

# SPT-SMD 1,5/ 3-H-5,0 R32 - PCB terminal block



1824750

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PCB terminal block, nominal current: 17.5 A, rated voltage (III/2): 320 V, nominal cross section: 1.5 mm<sup>2</sup>, number of potentials: 3, number of rows: 1, number of positions per row: 3, product range: SPT 1,5/..-H-SMD, pitch: 5 mm, connection method: Push-in spring connection, mounting: SMD soldering, conductor/PCB connection direction: 0 °, color: black, Pin layout: Linear pad geometry, number of solder pins per potential: 1, type of packaging: 32 mm wide tape

## Your advantages

- Time saving push-in connection, tools not required
- Defined contact force ensures that contact remains stable over the long term
- Intuitive operation due to color-coded actuating push button
- Designed for integration into the SMT soldering process
- Quick and convenient testing using integrated test option
- Operation and conductor connection from one direction enable integration into front of device

## Commercial data

|                                      |                   |
|--------------------------------------|-------------------|
| Item number                          | 1824750           |
| Packing unit                         | 300 pc            |
| Minimum order quantity               | 300 pc            |
| Sales key                            | AA12              |
| Product key                          | AALDAA            |
| Catalog page                         | Page 9 (NTK-2014) |
| GTIN                                 | 4046356816953     |
| Weight per piece (including packing) | 3.002 g           |
| Weight per piece (excluding packing) | 3 g               |
| Customs tariff number                | 85369010          |
| Country of origin                    | PL                |

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## Technical data

### Product properties

|                           |                                |
|---------------------------|--------------------------------|
| Product type              | Printed circuit board terminal |
| Product family            | SPT 1,5/..-H-SMD               |
| Product line              | COMBICON Terminals S           |
| Number of positions       | 3                              |
| Pitch                     | 5 mm                           |
| Number of connections     | 3                              |
| Number of rows            | 1                              |
| Number of potentials      | 3                              |
| Pin layout                | Linear pad geometry            |
| Solder pins per potential | 1                              |

### Electrical properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 17.5 A |
| Nominal voltage $U_N$       | 320 V  |
| Degree of pollution         | 3      |
| 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)        | 500 V  |
| Rated surge voltage (II/2)  | 4 kV   |

### Connection data

#### Connection technology

|                       |                     |
|-----------------------|---------------------|
| Nominal cross section | 1.5 mm <sup>2</sup> |
|-----------------------|---------------------|

#### Conductor connection

|                                                                       |                                              |
|-----------------------------------------------------------------------|----------------------------------------------|
| Connection method                                                     | Push-in spring connection                    |
| Conductor cross section rigid                                         | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| Conductor cross section flexible                                      | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| Conductor cross section AWG                                           | 24 ... 16                                    |
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| Conductor cross section, flexible, with ferrule, with plastic sleeve  | 0.2 mm <sup>2</sup> ... 0.75 mm <sup>2</sup> |
| Stripping length                                                      | 8 mm                                         |

### Mounting

|               |                     |
|---------------|---------------------|
| Mounting type | SMD soldering       |
| Pin layout    | Linear pad geometry |

#### Processing notes

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|                                  |                  |
|----------------------------------|------------------|
| Process                          | Reflow soldering |
| Moisture Sensitive Level         | MSL 1            |
| Classification temperature $T_c$ | 260 °C           |
| Solder cycles in the reflow      | 3                |

## 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                  | hot-dip tin-plated                                                               |
| Metal surface terminal point (top layer) | Tin (4 - 8 $\mu\text{m}$ Sn)                                                     |
| Metal surface soldering area (top layer) | Tin (4 - 8 $\mu\text{m}$ Sn)                                                     |

### Material data - housing

|                                        |              |
|----------------------------------------|--------------|
| Color (Housing)                        | black (9005) |
| Insulating material                    | LCP          |
| Insulating material group              | IIIa         |
| CTI according to IEC 60112             | 175          |
| Flammability rating according to UL 94 | V0           |

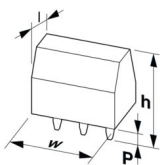
### Material data – actuating element

|                                        |              |
|----------------------------------------|--------------|
| Color (Actuating element)              | white (9010) |
| Insulating material                    | PA GF        |
| Insulating material group              | I            |
| CTI according to IEC 60112             | 600          |
| Flammability rating according to UL 94 | V0           |

## Notes

|                       |                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------|
| Notes on operation    | The solder anchors on the outer poles reduce the mechanical strain on the SMD soldering spots. |
| Assembly instruction: | This item is not suitable for PCB cleaning with liquids.                                       |

## Dimensions

|                     |                                                                                      |
|---------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing |  |
| Pitch               | 5 mm                                                                                 |
| Width [w]           | 14 mm                                                                                |
| Height [h]          | 9.7 mm                                                                               |
| Length [l]          | 13.6 mm                                                                              |
| Installed height    | 7.7 mm                                                                               |
| Pin dimensions      | 0.7 x 0.3 mm                                                                         |

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## PCB design

|               |            |
|---------------|------------|
| Pad geometry  | 1.6 x 4 mm |
| Pin spacing   | 7 mm       |
| Hole diameter | 1.1 mm     |

## Mechanical tests

### Connection test

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60998-2-2:2002-12 |
| Result        | Test passed           |

### Test for conductor damage and slackening

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60998-2-2:2002-12 |
| Result        | Test passed           |

### Pull-out test

|                                                                             |                                         |
|-----------------------------------------------------------------------------|-----------------------------------------|
| Specification                                                               | IEC 60998-2-2:2002-12                   |
| Conductor cross section/conductor type/tractive force setpoint/actual value | 0.2 mm <sup>2</sup> / solid / > 10 N    |
|                                                                             | 0.2 mm <sup>2</sup> / flexible / > 10 N |
|                                                                             | 1.5 mm <sup>2</sup> / solid / > 40 N    |
|                                                                             | 1.5 mm <sup>2</sup> / flexible / > 40 N |

### Flexion test

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60998-2-2:2002-12 |
| Result        | Test passed           |

### Insulation holder for crimp connections

|        |             |
|--------|-------------|
| Result | Test passed |
|--------|-------------|

## Electrical tests

### Temperature-rise test

|                                   |                                                                                                                                |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Specification                     | IEC 60947-7-4:2019-01                                                                                                          |
| Requirement temperature-rise test | The sum of ambient temperature and temperature rise of the PCB terminal block shall not exceed the upper limiting temperature. |

### Insulation resistance

|                                              |                     |
|----------------------------------------------|---------------------|
| Specification                                | IEC 60998-1:2002-12 |
| Insulation resistance, neighboring positions | > 5 MΩ              |

### Air clearances and creepage distances |

|                                                        |                     |
|--------------------------------------------------------|---------------------|
| Specification                                          | IEC 60664-1:2007-04 |
| Insulating material group                              | IIIa                |
| Comparative tracking index (IEC 60112)                 | CTI 175             |
| Rated insulation voltage (III/3)                       | 250 V               |
| Rated surge voltage (III/3)                            | 4 kV                |
| minimum clearance value - non-homogenous field (III/3) | 3 mm                |

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|                                                        |        |
|--------------------------------------------------------|--------|
| minimum creepage distance (III/3)                      | 4 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)                      | 3.2 mm |
| Rated insulation voltage (II/2)                        | 500 V  |
| Rated surge voltage (II/2)                             | 4 kV   |
| minimum clearance value - non-homogenous field (II/2)  | 3 mm   |
| minimum creepage distance (II/2)                       | 5 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) |
| Acceleration           | 5g (60.1 Hz ... 150 Hz)     |
| Test duration per axis | 2.5 h                       |

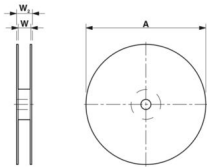
### Glow-wire test

|                  |                     |
|------------------|---------------------|
| Specification    | IEC 60998-1:2002-12 |
| Temperature      | 850 °C              |
| Time of exposure | 5 s                 |

### Ambient conditions

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

## Packaging specifications

|                             |                                                                                      |
|-----------------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing         |  |
| Type of packaging           | 32 mm wide tape                                                                      |
| [W] tape width              | 32 mm                                                                                |
| [W2] coil overall dimension | 38.4 mm                                                                              |
| [A] coil diameter           | 330 mm                                                                               |
| Outer packaging type        | Transparent-Bag                                                                      |
| ESD level                   | (D) electrostatically conductive                                                     |
| Specification               | DIN EN 61340-5-1 (VDE 0300-5-1): 2008-07                                             |

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