

MSTBO 2,5/ 4-G1L BK - PCB header



2909002

<https://www.phoenixcontact.com/us/products/2909002>

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PCB headers, nominal cross section: 2.5 mm², color: black, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Sn, contact connection type: Pin, number of rows: 1, number of positions: 4, product range: MSTBO 2,5/..-G1L, pitch: 5 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.5 mm, number of solder pins per potential: 1, plug-in system: COMBICON MSTB 2,5, Pin connector pattern alignment: Orthogonal, locking: without, type of packaging: packed in cardboard, Product with pin output on left side

Your advantages

- Plug-in direction orthogonal to the PCB

Commercial data

Item number	2909002
Packing unit	200 pc
Minimum order quantity	200 pc
Sales key	AC08
Product key	ACHADB
GTIN	4017918381875
Weight per piece (including packing)	2.664 g
Weight per piece (excluding packing)	2.51 g
Customs tariff number	85366930
Country of origin	DE

MSTBO 2,5/ 4-G1L BK - PCB header



2909002

<https://www.phoenixcontact.com/us/products/2909002>

Technical data

Product properties

Product type	PCB headers
Product family	MSTBO 2,5/..-G1L
Product line	COMBICON Connectors M
Number of positions	4
Pitch	5 mm
Number of rows	1
Mounting flange	no
Pin layout	Linear pinning
Solder pins per potential	1

Data management status

Article revision	08
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Electrical properties

Nominal current I_N	12 A
Nominal voltage U_N	250 V
Contact resistance	1.5 m Ω
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)	630 V
Rated surge voltage (II/2)	4 kV

Mounting

Mounting type	Wave soldering
Pin layout	Linear 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

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

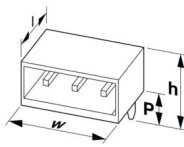
MSTBO 2,5/ 4-G1L BK - PCB header

2909002

<https://www.phoenixcontact.com/us/products/2909002>

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

Dimensional drawing	
Pitch	5 mm
Width [w]	19.95 mm
Height [h]	16.5 mm
Length [l]	14.65 mm
Solder pin length [P]	3.5 mm
Pin dimensions	1 x 1 mm

PCB design

Hole diameter	1.4 mm
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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 Requirements >20 N	Test passed

Insertion and withdrawal forces

Result	Test passed
No. of cycles	25

MSTBO 2,5/ 4-G1L BK - PCB header



2909002

<https://www.phoenixcontact.com/us/products/2909002>

Insertion strength per pos. approx.	13 N
Withdraw strength per pos. approx.	7 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	> 5 MΩ

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
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)	1.6 mm
Rated insulation voltage (II/2)	630 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)
Acceleration	5g (60.1 Hz ... 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis

Durability test

Specification	IEC 60512-9-1:2010-03
Impulse withstand voltage at sea level	4.8 kV
Contact resistance R ₁	1.5 mΩ
Contact resistance R ₂	1.5 mΩ

MSTBO 2,5/ 4-G1L BK - PCB header



2909002

<https://www.phoenixcontact.com/us/products/2909002>

Insertion/withdrawal cycles	25
Insulation resistance, neighboring positions	> 5 MΩ

Climatic test

Specification	ISO 6988:1985-02
Corrosive stress	0.2 dm ³ SO ₂ on 300 dm ³ /40 °C/1 cycle
Thermal stress	100 °C/168 h
Power-frequency withstand voltage	2.21 kV

Ambient conditions

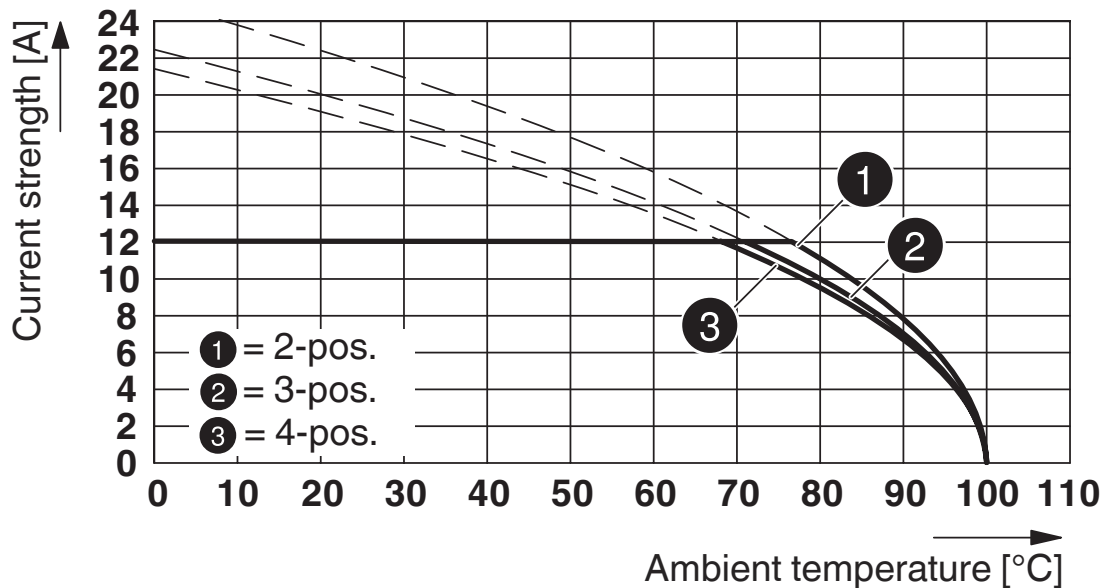
Ambient temperature (operation)	-40 °C ... 105 °C (dependent on the derating curve)
Ambient temperature (storage/transport)	-40 °C ... 55 °C
Relative humidity (storage/transport)	30 % ... 70 %
Ambient temperature (assembly)	-5 °C ... 100 °C

Packaging specifications

Type of packaging	packed in cardboard
Outer packaging type	Carton

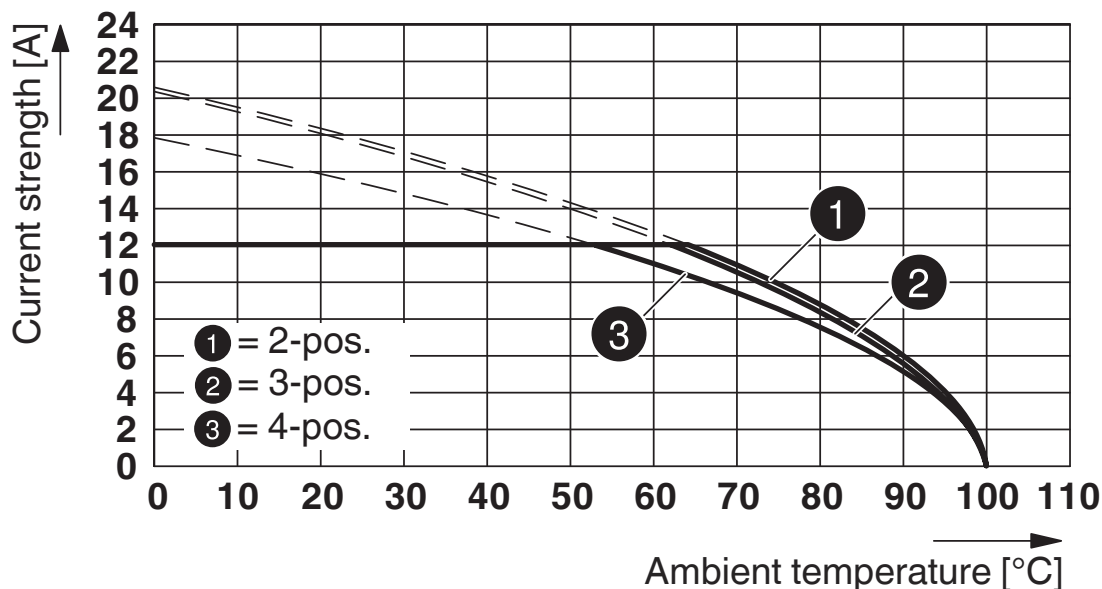
Drawings

Diagram



Type: MSTBP 2,5/...-ST with MSTBO 2,5/...-G1L

Diagram



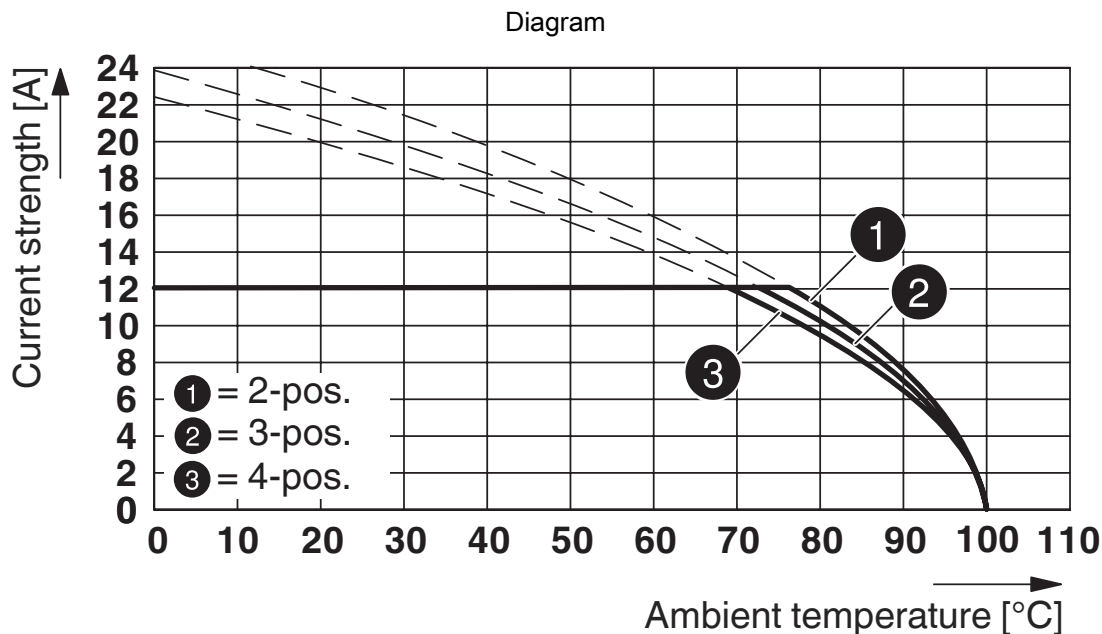
Type: MVSTB(R/W) 2,5/...-ST with MSTBO 2,5/...-G1L

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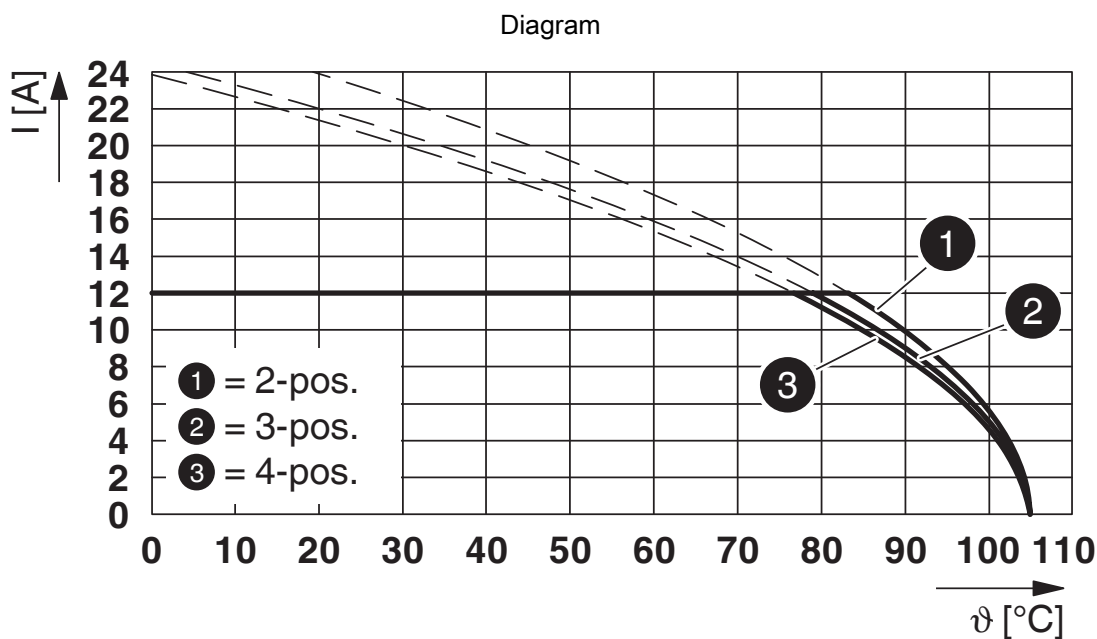


2909002

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Type: MSTBTP 2,5/...-ST with MSTBO 2,5/...-G1L



Type: FKCT 2,5/...-ST with MSTBO 2,5/...-G1L

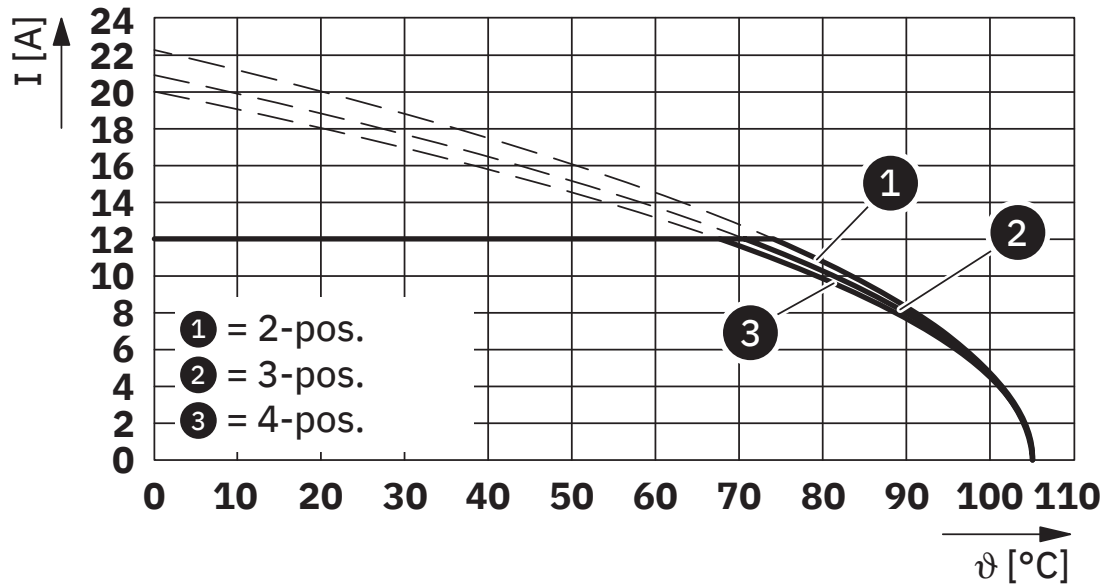
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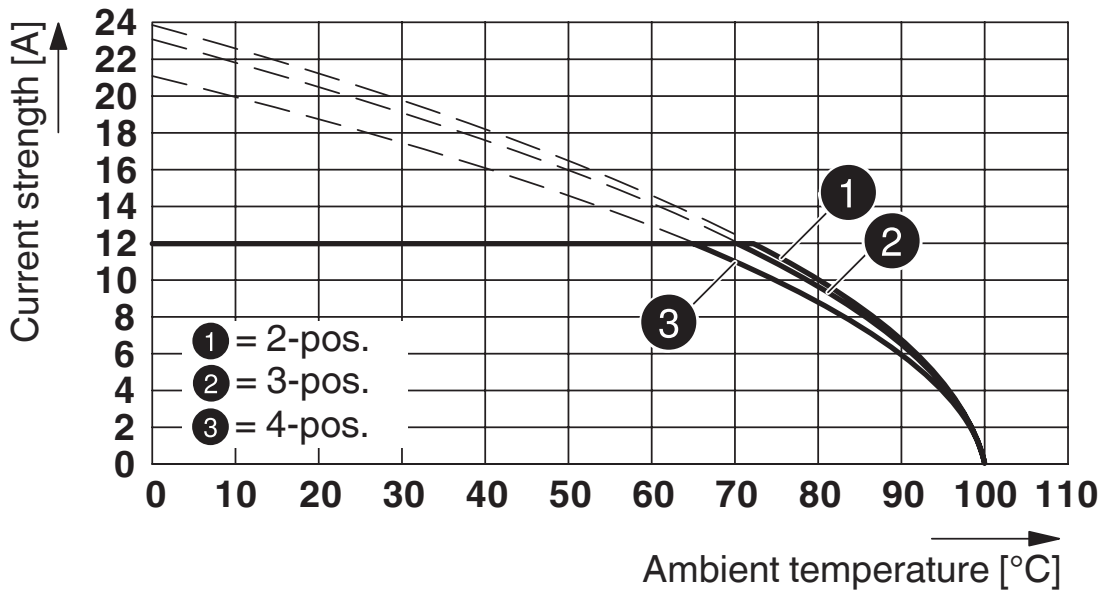
<https://www.phoenixcontact.com/us/products/2909002>

Diagram



Type: FKCVR 2,5/...-ST with MSTBO 2,5/...-G1L

Diagram



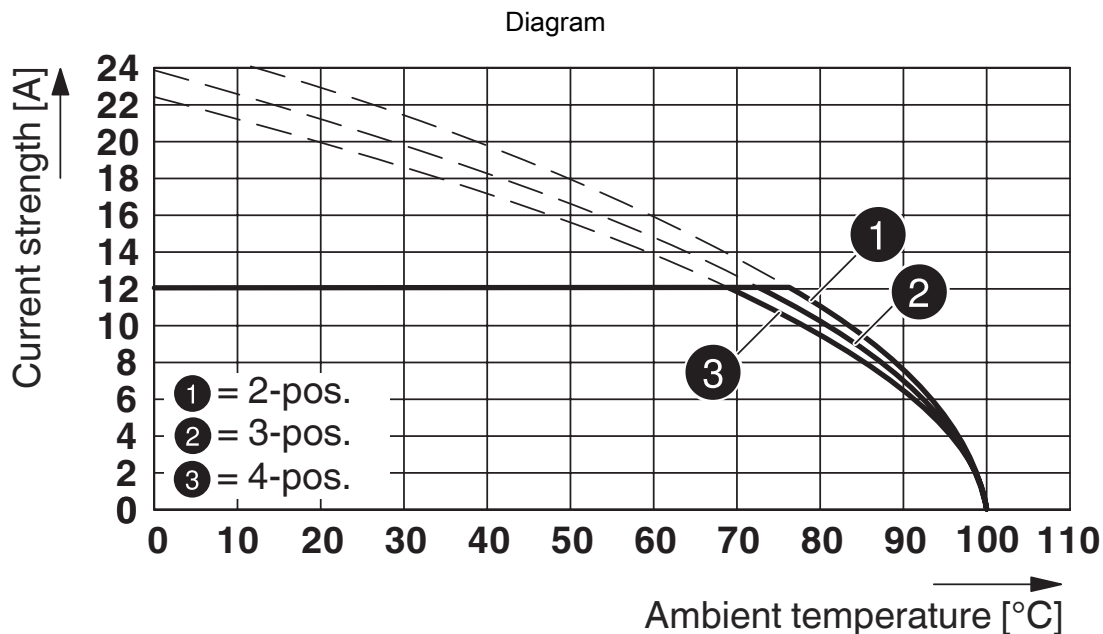
Type: FRONT-MSTB 2,5/...-ST with MSTBO 2,5/...-G1L

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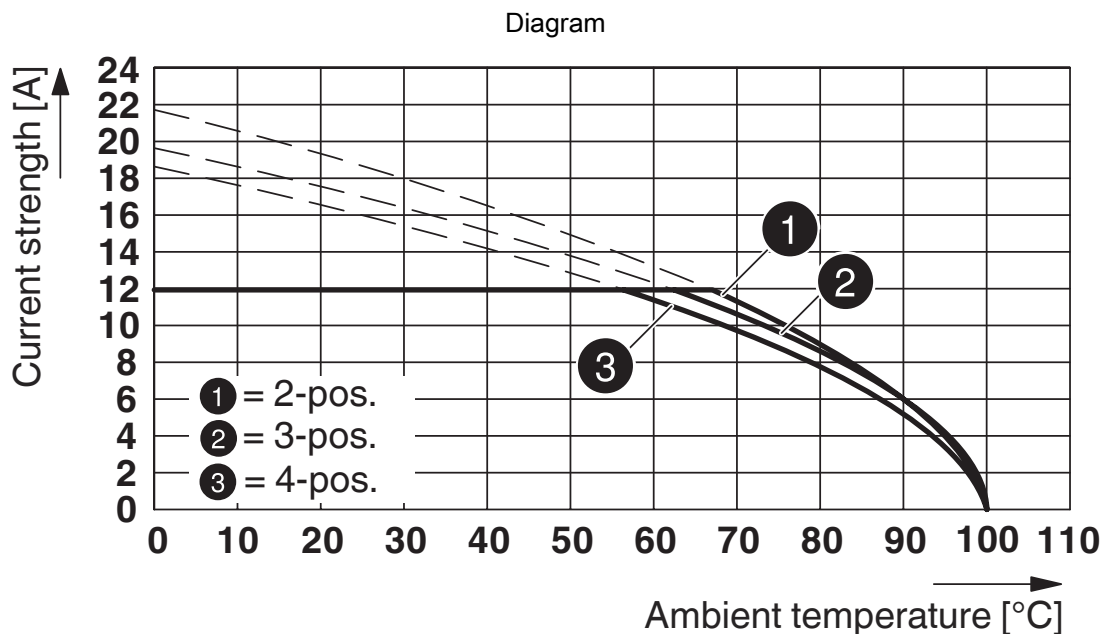


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Type: MSTBT 2,5/...-ST with MSTBO 2,5/...-G1L



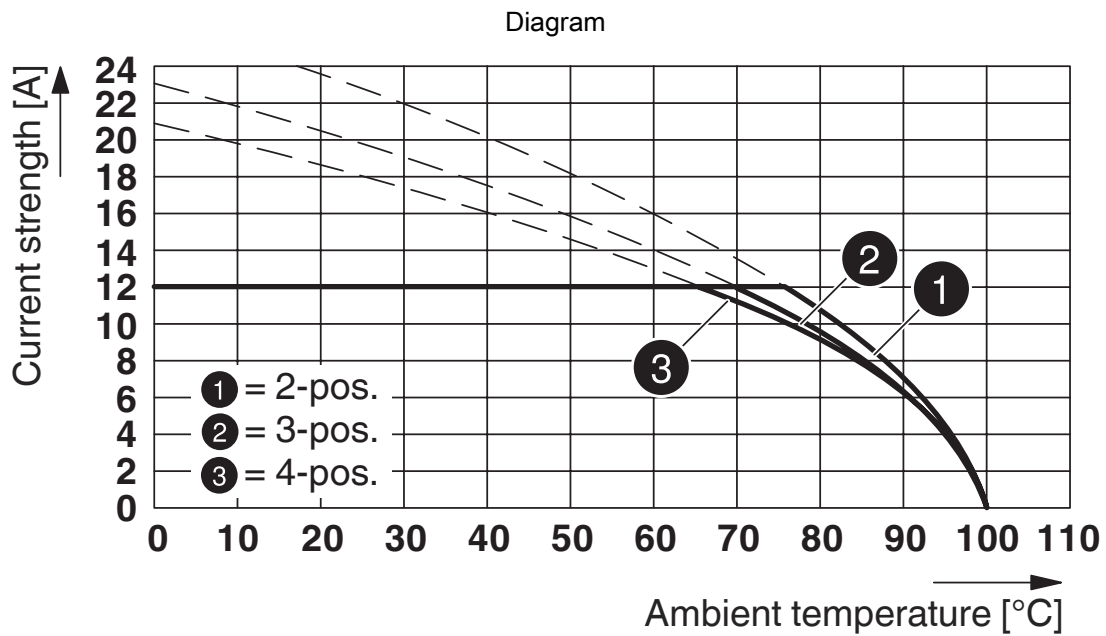
Type: SMSTB 2,5/...-ST with MSTBO 2,5/...-G1L

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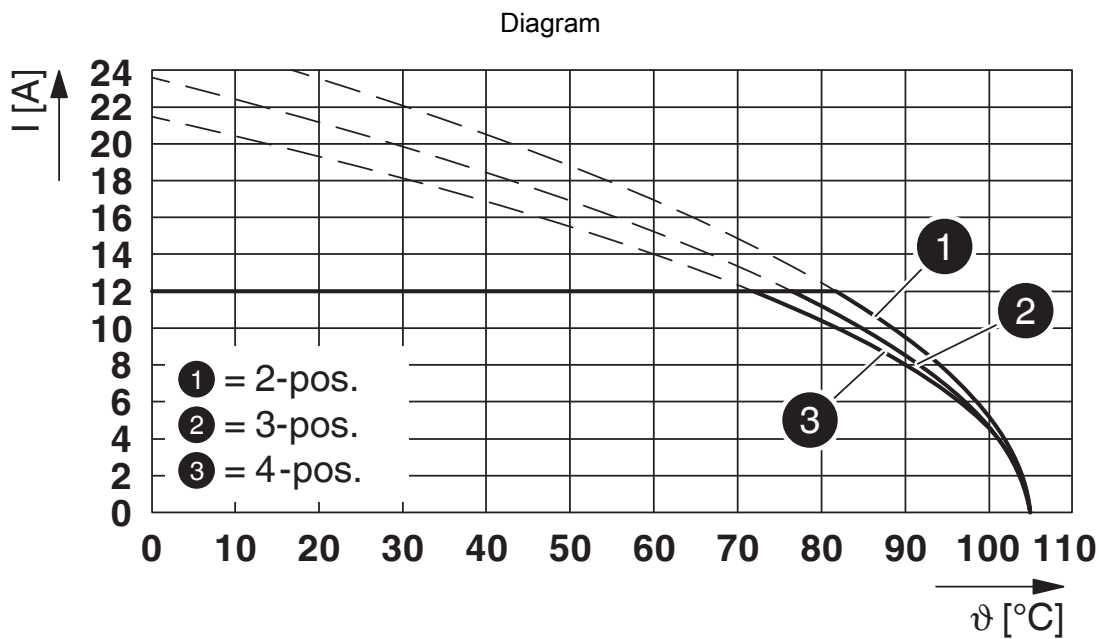


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Type: MSTB 2,5/...-ST with MSTBO 2,5/...-G1L



Type: FKCN 2,5/...-ST with MSTBO 2,5/...-G1L

MSTBO 2,5/ 4-G1L BK - PCB header





2909002


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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2909002>

 CSA Approval ID: 13631				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
Use group B	300 V	10 A	-	-
Use group D	300 V	10 A	-	-

 cULus Recognized Approval ID: E60425-20050718				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
Use group B	300 V	16 A	-	-
Use group D	300 V	10 A	-	-

 VDE Zeichengenehmigung Approval ID: 40050648				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
	250 V	8 A	-	-

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2909002

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Classifications

ECLASS

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

ETIM

ETIM 9.0	EC002637
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UNSPSC

UNSPSC 21.0	39121400
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2909002

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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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