

# Printed-circuit board connector - MSTBV 2,5/12-GF-5,08 - 1777170

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




The figure shows a 10-position version of the product

## Your advantages

- ✓ Maximum flexibility when it comes to device design – one header for connectors with different connection technologies
- ✓ Well-known mounting principle allows worldwide use
- ✓ Vertical connection enables multi-row arrangement on the PCB
- ✓ Screwable flange for superior mechanical stability



## Key Commercial Data

Packing unit	50 pc
GTIN	 4 017918 039349
GTIN	4017918039349

## Technical data

### Item properties

Brief article description	Feed-through header
Plug-in system	CLASSIC COMBICON
Type of contact	Male connector
Range of articles	MSTBV 2,5/...-GF
Pitch	5.08 mm
Number of positions	12
Mounting type	Wave soldering
Pin layout	Linear pinning
Locking	Threaded flange
Number of levels	1
Number of connections	12

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## Technical data

### Item properties

Number of potentials	12
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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)	400 V
Rated surge voltage (III/3)	4 kV
Rated surge voltage (III/2)	4 kV
Rated surge voltage (II/2)	4 kV

### 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 contact area (top layer)	Tin (3 - 5 µm Sn)
Metal surface contact area (middle layer)	Nickel (1.3 - 3 µm Ni),
Metal surface soldering area (top layer)	Tin (3 - 5 µm Sn)
Metal surface soldering area (middle layer)	Nickel (1.3 - 3 µm Ni)

### Material data - housing

Housing color	green (6021)
Insulating material	PBT
Insulating material group	IIIa
CTI according to IEC 60112	225
Flammability rating according to UL 94	V0

### Dimensions for the product

Length [ l ]	8.6 mm
Width [ w ]	71.12 mm
Height [ h ]	15.9 mm
Pitch	5.08 mm
Height (without solder pin)	12 mm
Solder pin [P]	3.9 mm
Pin dimensions	1 x 1 mm

### Dimensions for PCB design

Hole diameter	1.4 mm
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### Packaging information

Type of packaging	packed in cardboard
Pieces per package	50

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## Technical data

### Packaging information

Denomination packing units	Pcs.
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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)

### 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)	4 mm
Minimum creepage distance value (III/2)	3.2 mm
Minimum creepage distance value (II/2)	4 mm

### 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>	2.5 mΩ
Insertion/withdrawal cycles	25
Contact resistance R <sub>2</sub>	2.6 mΩ
Impulse withstand voltage at sea level	4.8 kV
Power-frequency withstand voltage	2.21 kV
Insulation resistance, neighboring positions	> 3 TΩ

### Thermal tests (C)

Specification	IEC 60512-5-1:2002-02
Number of positions	20
Conductor cross section	2.5 mm <sup>2</sup>
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

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## Technical data

### Climatic tests (D)

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

### Standards and Regulations

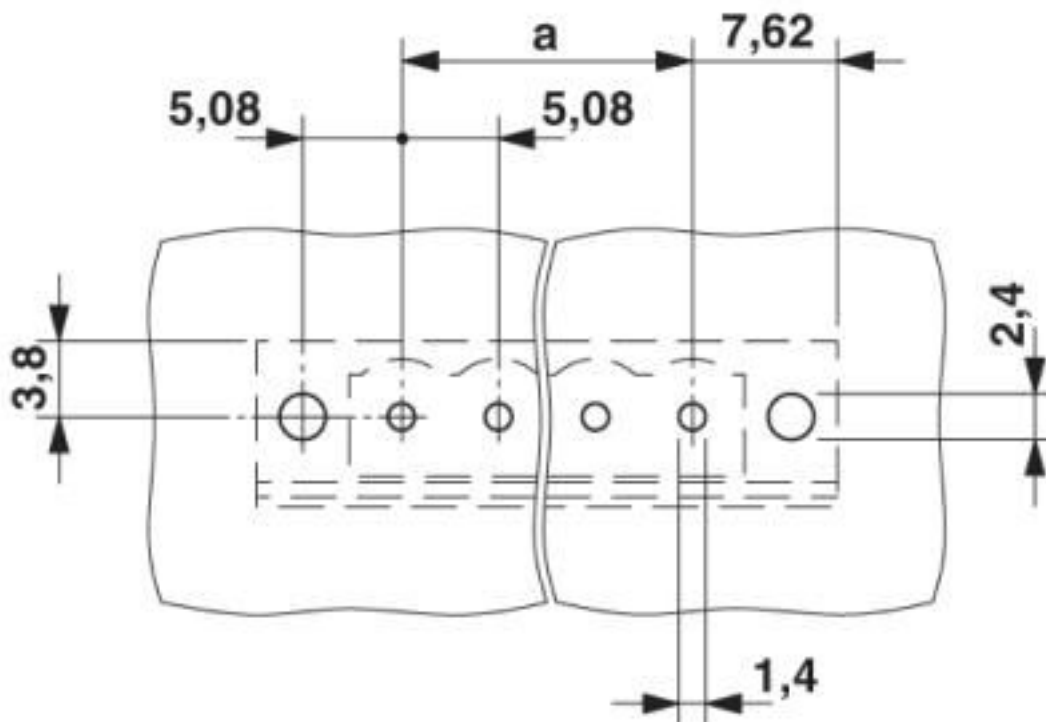
Connection in acc. with standard	EN-VDE
	CSA
Flammability rating according to UL 94	V0

### 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"

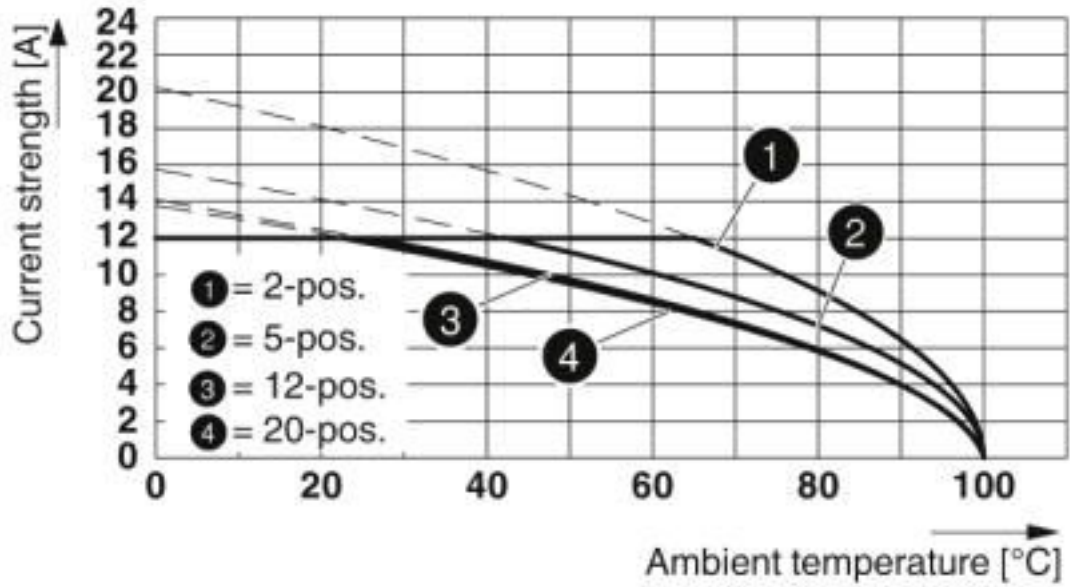
## Drawings

Drilling diagram



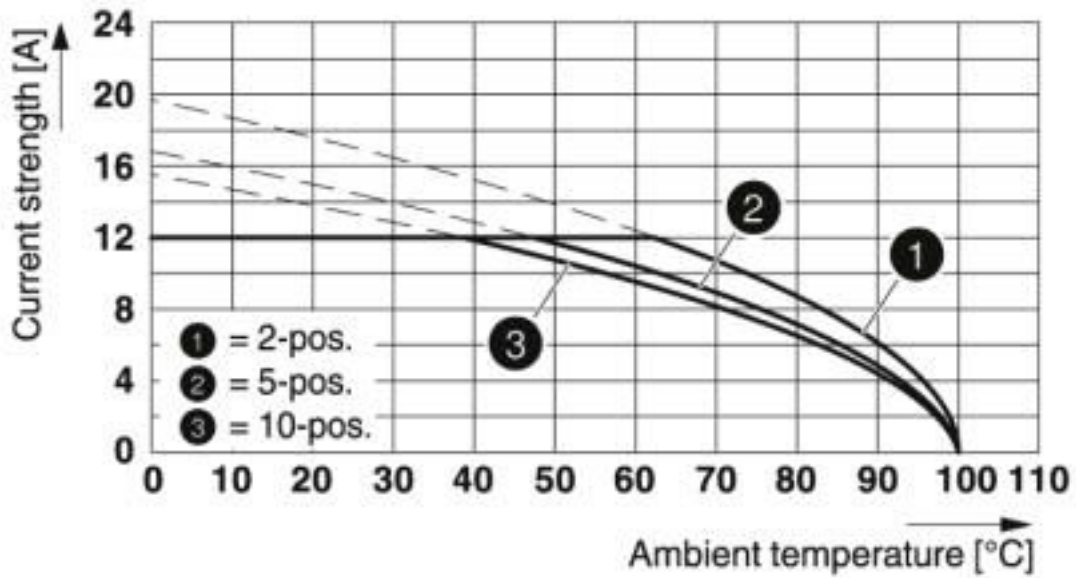
# Printed-circuit board connector - MSTBV 2,5/12-GF-5,08 - 1777170

Diagram



Type: MSTB 2,5/...-STF-5,08 with MSTBV 2,5/...-GF-5,08

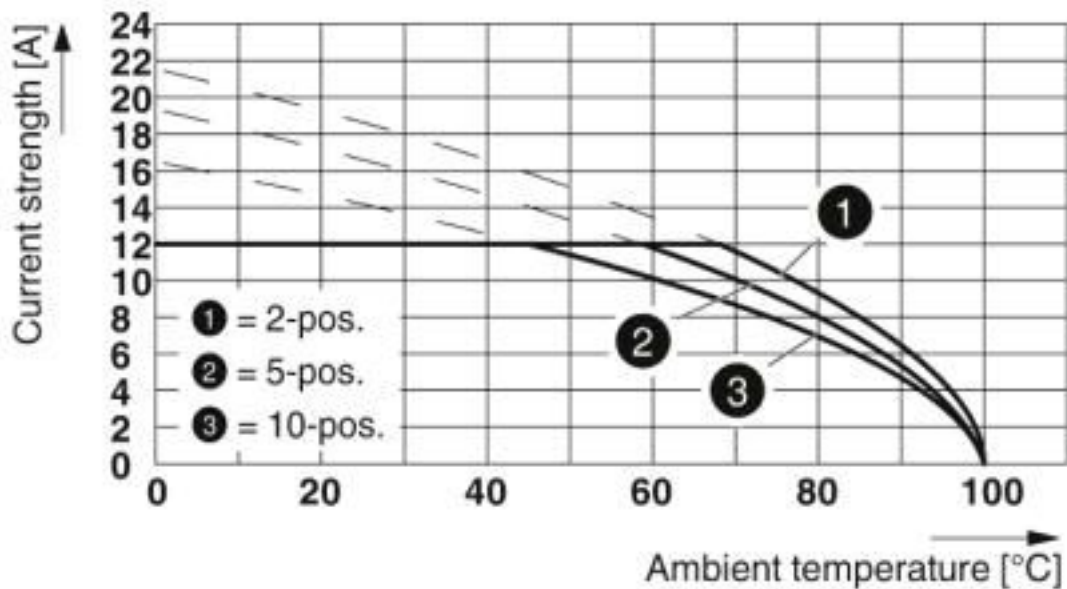
Diagram



Type: TVMSTB 2,5/...-STF-5,08 with MSTBV 2,5/...-GF-5,08

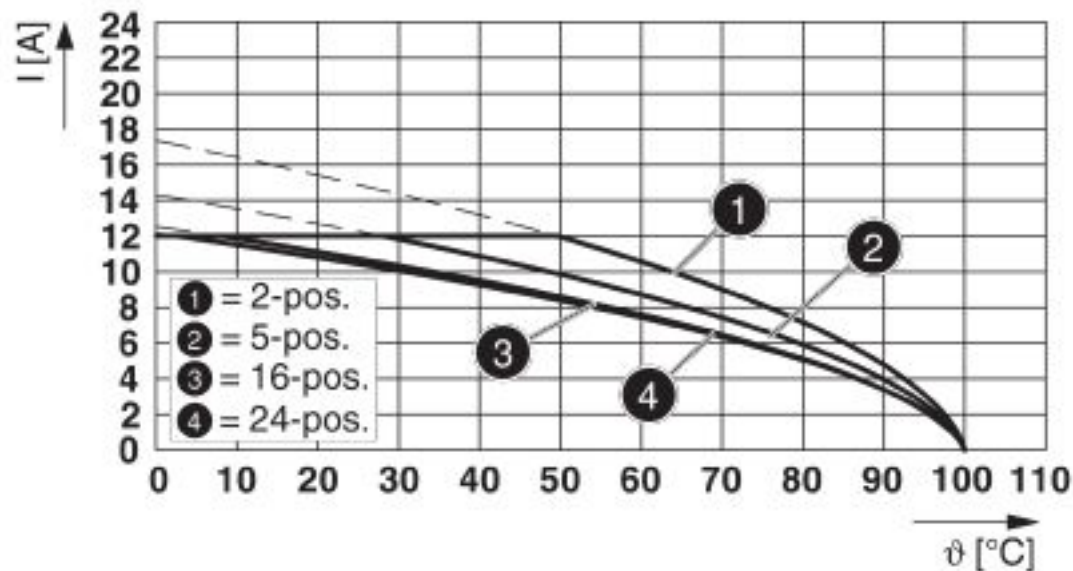
# Printed-circuit board connector - MSTBV 2,5/12-GF-5,08 - 1777170

Diagram



Type: TFKC 2,5/...-STF-5,08 with MSTBV 2,5/...-GF-5,08

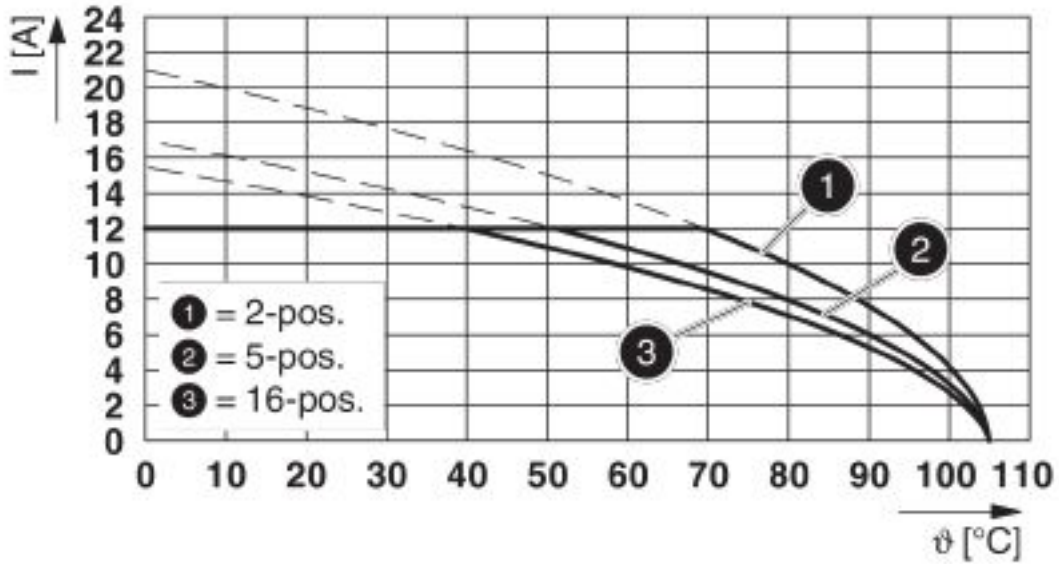
Diagram



Type: SMSTB 2,5/...-STF-5,08 with MSTBV 2,5/...-GF-5,08

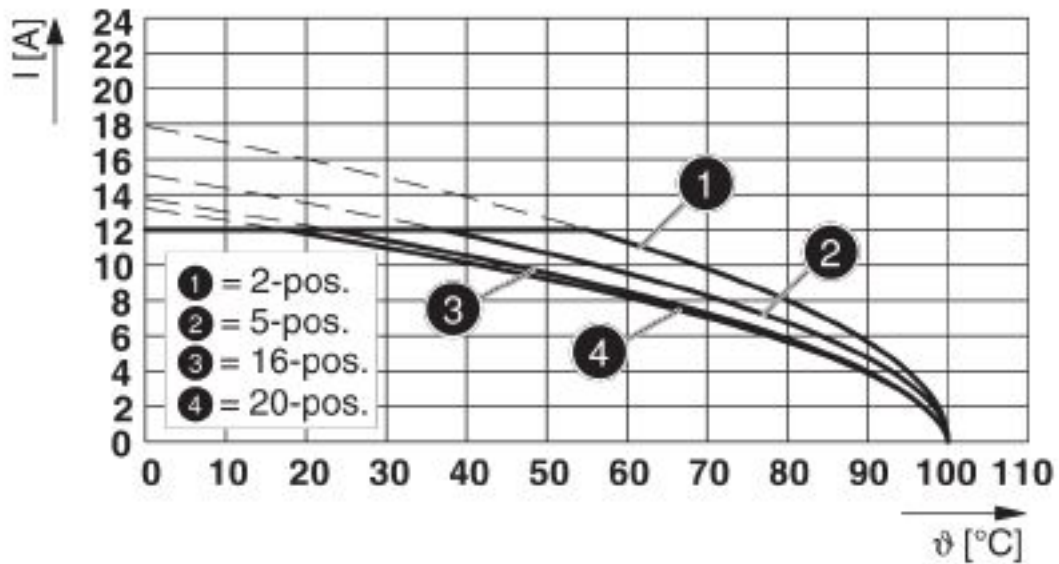
# Printed-circuit board connector - MSTBV 2,5/12-GF-5,08 - 1777170

Diagram



Type: FKCVR 2,5/...-STF-5,08 with MSTBV 2,5/...-GF-5,08

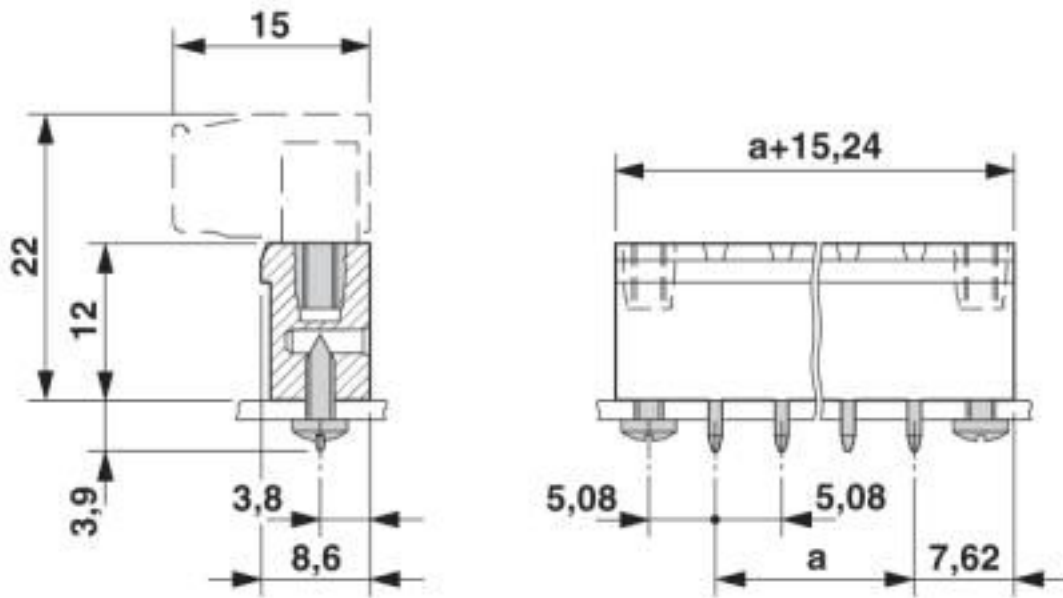
Diagram



Type: FRONT-MSTB 2,5/...-STF-5,08 with MSTBV 2,5/...-GF-5,08

# Printed-circuit board connector - MSTBV 2,5/12-GF-5,08 - 1777170

Dimensional drawing



## Classifications

eCl@ss

eCl@ss 10.0.1	27440402
eCl@ss 4.0	27260700
eCl@ss 4.1	27260700
eCl@ss 5.0	27260700
eCl@ss 5.1	27260700
eCl@ss 6.0	27260700
eCl@ss 7.0	27440402
eCl@ss 8.0	27440402
eCl@ss 9.0	27440402

ETIM

ETIM 3.0	EC001121
ETIM 4.0	EC002637
ETIM 5.0	EC002637
ETIM 6.0	EC002637
ETIM 7.0	EC002637

UNSPSC

UNSPSC 6.01	30211810
UNSPSC 7.0901	39121409
UNSPSC 11	39121409
UNSPSC 12.01	39121409
UNSPSC 13.2	39121409



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## Classifications

### UNSPSC

UNSPSC 18.0	39121409
UNSPSC 19.0	39121409
UNSPSC 20.0	39121409
UNSPSC 21.0	39121409

## Approvals

### Approvals

#### Approvals

DNV GL / CSA / RS / IECEE CB Scheme / EAC / cULus Recognized / VDE Zeichengenehmigung


#### Ex Approvals

### Approval details

DNV GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	TAE00001EY
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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		12 A	10 A

RS		<a href="http://www.rs-head.spb.ru/en/index.php">http://www.rs-head.spb.ru/en/index.php</a>	17.00014.272
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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	

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## Approvals

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	12 A	10 A	

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>	40050648
Nominal voltage UN	250 V		
Nominal current IN	12 A		

## Accessories

### Accessories

#### Coding element

Coding section - CR-MSTB - 1734401

Coding section, inserted into the recess in the header or the inverted plug, red insulating material



#### Filler plug

Accessories - MSTB-BL - 1755477



Keying cap, for forming sections, plugs onto header pin, green insulating material

#### Labeled terminal marker

## Printed-circuit board connector - MSTBV 2,5/12-GF-5,08 - 1777170

### Accessories

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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### Additional products

Printed-circuit board connector - FKCN 2,5/12-STF-5,08 - 1754898



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

Printed-circuit board connector - FRONT-MSTB 2,5/12-STF-5,08 - 1777895



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

Printed-circuit board connector - MSTB 2,5/12-STF-5,08 - 1778085



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

Printed-circuit board connector - MSTBT 2,5/12-STF-5,08 - 1805398



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

## Printed-circuit board connector - MSTBV 2,5/12-GF-5,08 - 1777170

### Accessories

#### Printed-circuit board connector - MSTBC 2,5/12-STZF-5,08 - 1809831

PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 12, pitch: 5.08 mm, connection method: Crimp connection, color: green, Corresponding female crimp contacts with current [A] and conductor cross section range [mm<sup>2</sup>] data: 10A/MSTBC-MT 0,5-1,0 (3190564); 10A/MSTBC-MT 0,5-1,0 BA (3190645); 12A/MSTBC-MT 1,5-2,5 (3190551); 12A/MSTBC-MT 1,5-2,5 BA (3190658). BA = Bandkontakte



#### Printed-circuit board connector - MVSTBW 2,5/12-STF-5,08 - 1835009

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



#### Printed-circuit board connector - MVSTBR 2,5/12-STF-5,08 - 1835193

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



#### Printed-circuit board connector - FKC 2,5/12-STF-5,08 - 1873304

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



#### Printed-circuit board connector - FKCVW 2,5/12-STF-5,08 - 1873906

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



## Printed-circuit board connector - MSTBV 2,5/12-GF-5,08 - 1777170

### Accessories

#### Printed-circuit board connector - FKCVR 2,5/12-STF-5,08 - 1874206



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

#### Printed-circuit board connector - QC 1/12-STF-5,08 - 1883459



PCB connector, nominal current: 10 A, rated voltage (III/2): 630 V, nominal cross section: 1 mm<sup>2</sup>, number of positions: 12, pitch: 5.08 mm, connection method: Displacement connection, color: green, contact surface: Tin

#### Printed-circuit board connector - FKCT 2,5/12-STF-5,08 - 1902408



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

#### Printed-circuit board connector - SMSTB 2,5/12-STF-5,08 - 1971167



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

#### Printed-circuit board connector - FKCS 2,5/12-STF-5,08 - 1975367



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

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