

# Printed-circuit board connector - GMSTB 2,5/10-ST - 1766961

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PCB connector, nominal current: 12 A, rated voltage (III/2): 630 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 10, pitch: 7.5 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

- Plug-in direction parallel to the conductor axis
- Plugs for 630 V applications (III/2)
- FRONT-GMSTB 2,5 plug with front screw connection
- Well-known connection principle allows worldwide use
- Low temperature rise, thanks to maximum contact force
- Larger pitch for increased voltage requirements



## Key Commercial Data

Packing unit	50 pc
GTIN	 4 017918 032982
GTIN	4017918032982

## Technical data

### Item properties

Brief article description	Printed-circuit board connector
Plug-in system	CLASSIC COMBICON
Type of contact	Female connector
Range of articles	GMSTB 2,5/...-ST
Pitch	7.5 mm
Number of positions	10
Connection method	Screw connection with tension sleeve
Drive form screw head	Slotted (L)
Screw thread	M3

# Printed-circuit board connector - GMSTB 2,5/10-ST - 1766961

## Technical data

### Item properties

Locking	without
Number of levels	1
Number of connections	10
Number of potentials	10

### Electrical parameters

Nominal current	12 A
Nom. voltage	630 V
Rated voltage	400 V
Rated voltage (III/2)	630 V
Rated voltage (II/2)	1000 V
Rated surge voltage (III/3)	6 kV
Rated surge voltage (III/2)	6 kV
Rated surge voltage (II/2)	6 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 mm <sup>2</sup>
Cylindrical gauge a x b / diameter	2.8 mm x 2.4 mm / 2.5 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

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## Technical data

### Material data - housing

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 [ l ]	18.2 mm
Width [ w ]	73 mm
Height [ h ]	15 mm
Pitch	7.5 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	0.14 mm <sup>2</sup> / solid / > 10 N
	0.14 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

# Printed-circuit board connector - GMSTB 2,5/10-ST - 1766961

## Technical data

### Mechanical tests according to standard

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.	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.	34 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)	5.5 mm
Minimum clearance - inhomogeneous field (III/2)	5.5 mm
Minimum clearance - inhomogeneous field (II/2)	5.5 mm
Minimum creepage distance value (III/3)	5 mm
Minimum creepage distance value (III/2)	3.2 mm
Minimum creepage distance value (II/2)	5 mm
Note on connection cross section	With connected conductor 2.5 mm <sup>2</sup> (stranded).

### Current carrying capacity / derating curves

Caption	Type: GMSTB 2,5/...-ST with GMSTB 2,5/...-G
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>	1.4 mΩ
Insertion/withdrawal cycles	25
Contact resistance R <sub>2</sub>	1.4 mΩ
Impulse withstand voltage at sea level	4.8 kV
Power-frequency withstand voltage	2.21 kV
Insulation resistance, neighboring positions	> 0.2 TΩ

# Printed-circuit board connector - GMSTB 2,5/10-ST - 1766961

## Technical data

### Thermal tests (C)

Specification	IEC 60512-5-1:2002-02
Number of positions	12
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
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

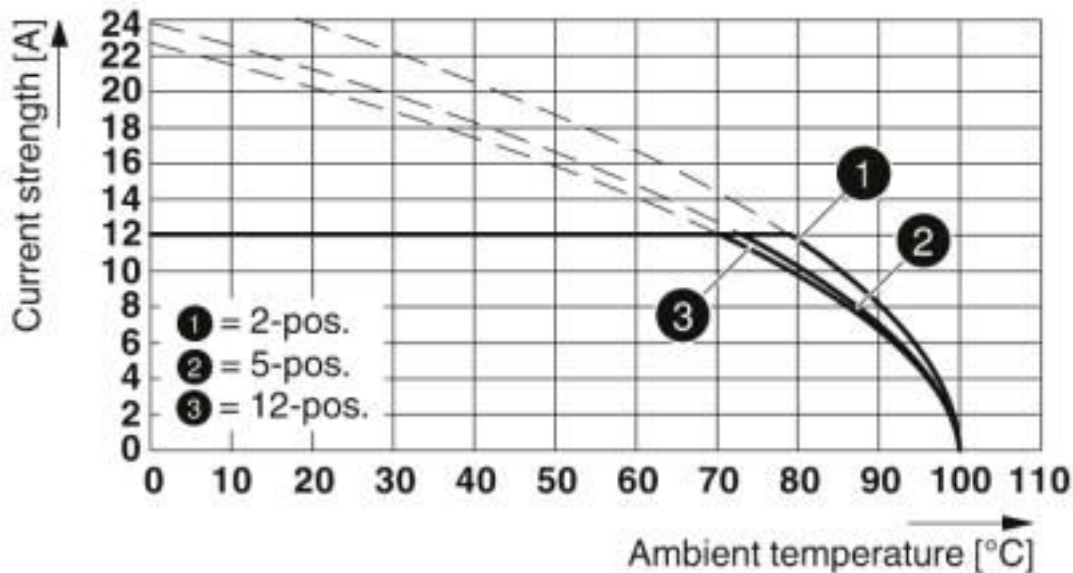
### Environmental Product Compliance

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

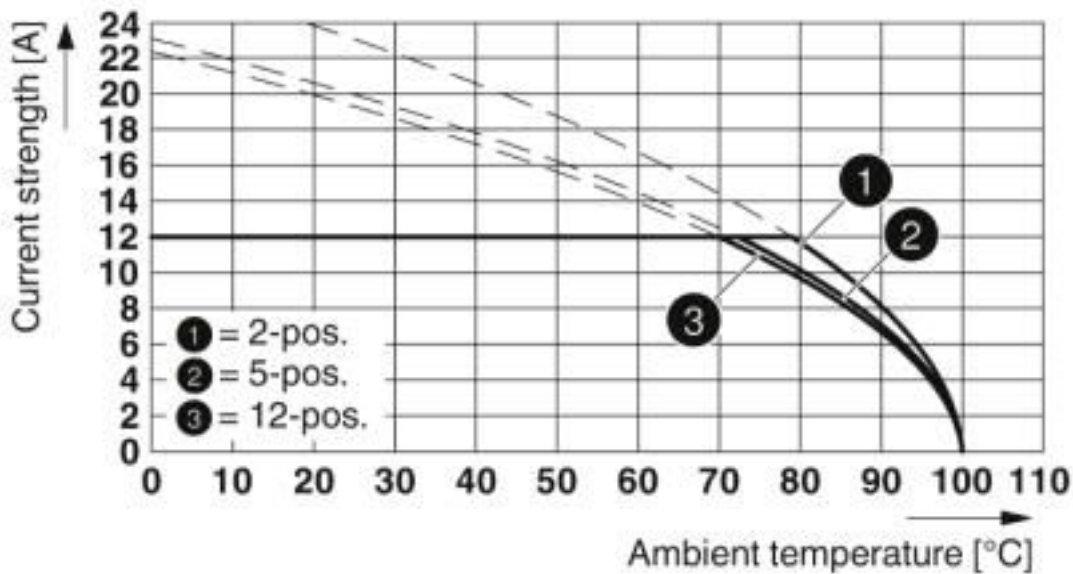
# Printed-circuit board connector - GMSTB 2,5/10-ST - 1766961

Diagram



Type: GMSTB 2,5/...-ST with GMSTB 2,5/...-G

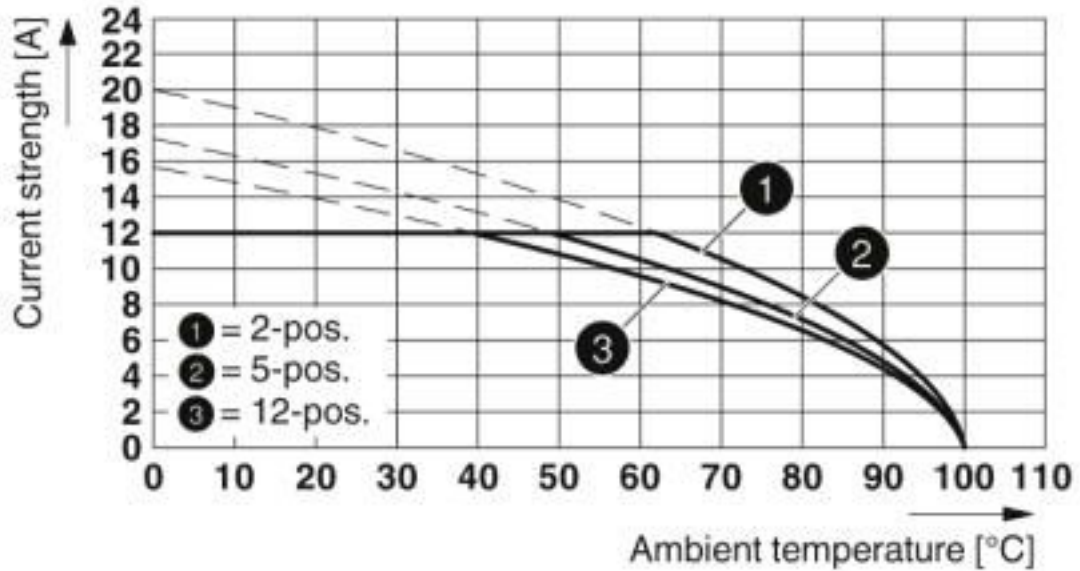
Diagram



Type: GMSTB 2,5/...-ST with GMSTBA 2,5/...-G

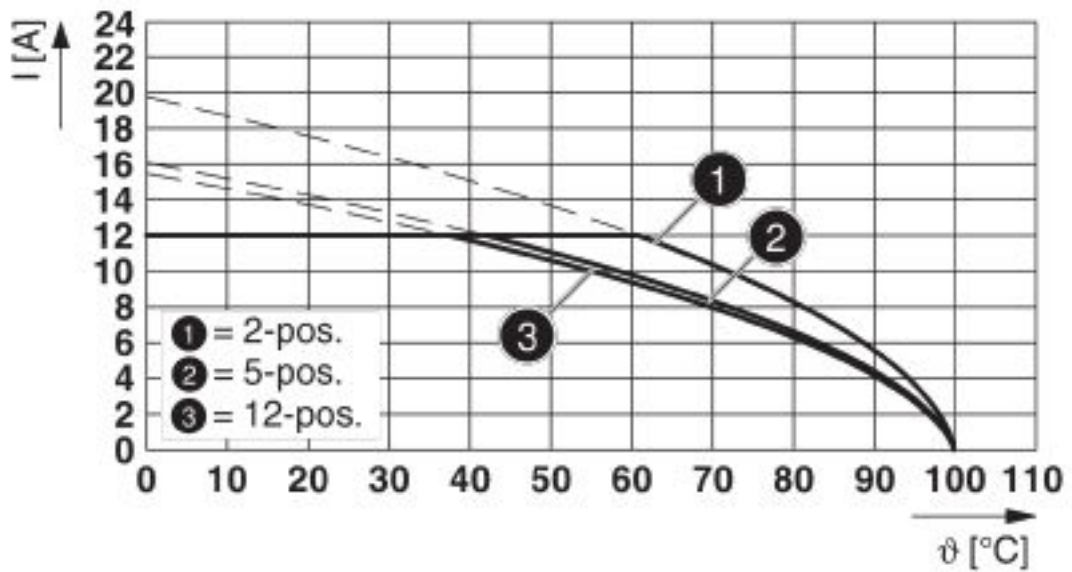
# Printed-circuit board connector - GMSTB 2,5/10-ST - 1766961

Diagram



Type: GMSTB 2,5/...-ST with GMSTBV 2,5/...-G

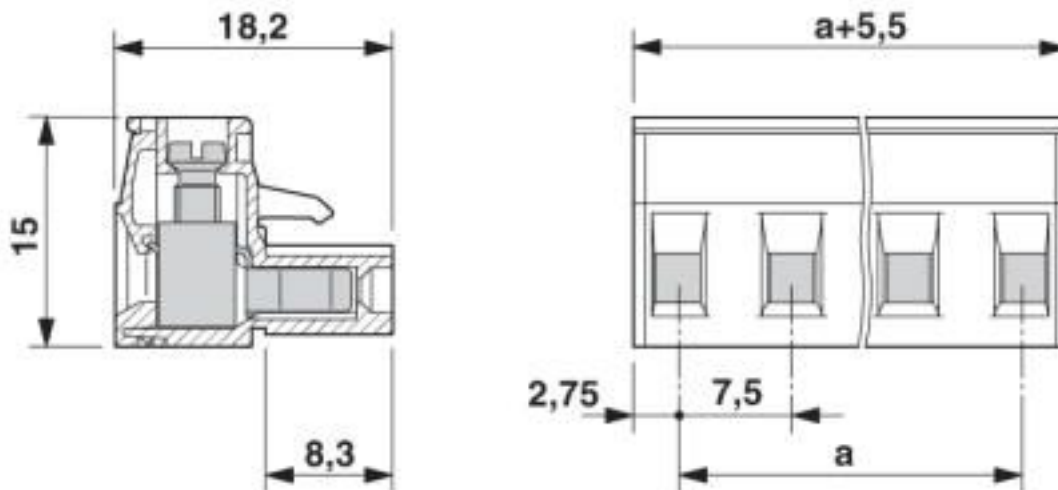
Diagram



Type: GMSTB 2,5/...-ST with GMSTBVA 2,5/...-G

# Printed-circuit board connector - GMSTB 2,5/10-ST - 1766961

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
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



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## Classifications

### UNSPSC

UNSPSC 21.0	39121409
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## 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>	LR13631-2585950
	B	D	
Nominal voltage UN	300 V	300 V	
Nominal current IN	10 A	10 A	
mm <sup>2</sup> /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	400 V		
Nominal current IN	12 A		
mm <sup>2</sup> /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>	E60425-19931013
	B	D	
Nominal voltage UN	300 V	300 V	
Nominal current IN	15 A	10 A	
mm <sup>2</sup> /AWG/kcmil	30-12	30-12	

# Printed-circuit board connector - GMSTB 2,5/10-ST - 1766961

## Approvals

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>	40050646
Nominal voltage UN		400 V	
Nominal current IN		12 A	
mm <sup>2</sup> /AWG/kcmil		0.2-2.5	

## Accessories

### Accessories

#### Cable housing

Cable housing - KGS-MSTB 2,5/15 - 1783847



Cable housing, pitch: 0 mm, number of positions: 15, dimension a: 75 mm, color: green

#### Coding element

Coding profile - CP-MSTB - 1734634



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

#### Insertion bridge

Insertion bridge - EB 2-CC 7,5 - 1948048



Insertion bridge, pitch: 7.5 mm, length: 16.5 mm, width: 11.7 mm, number of positions: 2, color: gray

#### Labeled terminal marker

## Printed-circuit board connector - GMSTB 2,5/10-ST - 1766961

### Accessories

Marker card - SK 7,5/3,8:FORTL.ZAHLEN - 0804455

Marker card, Card, white, labeled, horizontal: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... 100, mounting type: adhesive, for terminal block width: 7.5 mm, lettering field size: 7.5 x 3.8 mm



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### Marker pen

Marker pen - B-STIFT - 1051993

Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 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 - GMSTB 2,5/10-G - 1766097

PCB headers, nominal current: 12 A, rated voltage (III/2): 630 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 10, pitch: 7.5 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.5 mm



Feed-through header - GMSTBA 2,5/10-G - 1766424

PCB headers, nominal current: 12 A, rated voltage (III/2): 630 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 10, pitch: 7.5 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.5 mm



## Printed-circuit board connector - GMSTB 2,5/10-ST - 1766961

### Accessories

#### Feed-through header - GMSTBV 2,5/10-G - 1766534

PCB headers, nominal current: 12 A, rated voltage (III/2): 630 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 10, pitch: 7.5 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 - GMSTBVA 2,5/10-G - 1766741

PCB headers, nominal current: 12 A, rated voltage (III/2): 630 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 10, pitch: 7.5 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.9 mm



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[PVP02-5,00](#) [PVP03-3,50](#) [PVP04-3,50](#) [PVS02-5,00](#) [1-1986160-3](#) [1377680000](#) [1531000000](#) [1546228-5](#) [ELFH16150](#) [ELFP03110](#)  
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