

# Printed-circuit board connector - MSTBT 2,5/13-ST-5,08 - 1781098

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PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 13, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin



The figure shows a 10-position version of the product

## Your advantages

- Well-known connection principle allows worldwide use
- Low temperature rise, thanks to maximum contact force
- Allows connection of two conductors



## Key Commercial Data

Packing unit	50 pc
GTIN	
GTIN	4017918041021

## Technical data

### Item properties

Brief article description	Printed-circuit board connector
Plug-in system	CLASSIC COMBICON
Type of contact	Female connector
Range of articles	MSTBT 2,5/...-ST
Pitch	5.08 mm
Number of positions	13
Connection method	Screw connection with tension sleeve
Drive form screw head	Slotted (L)
Screw thread	M3
Locking	without
Number of levels	1
Number of connections	13

# Printed-circuit board connector - MSTBT 2,5/13-ST-5,08 - 1781098

## Technical data

### Item properties

Number of potentials	13
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### Electrical parameters

Nominal current	12 A
Nom. voltage	320 V
Rated voltage	250 V
Rated voltage (III/2)	320 V
Rated voltage (II/2)	630 V
Rated surge voltage (III/3)	4 kV
Rated surge voltage (III/2)	4 kV
Rated surge voltage (II/2)	4 kV

### Connection capacity

Connection method	Screw connection with tension sleeve
pluggable	Yes
Conductor cross section solid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG / kcmil	24 ... 12
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
2 conductors with same cross section, solid	0.2 mm <sup>2</sup> ... 1 mm <sup>2</sup>
2 conductors with same cross section, flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
2 conductors with same cross section, flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 1 mm <sup>2</sup>
2 conductors with the same cross section, flexible, with TWIN ferrule with plastic sleeve	0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Cylindrical gauge a x b / diameter	2.8 mm x 2.0 mm / 2.4 mm
Stripping length	7 mm
Torque	0.5 Nm ... 0.6 Nm

### 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 (5 - 7 µm Sn)
Metal surface contact area (top layer)	Tin (5 - 7 µm Sn)

### Material data - housing

Housing color	green (6021)
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0

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## Technical data

### Material data - housing

Glow wire flammability index GWFI according to EN 60695-2-12	850
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

### Dimensions for the product

Length [ l ]	18.2 mm
Width [ w ]	66.04 mm
Height [ h ]	15 mm
Pitch	5.08 mm
Height (without solder pin)	15 mm

### Packaging information

Type of packaging	packed in cardboard
Pieces per package	50
Denomination packing units	Pcs.

### General product information

Note	In accordance with IEC 61984, COMBICON connectors have no switching power (COC). During designated use, they must not be plugged in or disconnected when carrying voltage or under load.
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### Ambient conditions

Ambient temperature (storage/transport)	-40 °C ... 70 °C
Ambient temperature (assembly)	-5 °C ... 100 °C
Ambient temperature (operation)	-40 °C ... 100 °C (dependent on the derating curve)

### Termination and connection method

Test for conductor damage and slackening	IEC 60999-1:1999-11
	Test passed

### Pull-out test

Pull-out test	IEC 60999-1:1999-11
	Test passed
Conductor cross section / conductor type / tensile force	0.2 mm <sup>2</sup> / solid / > 10 N
	0.2 mm <sup>2</sup> / flexible / > 10 N
	2.5 mm <sup>2</sup> / solid / > 50 N
	2.5 mm <sup>2</sup> / flexible / > 50 N

### Mechanical tests according to standard

Test specification	IEC 61984
Visual inspection	IEC 60512-1-1:2002-02
Dimension check	IEC 60512-1-2:2002-02
Resistance of inscriptions	IEC 60068-2-70:1995-12
Insertion and withdrawal force	IEC 60512-13-2:2006-02
No. of cycles	25

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## Technical data

### Mechanical tests according to standard

Insertion strength per pos. approx.	8 N
Withdraw strength per pos. approx.	6 N
Polarization and coding	IEC 60512-13-5:2006-02
Contact holder in insert	IEC 60512-15-1:2008-05
Test force per pos.	36 N

### Air clearances and creepage distances

Clearances and creepage distances	IEC 60664-1:2007-04
Specification	IEC 60664-1:2007-04
Minimum clearance - inhomogeneous field (III/3)	3 mm
Minimum clearance - inhomogeneous field (III/2)	3 mm
Minimum clearance - inhomogeneous field (II/2)	3 mm
Minimum creepage distance value (III/3)	3.2 mm
Minimum creepage distance value (III/2)	3 mm
Minimum creepage distance value (II/2)	3.2 mm

### Current carrying capacity / derating curves

Caption	Type: MSTBT 2,5/...-ST-5,08 with CC 2,5/...-G-5,08 P26THR
Specification	IEC 61984:2008-10
Reduction factor	0.8
Note	Representation based on IEC 60512-5-2:2002-02
	For number of positions, see diagram

### Mechanical tests (A)

Test specification	IEC 61984
Insertion strength per pos. approx.	8 N
Withdraw strength per pos. approx.	6 N
Polarization when inserted requirement >20 N	Test passed
Contact holder in insert requirements >20 N	Test passed

### Durability tests (B)

Specification	IEC 60512-9-1:2010-03
Contact resistance R <sub>1</sub>	1.3 mΩ
Insertion/withdrawal cycles	25
Contact resistance R <sub>2</sub>	1.3 mΩ
Impulse withstand voltage at sea level	4.8 kV
Power-frequency withstand voltage	2.21 kV
Insulation resistance, neighboring positions	> 0.2 TΩ

### Thermal tests (C)

Specification	IEC 60512-5-1:2002-02
Number of positions	12
Conductor cross section	2.5 mm <sup>2</sup>

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## Technical data

### Thermal tests (C)

Test current	12 A
Upper limiting temperature requirements <100 °C	Test passed

### Climatic tests (D)

Specification	ISO 6988:1985-02
Cold stress	-40 °C/2 h
Thermal stress	100 °C/168 h
Corrosive stress	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /40 °C/1 cycle
Impulse withstand voltage at sea level	4.8 kV
Power-frequency withstand voltage	2.21 kV

### Environmental and durability tests (E)

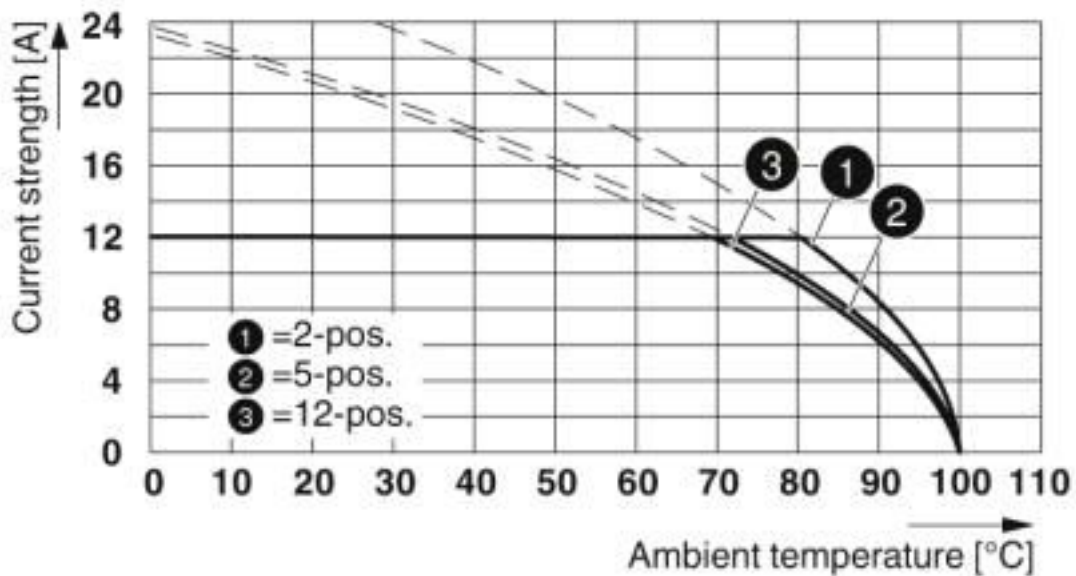
Specification	IEC 61984:2008-10
Result, degree of protection, IP code	Finger safety with IP20 test finger

### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

## Drawings

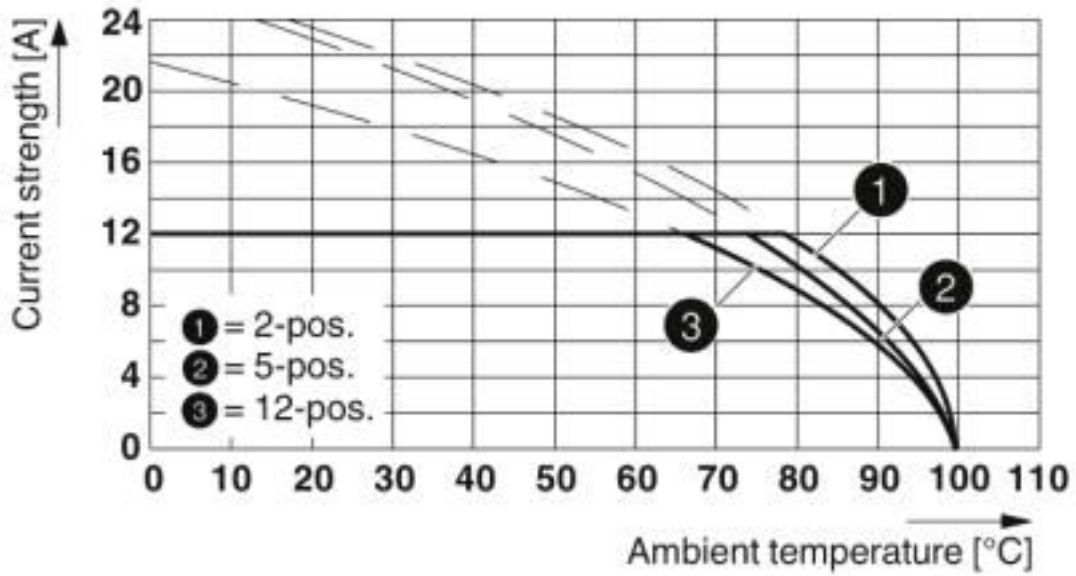
Diagram



Type: MSTBT 2,5/...-ST-5,08 with CC 2,5/...-G-5,08 P26THR

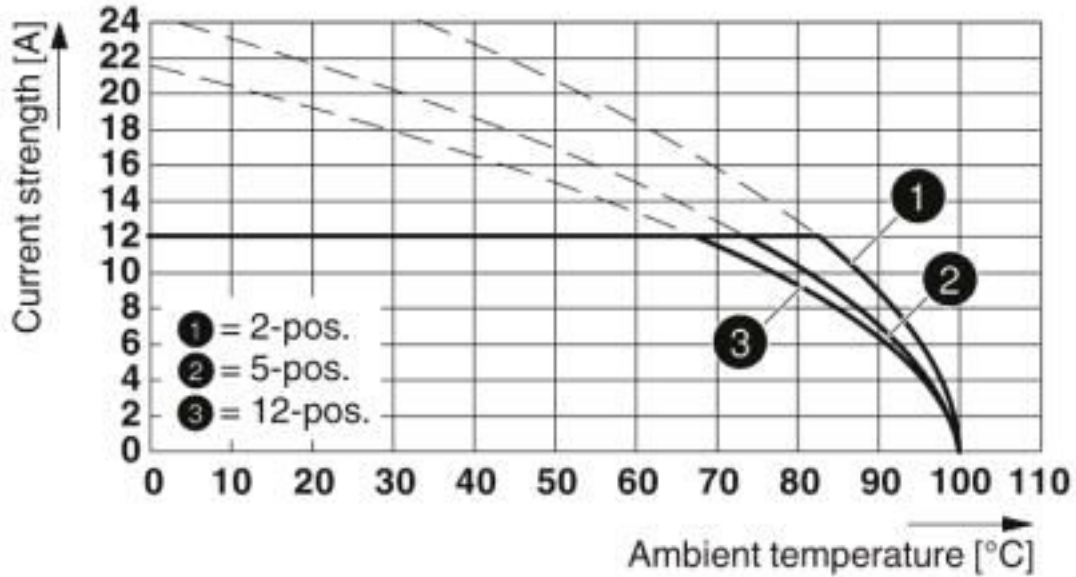
# Printed-circuit board connector - MSTBT 2,5/13-ST-5,08 - 1781098

Diagram



Type: MSTBT 2,5/...-ST-5,08 with CCA 2,5/...-G-5,08 P26 THR

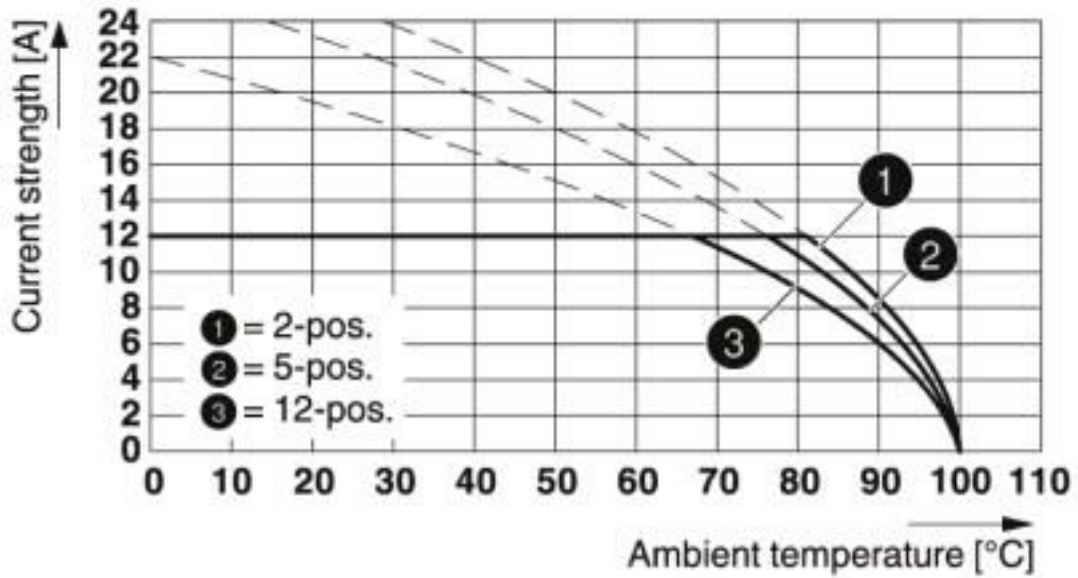
Diagram



Type: MSTBT 2,5/...-ST-5,08 with CCV 2,5/...-G-5,08 P26THR

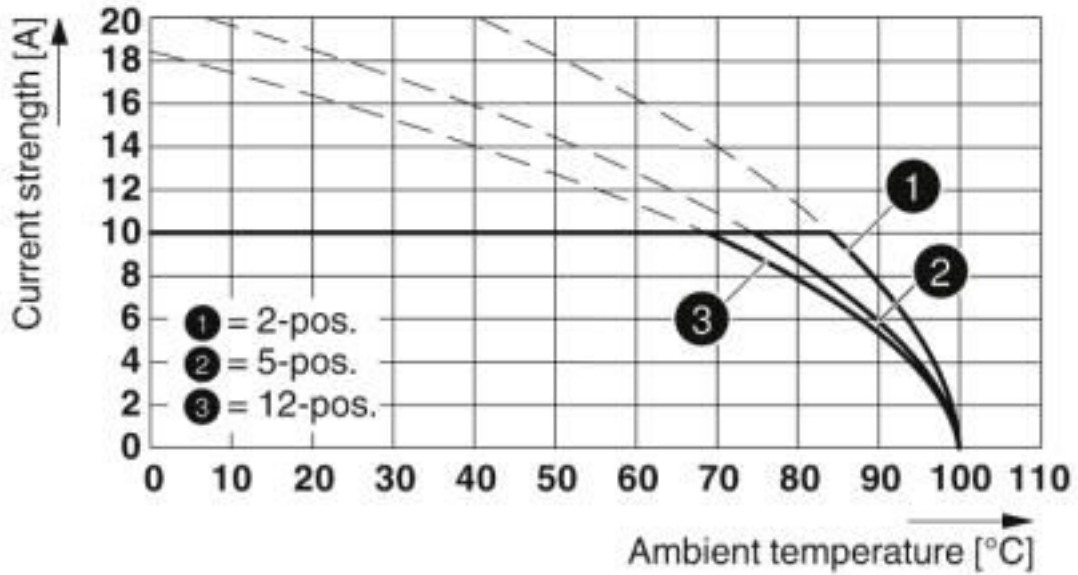
# Printed-circuit board connector - MSTBT 2,5/13-ST-5,08 - 1781098

Diagram



Type: MSTBT 2,5/...-ST-5,08 with CCVA 2,5/...-G-5,08 P26 THR

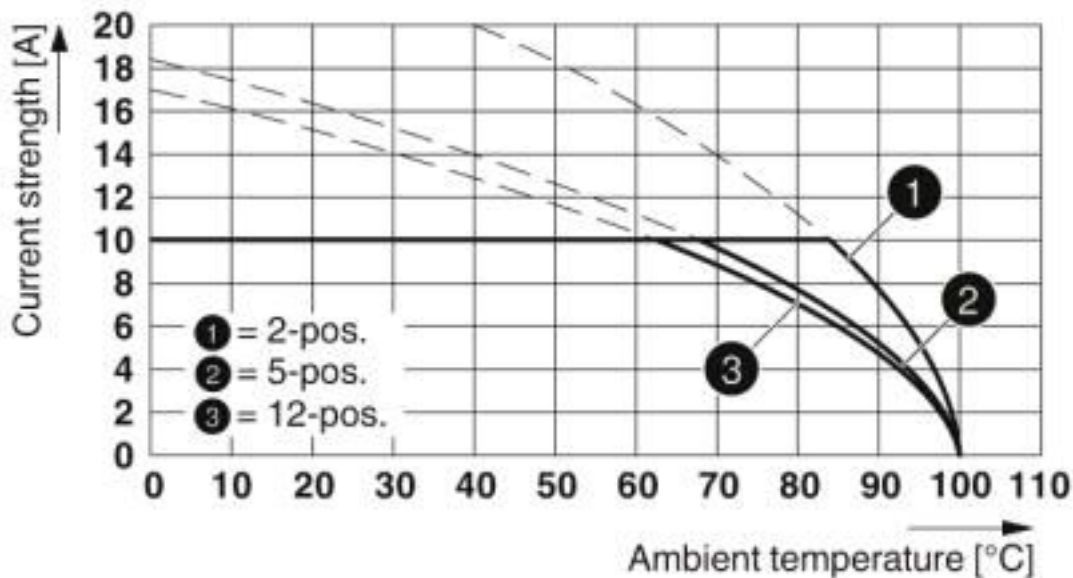
Diagram



Type: MSTBT 2,5/...-ST-5,08 with MDSTB 2,5/...-G-5,08

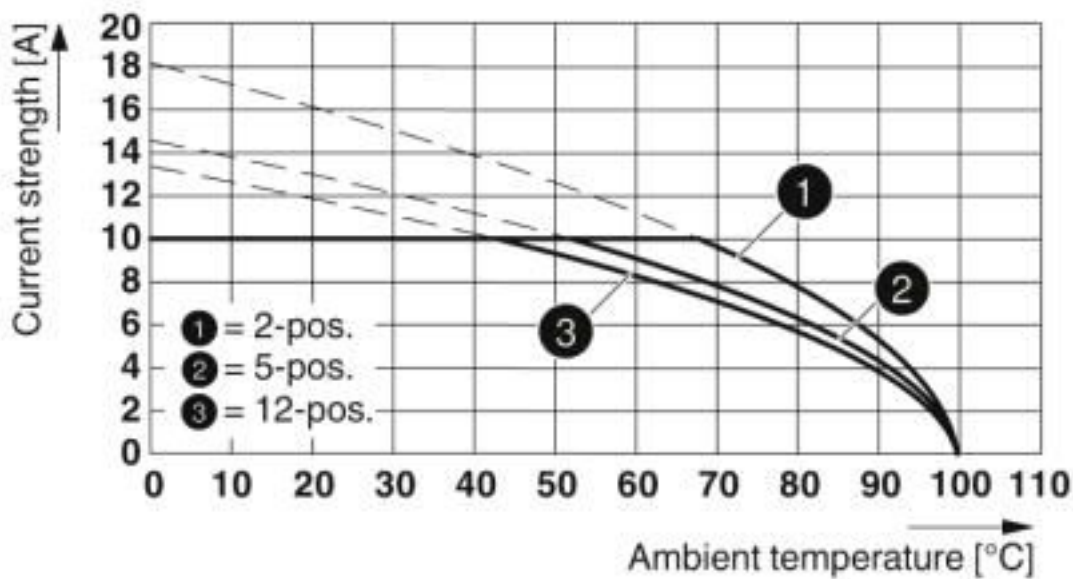
# Printed-circuit board connector - MSTBT 2,5/13-ST-5,08 - 1781098

Diagram



Type: MSTBT 2,5/...-ST-5,08 with MDSTBA 2,5/...-G-5,08

Diagram

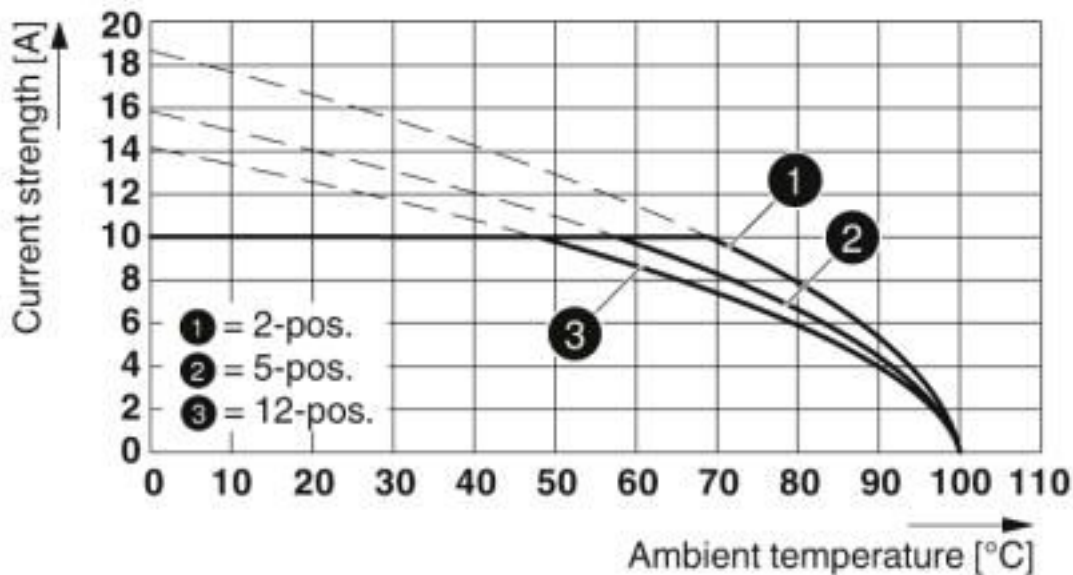


Type: MSTBT 2,5/...-ST-5,08 with MDSTBV 2,5/...-G-5,08



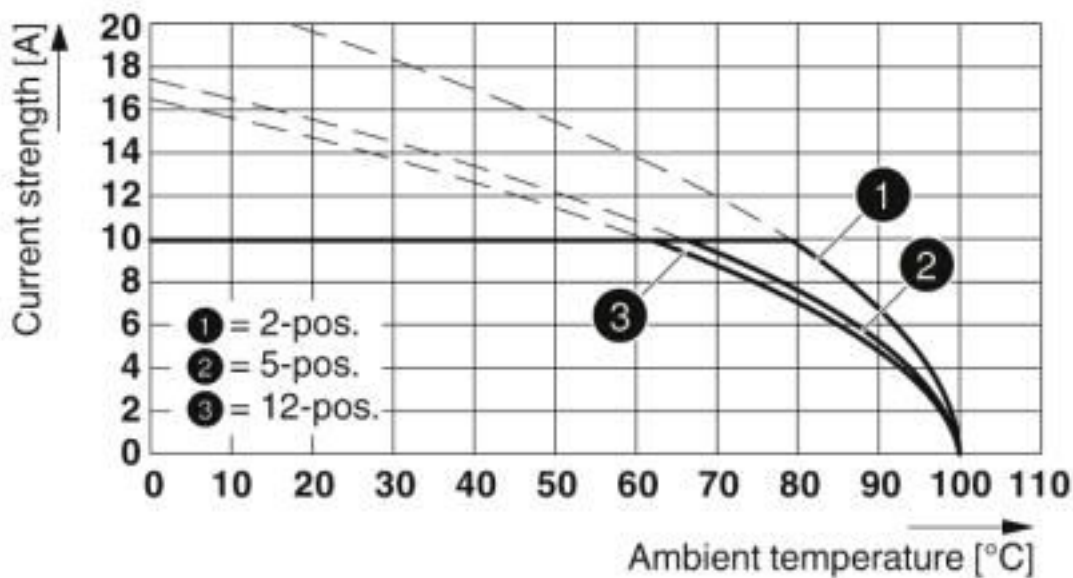
# Printed-circuit board connector - MSTBT 2,5/13-ST-5,08 - 1781098

Diagram



Type: MSTBT 2,5/...-ST-5,08 with MDSTBVA 2,5/...-G-5,08

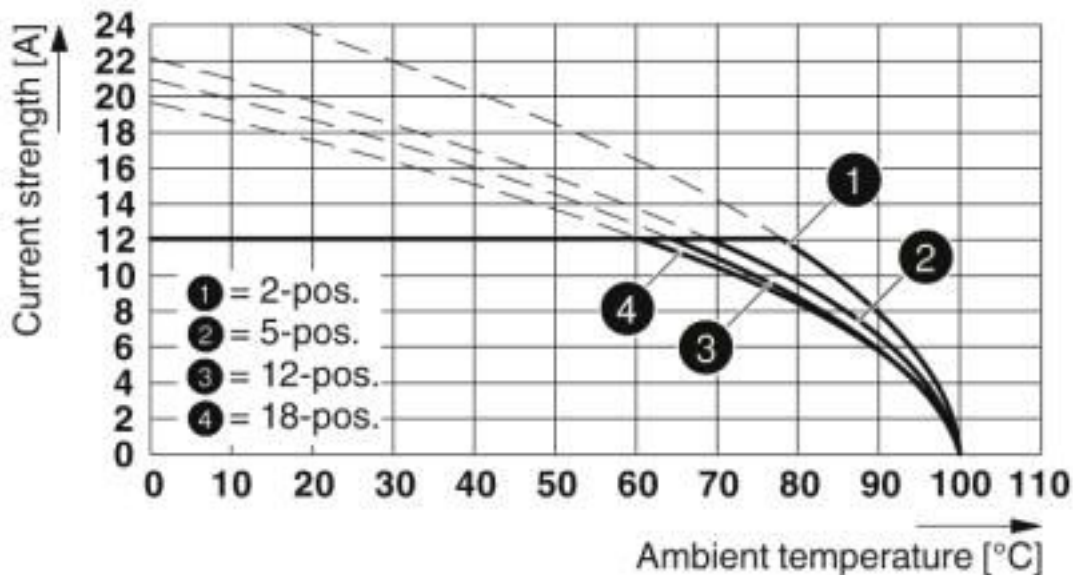
Diagram



Type: MSTBT 2,5/...-ST-5,08 with MDSTBW 2,5/...-G-5,08

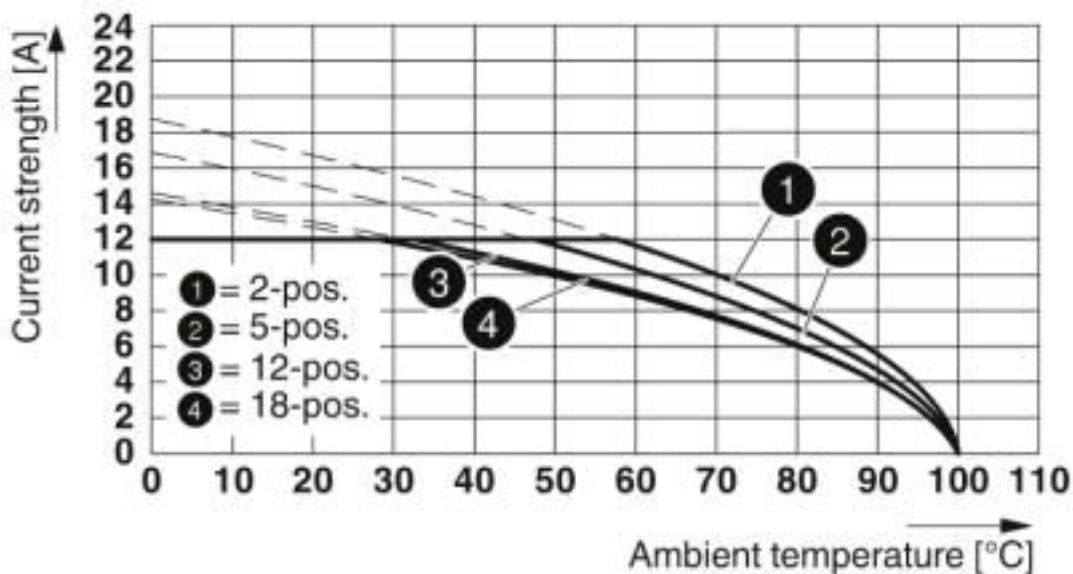
# Printed-circuit board connector - MSTBT 2,5/13-ST-5,08 - 1781098

Diagram



Type: MSTBT 2,5/...-ST-5,08 with MSTBW 2,5/...-G-5,08

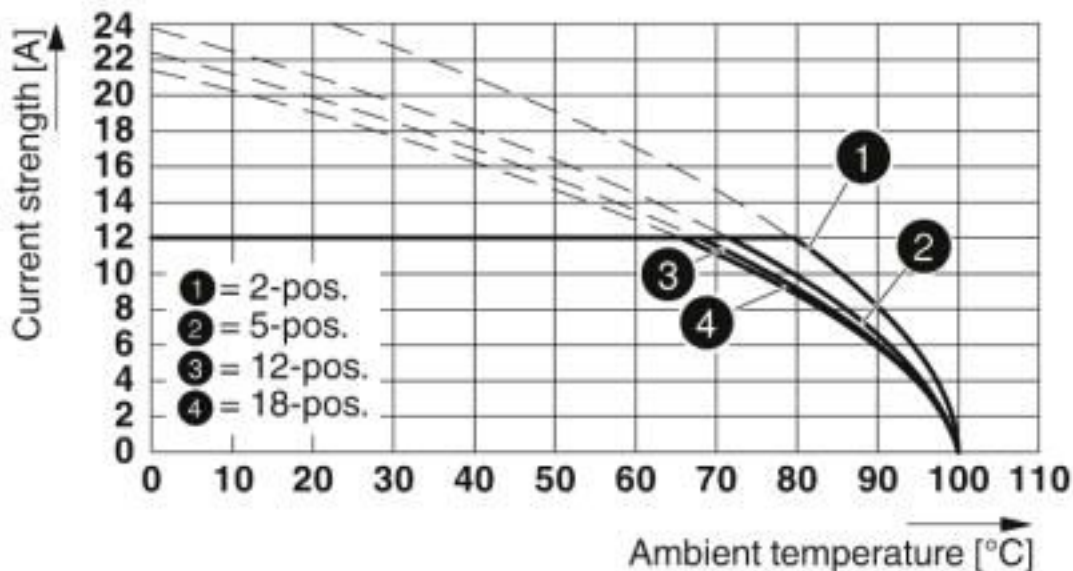
Diagram



Type: MSTBT 2,5/...-ST-5,08 with MSTBV 2,5/...-G-5,08-5,08

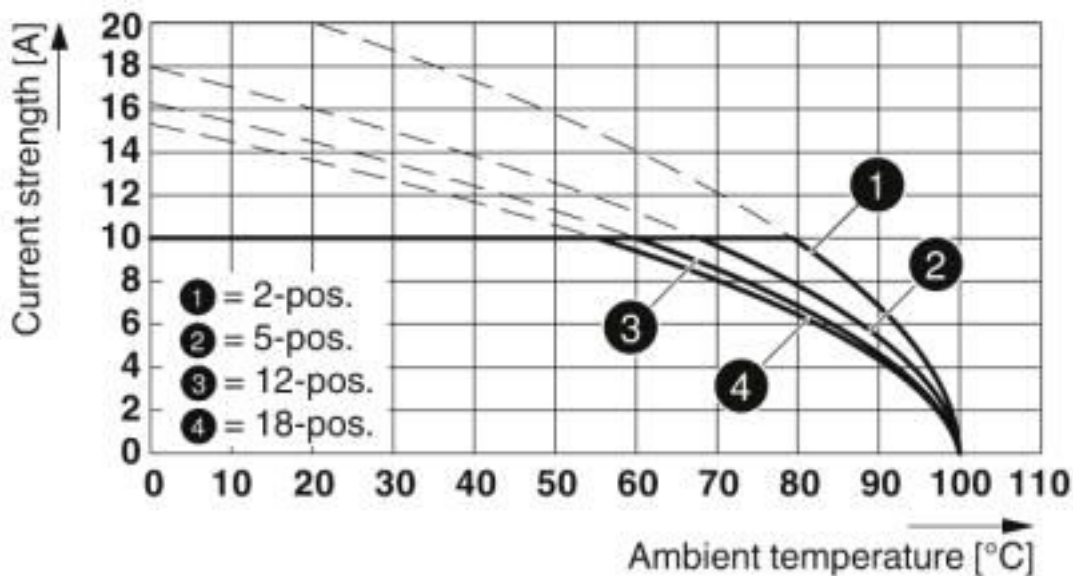
# Printed-circuit board connector - MSTBT 2,5/13-ST-5,08 - 1781098

Diagram



Type: MSTBT 2,5/...-ST-5,08 with MSTBA 2,5/...-G-5,08-5,08

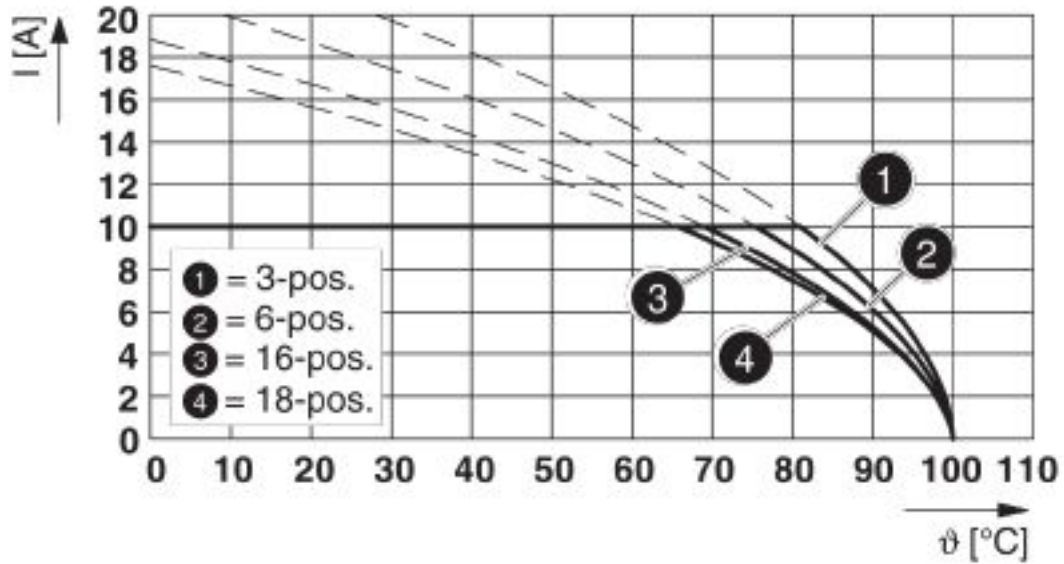
Diagram



Type: MSTBT 2,5/...-ST-5,08 with MDSTB 2,5/...-G1-5,08

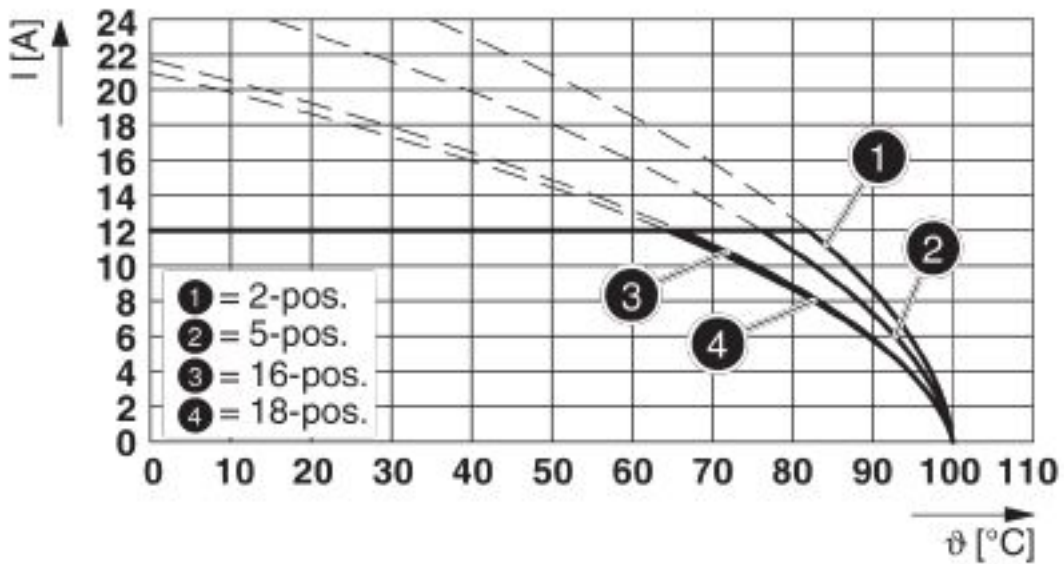
# Printed-circuit board connector - MSTBT 2,5/13-ST-5,08 - 1781098

Diagram



Type: MSTBT 2,5/...-ST-5,08 with MDSTBV 2,5/...-G1-5,08

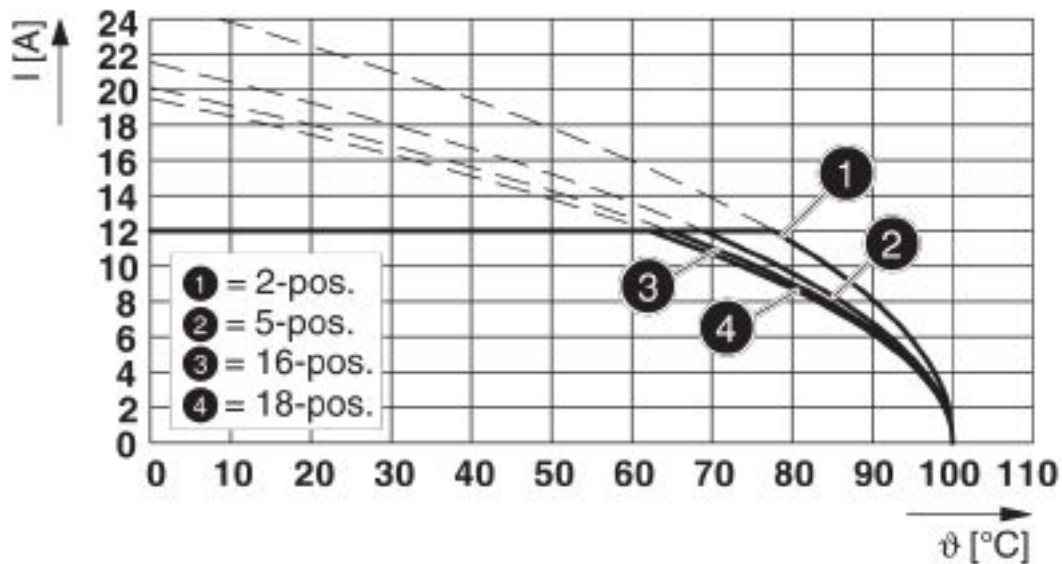
Diagram



Type: MSTBT 2,5/...-ST-5,08 with SMSTBA 2,5/...-G-5,08

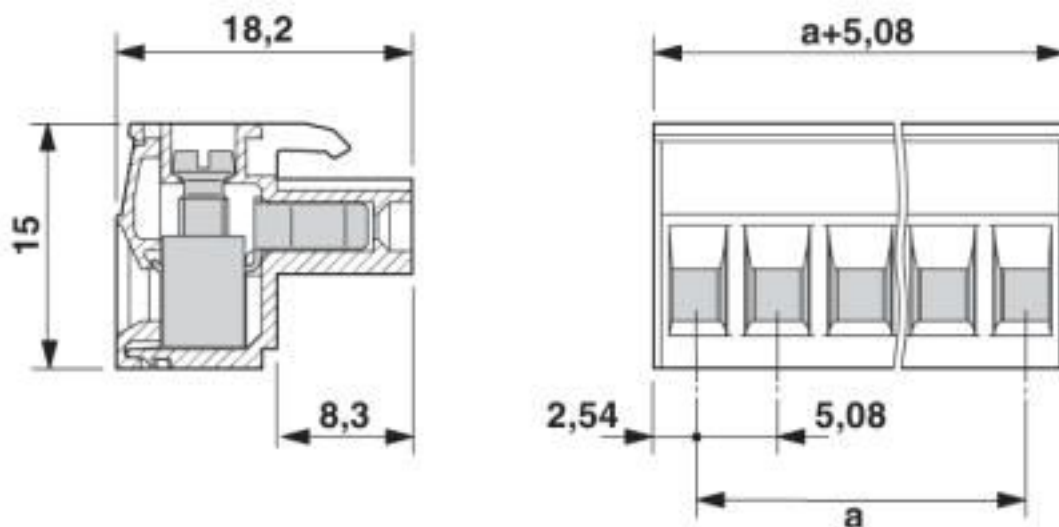
# Printed-circuit board connector - MSTBT 2,5/13-ST-5,08 - 1781098

Diagram



Type: MSTBT 2,5/...-ST-5,08 with SMSTB 2,5/...-G-5,08

Dimensional drawing



## Classifications

eCl@ss

eCl@ss 10.0.1	27440309
eCl@ss 4.0	27260700
eCl@ss 4.1	27260700
eCl@ss 5.0	27260700
eCl@ss 5.1	27260700

# Printed-circuit board connector - MSTBT 2,5/13-ST-5,08 - 1781098

## Classifications

### eCl@ss

eCl@ss 6.0	27260700
eCl@ss 7.0	27440309
eCl@ss 8.0	27440309
eCl@ss 9.0	27440309

### ETIM

ETIM 3.0	EC001121
ETIM 4.0	EC002638
ETIM 5.0	EC002638
ETIM 6.0	EC002638
ETIM 7.0	EC002638

### UNSPSC

UNSPSC 6.01	30211810
UNSPSC 7.0901	39121409
UNSPSC 11	39121409
UNSPSC 12.01	39121409
UNSPSC 13.2	39121409
UNSPSC 18.0	39121409
UNSPSC 19.0	39121409
UNSPSC 20.0	39121409
UNSPSC 21.0	39121409

## Approvals


### Approvals

#### Approvals

CSA / IECCEB CB Scheme / EAC / cULus Recognized / VDE Zeichengenehmigung

#### Ex Approvals

### Approval details

CSA		<a href="http://www.csagroup.org/services-industries/product-listing/">http://www.csagroup.org/services-industries/product-listing/</a>	13631
	B	D	
Nominal voltage UN	300 V	300 V	
Nominal current IN	10 A	10 A	

# Printed-circuit board connector - MSTBT 2,5/13-ST-5,08 - 1781098

## Approvals

	B	D
mm²/AWG/kcmil	28-12	28-12

IECEE CB Scheme		<a href="http://www.iecee.org/">http://www.iecee.org/</a>	DE1-60988-B1B2
Nominal voltage UN	250 V		
Nominal current IN	12 A		
mm²/AWG/kcmil	0.2-2.5		

EAC		B.01687
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cULus Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	E60425-19931011
	B	D	
Nominal voltage UN	300 V	300 V	
Nominal current IN	15 A	10 A	
mm²/AWG/kcmil	30-12	30-12	

VDE Zeichengenehmigung		<a href="http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx">http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx</a>	40050694
Nominal voltage UN	250 V		
Nominal current IN	12 A		
mm²/AWG/kcmil	0.2-2.5		

## Accessories

Accessories

Bridge

Insertion bridge - EBP 2- 5 - 1733169

Insertion bridge for connectors with 5.0 mm or 5.08 mm pitch



## Printed-circuit board connector - MSTBT 2,5/13-ST-5,08 - 1781098

### Accessories

#### Cable housing

Cable housing - KGS-MSTB 2,5/13 - 1783821



Cable housing, pitch: 0 mm, number of positions: 13, dimension a: 65 mm, color: green

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#### Coding element

Coding profile - CP-MSTB - 1734634



Coding profile, is inserted into the slot on the plug or inverted header, red insulating material

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#### Labeled terminal marker

Marker card - SK 5,08/3,8:FORTL.ZAHLEN - 0804293



Marker card, Card, white, labeled, horizontal: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... (99)100, mounting type: adhesive, for terminal block width: 5.08 mm, lettering field size: 5.08 x 3.8 mm

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#### Screwdriver tools

Screwdriver - SZS 0,6X3,5 - 1205053



Actuation tool, for ST terminal blocks, insulated, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip

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#### Additional products

Feed-through header - MSTBW 2,5/13-G-5,08 - 1735772



PCB headers, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 13, pitch: 5.08 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.5 mm



## Printed-circuit board connector - MSTBT 2,5/13-ST-5,08 - 1781098

### Accessories

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#### Printed-circuit board connector - MSTBVA 2,5/13-G-5,08 - 1755846



PCB headers, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 13, pitch: 5.08 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.9 mm

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#### Printed-circuit board connector - MSTBA 2,5/13-G-5,08 - 1757352



PCB headers, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 13, pitch: 5.08 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.5 mm

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#### Feed-through header - MSTBV 2,5/13-G-5,08 - 1758128



PCB headers, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 13, pitch: 5.08 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.9 mm

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#### Feed-through header - MSTB 2,5/13-G-5,08 - 1759127



PCB headers, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 13, pitch: 5.08 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.5 mm

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#### Feed-through header - MDSTBV 2,5/13-G1-5,08 - 1762619



PCB headers, nominal current: 10 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 13, pitch: 5.08 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.9 mm, In combination with MVSTB or FKCV plug components, both an MVSTBW (or FKCVW) and an MVSTBR plug (or FKCVR) must be used. Combination with TMSTBP plug components is not possible!

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## Printed-circuit board connector - MSTBT 2,5/13-ST-5,08 - 1781098

### Accessories

#### Feed-through header - SMSTBA 2,5/13-G-5,08 - 1767481

PCB headers, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 13, pitch: 5.08 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.5 mm



#### Feed-through header - MSTBA 2,5/13-G-5,08-LA - 1768053

PCB headers, number of positions: 13, pitch: 5.08 mm, color: green, contact surface: Tin, pin layout: Linear pinning



#### Printed-circuit board connector - SMSTB 2,5/13-G-5,08 - 1769573

PCB headers, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 13, pitch: 5.08 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.5 mm



#### Feed-through header - MSTBV 2,5/13-GEH-5,08 - 1808573

PCB headers, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 13, pitch: 5.08 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.9 mm



#### Printed-circuit board connector - DFK-MSTBA 2,5/13-G-5,08 - 1898949

Feed-through header, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 13, pitch: 5.08 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.2 mm



## Printed-circuit board connector - MSTBT 2,5/13-ST-5,08 - 1781098

### Accessories

Printed-circuit board connector - DFK-MSTBVA 2,5/13-G-5,08 - 1899249



Feed-through header, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 13, pitch: 5.08 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning

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