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PCB headers, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Male connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: MSTBO 2,5/..-G1R, pitch: 5 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.5 mm, Locking: without, type of packaging: packed in cardboard, Product with pin output on right side

## Your advantages

- Headers for ME/ME MAX electronics housing
- 5 mm pitch
- 2 to 4-pos.
- Plug-in direction orthogonal to the PCB



## Key Commercial Data

Packing unit	1 pc
Minimum order quantity	200 pc
GTIN	4 017918 155650
GTIN	4017918155650
Weight per Piece (excluding packing)	2.700 g
Custom tariff number	85366930
Country of origin	Germany

# Technical data

## Item properties

Brief article description	Feed-through header
Type of contact	Male connector
Range of articles	MSTBO 2,5/ -G1R
Pitch	5 mm



# Technical data

## Item properties

Number of positions	4
Mounting type	Wave soldering
Pin layout	Linear pinning
Locking	without
Number of levels	1
Number of connections	4
Number of potentials	4

## **Electrical parameters**

Nominal current I <sub>N</sub>	12 A
Nom. voltage	250 V
Rated voltage (III/3)	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	hot-dip tin-plated

## 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
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 [1]	14.65 mm
Width [ w ]	18 mm
Height [ h ]	19.95 mm
Pitch	5 mm
Solder pin [P]	3.5 mm



# Feed-through header - MSTBO 2,5/ 4-G1R - 1861073

# Technical data

## Dimensions for the product

Pin dimensions	1 x 1 mm	
Dimensions for PCB design		
Hole diameter	1.4 mm	
Packaging information		
Type of packaging	packed in cardboard	
Pieces per package	200	
Denomination packing units	Pcs.	
Outer packaging type	Carton	
Ambient conditions		
Ambient temperature (storage/transport)	-40 °C 55 °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	
Conductor cross section / conductor type / tensile force	0.2 mm² / solid / > 10 N	
	0.2 mm² / flexible / > 10 N	
	2.5 mm² / solid / > 50 N	
	2.5 mm² / 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	
Insertion strength per pos. approx.	13 N	
Withdraw strength per pos. approx.	7 N	
Polarization and coding	IEC 60512-13-5:2006-02	
Contact holder in insert	IEC 60512-15-1:2008-05	

20 N

Air clearances and creepage distances

Test force per pos.



# Technical data

# Current carrying capacity / derating curves

ounch carrying capacity / derating curves	
Caption	Type: MSTBT 2,5/ST with MSTBO 2,5/G1L
Mechanical tests (A)	
Test specification	IEC 61984
Insertion strength per pos. approx.	13 N
Withdraw strength per pos. approx.	7 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>	1.5 mΩ
Insertion/withdrawal cycles	25
Contact resistance R <sub>2</sub>	1.5 mΩ
Impulse withstand voltage at sea level	4.8 kV
Thermal tests (C)	
Specification	IEC 60512-5-1:2002-02
Number of positions	4
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	No contact safety (IP00) in acc. with IEC 60529:1989-11 + AMD 1:1999-11 + AMD 2:2013-08
Standards and Regulations	
Connection in acc. with standard	EN-VDE
	CSA
Environmental Product Compliance	
China RoHS	Environmentally friendly use period: unlimited = EFUP-e



# Drawings

# Diagram

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

# Classifications

eCl@ss

eCl@ss 10.0.1	27440402
eCl@ss 11.0	27460201
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 2.0	EC001031
ETIM 3.0	EC001031
ETIM 4.0	EC002637
ETIM 5.0	EC002637
ETIM 6.0	EC002637
ETIM 7.0	EC002637

# UNSPSC

UNSPSC 6.01	31261501
UNSPSC 7.0901	31261501
UNSPSC 11	31261501
UNSPSC 12.01	31261501
UNSPSC 13.2	39121409



# Classifications

## UNSPSC

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

# Approvals

Approvals

## Approvals

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

Ex Approvals

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## Approval details

CSA SP	http://www.csagroup.org/services-indus	tries/product-listing/ 13631
	В	D
Nominal voltage UN	300 V	300 V
Nominal current IN	10 A	10 A

IECEE CB Scheme	<b>CB</b> scheme	http://www.iecee.org/	DE1-60988-B1B2
Nominal voltage UN		250 V	
Nominal current IN		8 A	

EAC	EAC	B.01687
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# Feed-through header - MSTBO 2,5/ 4-G1R - 1861073

# Approvals

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cULus Recognized	http://database.ul.com/cgi-bin/XYV/template/L	ISEXT/1FRAME/index.htm E60425-20050718
	В	D
Nominal voltage UN	300 V	300 V
Nominal current IN	16 A	10 A

VDE Zeichengenehmigung	http://www2.vde.com/de/Institut/Online-Service/ VDE-gepruefteProdukte/Seiten/Online-Suche.aspx		40050648
Nominal voltage UN		250 V	
Nominal current IN		8 A	

## Accessories

Accessories

Coding element

Coding section - CR MSTBO-G1 - 2199618



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

## Flange

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## Accessories

Accessories - MSTB-BF - 1759981



Mounting flange, for fixing both ends of the header onto the PCB, green insulating material, with M 2 x 14 screws and nuts.

## Necessary add-on products

Printed-circuit board connector - MSTBT 2,5/ 4-ST - 1779851



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: MSTBT 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, conductor/PCB connection direction: 0 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard

#### Printed-circuit board connector - MSTBT 2,5 HC/ 4-ST - 1926251



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 16 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: MSTBT 2,5 HC/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, conductor/PCB connection direction: 0 °, Stecksystem: POWER COMBICON 2,5, Locking: without, type of packaging: packed in cardboard, The T-shape of the MSTBT plug distributes the height uniformly over the upper and lower sides of the printed circuit board

## Additional products

Printed-circuit board connector - TVFKC 1,5/ 4-ST - 1713855



PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 10 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 8, product range: TVFKC 1,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard



## Accessories

## Printed-circuit board connector - TVFKCL 1,5/ 4-ST - 1715947



PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 10 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 8, product range: TVFKCL 1,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard

## Plug - QC 1,5/ 4-ST - 1717987



PCB connector, nominal cross section: 1.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 630 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: QC 1,5/..-ST, pitch: 5 mm, connection method: Displacement connection, conductor/PCB connection direction: 0 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard

#### Printed-circuit board connector - FKCN 2,5/ 4-ST - 1732768



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: FKCN 2,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard

#### Printed-circuit board connector - MSTB 2,5/ 4-ST - 1754481



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: MSTB 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, conductor/PCB connection direction: 0 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard

#### Printed-circuit board connector - MSTBP 2,5/ 4-ST - 1765797



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: MSTBP 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, conductor/PCB connection direction: 0 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard



## Accessories

## Printed-circuit board connector - SMSTB 2,5/ 4-ST - 1768781



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: SMSTB 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, conductor/PCB connection direction: -45 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard

## Printed-circuit board connector - FRONT-MSTB 2,5/ 4-ST - 1779437



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: FRONT-MSTB 2,5/.-ST, pitch: 5 mm, connection method: Front screw connection, conductor/PCB connection direction: 0 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard

#### Printed-circuit board connector - MSTBT 2,5/ 4-ST - 1779851



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: MSTBT 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, conductor/PCB connection direction: 0 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard

#### Printed-circuit board connector - MVSTBW 2,5/ 4-STEH - 1784299



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: MVSTBW 2,5/..-STEH, pitch: 5 mm, connection method: Screw connection with tension sleeve, conductor/PCB connection direction: -90 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard

#### Printed-circuit board connector - MVSTBR 2,5/ 4-ST - 1792032



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: MVSTBR 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, conductor/PCB connection direction: 90 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard



## Accessories

## Printed-circuit board connector - MVSTBW 2,5/ 4-ST - 1792540



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: MVSTBW 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, conductor/PCB connection direction: -90 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard

## Printed-circuit board connector - FKCT 2,5/ 4-ST - 1909236



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: FKCT 2,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard

#### Printed-circuit board connector - FKCVR 2,5/ 4-ST - 1909731



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: FKCVR 2,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 90 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard

#### Printed-circuit board connector - FKCVW 2,5/ 4-ST - 1910050



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: FKCVW 2,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: -90 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard

#### Printed-circuit board connector - FKC 2,5/ 4-ST - 1910377



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: FKC 2,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard



## Accessories

## Printed-circuit board connector - QC 1/ 4-ST-BUS - 1921696



PCB connector, nominal cross section: 1 mm<sup>2</sup>, color: green, nominal current: 10 A, rated voltage (III/2): 630 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: QC 1/..-ST-BUS, pitch: 5 mm, connection method: Displacement connection, conductor/PCB connection direction: 90 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard, The plug allows conductors to be looped through from module to module, without interruption

#### Printed-circuit board connector - FKCS 2,5/ 4-ST - 1974753



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, Number of potentials: 4, Number of rows: 1, Number of positions per row: 4, number of connections: 4, product range: FKCS 2,5/..-ST, pitch: 5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, Stecksystem: CLASSIC COMBICON, Locking: without, type of packaging: packed in cardboard

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