WARNING: The connectors may not be plugged in or disconnected under load. Ignoring the warning or improper use may damage persons and/or property.</p> <ul style="list-style-type: none"><li>• WARNING: Commission properly functioning products only. The products must be regularly inspected for damage. Decommission defective products immediately. Replace damaged products. Repairs are not possible.</li><li>• WARNING: Only electrically qualified personnel may install and operate the product. They must observe the following safety notes. The qualified personnel must be familiar with the basics of electrical engineering. They must be able to recognize and prevent danger. The relevant symbol on the packaging indicates that only personnel familiar with electrical engineering are allowed to install and operate the product.</li><li>• The item is intended to be an unencapsulated plug for installation in a housing.</li><li>• Operate the connector only when it is fully plugged in.</li></ul> |
|-------------|---|

Dimensions

|                       |              |
|-----------------------|--------------|
| Dimensional drawing   |              |
| Pitch                 | 5 mm         |
| Width [w]             | 17.45 mm     |
| Height [h]            | 21.9 mm      |
| Length [l]            | 16 mm        |
| Solder pin length [P] | 3.8 mm       |
| Pin dimensions        | 0.8 x 0.8 mm |

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## PCB design

|               |         |
|---------------|---------|
| Pin spacing   | 5.30 mm |
| Hole diameter | 1.3 mm  |

## Mechanical tests

### Visual inspection

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60512-1-1:2002-02 |
| Result        | Test passed           |

### Dimension check

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60512-1-2:2002-02 |
| Result        | Test passed           |

### Resistance of inscriptions

|               |                        |
|---------------|------------------------|
| Specification | IEC 60068-2-70:1995-12 |
| Result        | Test passed            |

### Polarization and coding

|               |                        |
|---------------|------------------------|
| Specification | IEC 60512-13-5:2006-02 |
| Result        | Test passed            |

### Contact holder in insert

|  |                        |
|--|------------------------|
| Specification                                  | IEC 60512-15-1:2008-05 |
| Contact holder in insert<br>Requirements >20 N | Test passed            |

### Insertion and withdrawal forces

|                                     |             |
|-------------------------------------|-------------|
| Result                              | Test passed |
| No. of cycles                       | 25          |
| Insertion strength per pos. approx. | 5 N         |
| Withdraw strength per pos. approx.  | 4 N         |

## Electrical tests

### Thermal test | Test group C

|                            |                       |
|----------------------------|-----------------------|
| Specification              | IEC 60512-5-1:2002-02 |
| Tested number of positions | 4                     |

### Insulation resistance

|  |                       |
|--|-----------------------|
| Specification                                | IEC 60512-3-1:2002-02 |
| Insulation resistance, neighboring positions | > 15 TΩ               |

### Air clearances and creepage distances |

|  |                     |
|--|---------------------|
| Specification                          | IEC 60664-1:2007-04 |
| Insulating material group              | I                   |
| Comparative tracking index (IEC 60112) | CTI 600             |
| Rated insulation voltage (III/3)       | 250 V               |

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|  |        |
|--|--------|
| Rated surge voltage (III/3)                            | 4 kV   |
| minimum clearance value - non-homogenous field (III/3) | 3 mm   |
| minimum creepage distance (III/3)                      | 3.2 mm |
| Rated insulation voltage (III/2)                       | 320 V  |
| Rated surge voltage (III/2)                            | 4 kV   |
| minimum clearance value - non-homogenous field (III/2) | 3 mm   |
| minimum creepage distance (III/2)                      | 3 mm   |
| Rated insulation voltage (II/2)                        | 600 V  |
| Rated surge voltage (II/2)                             | 4 kV   |
| minimum clearance value - non-homogenous field (II/2)  | 3 mm   |
| minimum creepage distance (II/2)                       | 3.2 mm |

## Environmental and real-life conditions

### Vibration test

|                        |                             |
|------------------------|-----------------------------|
| Specification          | IEC 60068-2-6:2007-12       |
| Frequency              | 10 - 150 - 10 Hz            |
| Sweep speed            | 1 octave/min                |
| Amplitude              | 0.35 mm (10 Hz ... 60.1 Hz) |
| Sweep speed            | 5g (60.1 Hz ... 150 Hz)     |
| Test duration per axis | 2.5 h                       |

### Durability test

|  |                       |
|--|-----------------------|
| Specification                                | IEC 60512-9-1:2010-03 |
| Impulse withstand voltage at sea level       | 4.8 kV                |
| Contact resistance $R_1$                     | 2 mΩ                  |
| Contact resistance $R_2$                     | 2.2 mΩ                |
| Insertion/withdrawal cycles                  | 25                    |
| Insulation resistance, neighboring positions | > 5 MΩ                |

### Climatic test

|                                   |   |
|-----------------------------------|---|
| Specification                     | ISO 6988:1985-02  |
| Corrosive stress                  | 0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /40 °C/1 cycle |
| Thermal stress                    | 100 °C/168 h  |
| Power-frequency withstand voltage | 2.2 kV  |

### Ambient conditions

|   |   |
|---|---|
| Ambient temperature (operation)         | -40 °C ... 105 °C (dependent on the derating curve) |
| Ambient temperature (storage/transport) | -40 °C ... 55 °C                                    |
| Relative humidity (storage/transport)   | 30 % ... 70 %                                       |
| Ambient temperature (assembly)          | -5 °C ... 100 °C                                    |

## Packaging specifications

|                      |                     |
|----------------------|---------------------|
| Type of packaging    | packed in cardboard |
| Outer packaging type | Carton              |

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27460201 |
| ECLASS-12.0 | 27460201 |
| ECLASS-13.0 | 27460201 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC002637 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121400 |
|-------------|----------|

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## Environmental product compliance

|            |   |
|------------|---|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

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