

Data sheet

Order No.: 1786433

Type: IC 2,5/ 5-G-5,08

PCB header



The figure shows a 10-position version of the product

1 Main features



- | | | | |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos. | 5 | • Nominal current | 12 A |
| • Nominal cross section | 2.5 mm ² | • Nominal voltage | 320 V |
| • Color | green (6021) | • Connection direction | 0 ° |
| • Pitch | 5.08 mm | • Type of packaging | packed in cardboard |
| • Mounting type | Wave soldering | | |

2 Your advantages

- ✓ Maximum flexibility when it comes to device design – one header for connectors with different connection technologies
- ✓ Easy PCB replacement thanks to plug-in modules
- ✓ Well-known mounting principle allows worldwide use
- ✓ Inverted header with socket contacts for touch-proof device outputs or PCB/PCB connections



Make sure you always use the latest documentation.

It can be downloaded at: phoenixcontact.net/product/1786433

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1786433 IC 2,5/ 5-G-5,08

4 3D model in PDF can be activated (Acrobat Reader only)



1786433 IC 2,5/ 5-G-5,08**5 General Technical Data****5.1 item properties**

Order No.	1786433
Type	IC 2,5/ 5-G-5,08
Plug-in system	CLASSIC COMBICON
Product type	PCB header
Type of contact	Female connector
Range of articles	IC 2,5/...-G
Pitch	5.08 mm
Number of positions	5
Number of levels	1
Number of connections	5
Number of potentials	5
Mounting type	Wave soldering
Connection direction of the connector to the PCB	0 °
Pin layout	Linear pinning
Solder pins per potential	2
Type	Inverted

1786433 IC 2,5/ 5-G-5,08**6 Mounting****6.1 Flange mounting**

Type of locking	without
Mounting flange	without

7 Material properties**7.1 Material of metal parts**

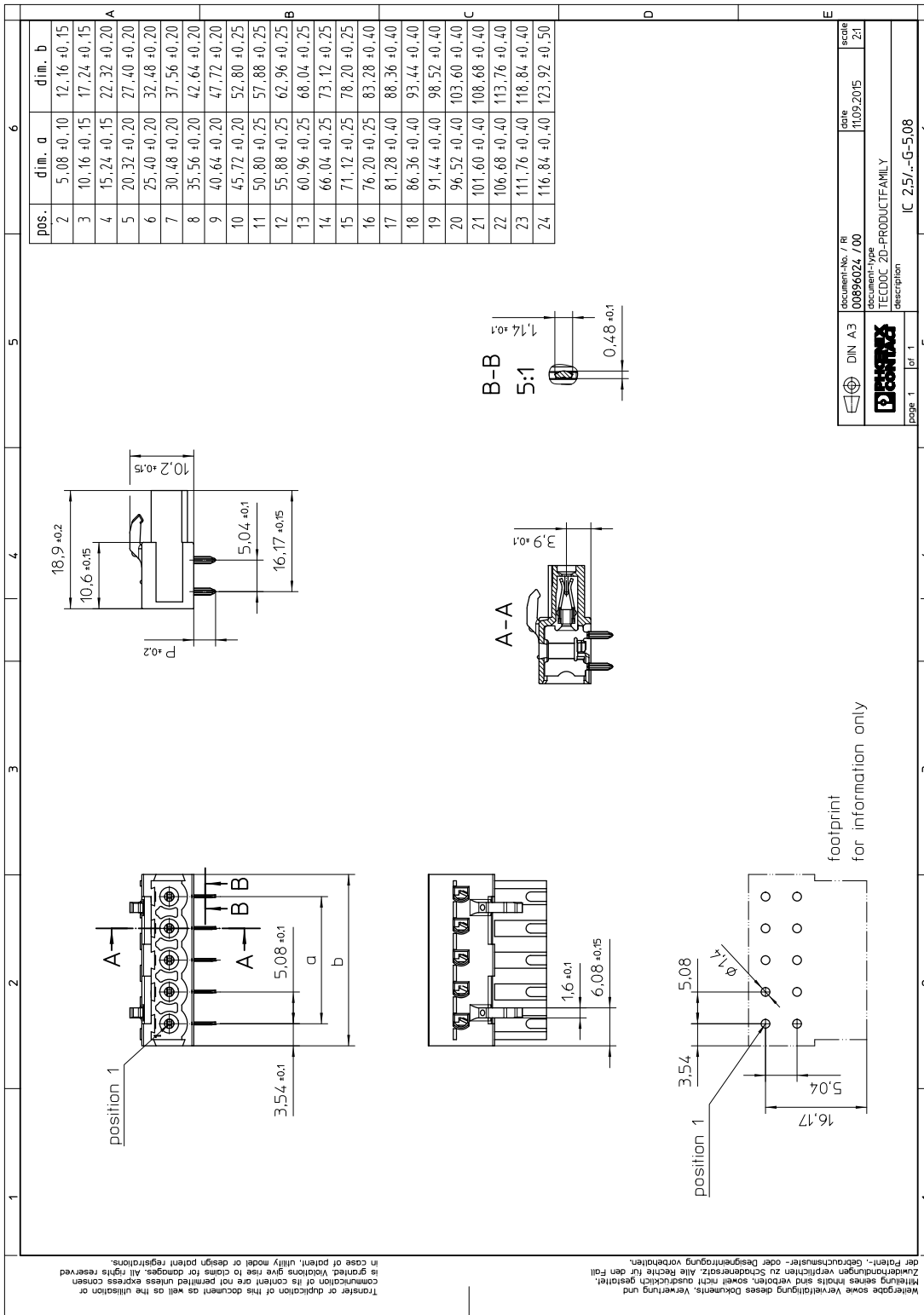
Note	WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Surface contact area	Tin (4 - 8 µm Sn)
Soldering area surface	Tin (4 - 8 µm Sn)
Surface characteristics	Tin-plated
Insulating material data	Housing
Color	green (6021)
Insulating material	PA
Insulating 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

1786433 IC 2,5/ 5-G-5,08**8 Dimensions****8.1 Dimensions for the product**

Length	18.9 mm
Width	27.4 mm
Height (without solder pin)	10.2 mm
Total height	13.7 mm
Solder pin [P]	3.5 mm

1786433 IC 2,5/ 5-G-5,08

9 Series drawing



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Phoenix Contact	document-type TECDOC 2D-PRODUCTFAMILY		
page 1 of 1	description IC 2,5/ 5-G-5,08		6

1786433 IC 2,5/ 5-G-5,08**10 Product notes****10.1 General information**

Notes on operation

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.

11 Application**12 Packaging information**

Type of packaging	packed in cardboard
Pieces per package	50
Outer packaging type	Carton

12.1 Temperature limit values

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)

1786433 IC 2,5/ 5-G-5,08**13 Mechanical tests****13.1 Visual examination**

Specification	IEC 61984:2008-10
Visual examination	Test passed
Specification	IEC 60512-1-1:2002-02

13.2 Dimensional test

Dimensional test	Test passed
Specification	IEC 60512-1-2:2002-02

13.3 Resistance of marking

Resistance of marking	Test passed
Specification	IEC 60068-2-70:1995-12

13.4 Polarization and coding

Polarization and coding	Test passed
Specification	IEC 60512-13-5:2006-02
Test force	20 N

13.5 Contact retention in insert

Contact holder in insert Requirements >20 N	Test passed
Specification	IEC 60512-15-1:2008-05

1786433 IC 2,5/ 5-G-5,08**14 Insertion and withdrawal forces**

Insertion and withdrawal force	Test passed
Specification	IEC 60512-13-2:2006-02
No. of cycles	25
Insertion strength per pos. approx.	8 N
Withdraw strength per pos. approx.	6 N

1786433 IC 2,5/ 5-G-5,08**15 Electrical tests**

Rated current / conductor cross section	12 A / 2.5 mm ²
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Contact resistance	1.2 mΩ
Degree of pollution	2

15.1 Air and creepage distances

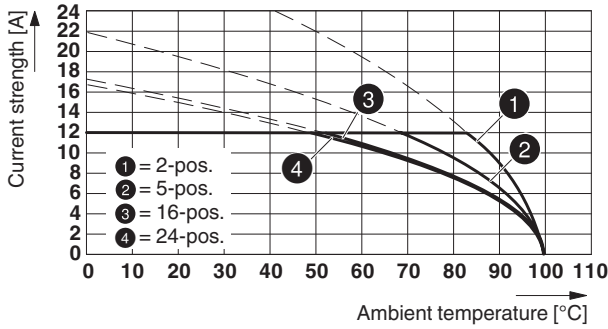
Component	PCB header		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	320 V	320 V	630 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category	III	III	II
Minimum clearance case A (inhomogeneous field)	3 mm	3 mm	3 mm
Minimum value of the creepage path requirement in acc. with table	4 mm	3 mm	3.2 mm

1786433 IC 2,5/ 5-G-5,08

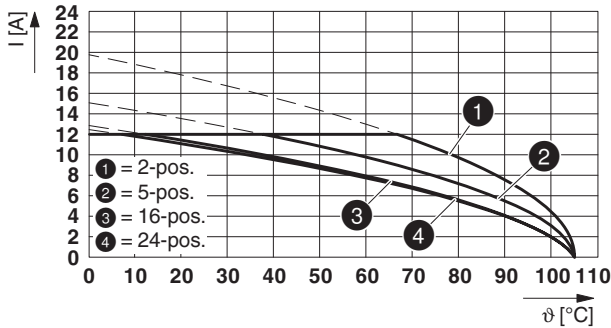
16 Current carrying capacity/derating curves

Specification	IEC 61984:2008-10
Note	Representation based on IEC 60512-5-2:2002-02
Note	For number of positions, see diagram
Reduction factor	0.8
Conductor cross section	2.5 mm ²

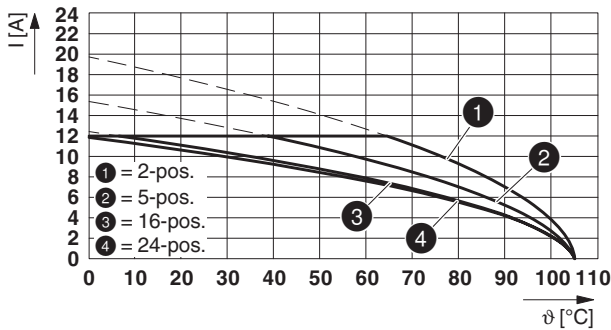
Type: IC 2,5/...-G-5,08 with MSTBA 2,5/...-G-5,08



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

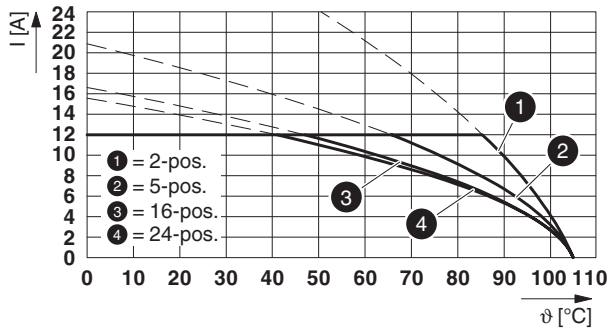


Type: IC 2,5/...-G-5,08 with MSTBVA 2,5/...-G-5,08

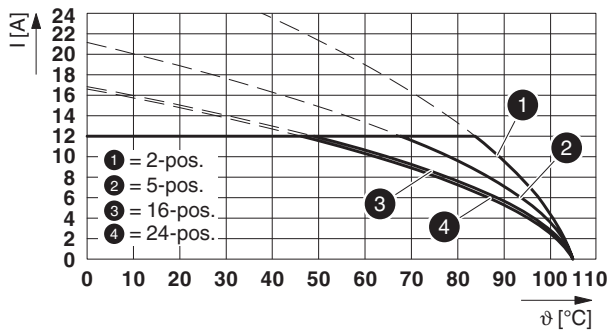


1786433 IC 2,5/ 5-G-5,08

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



Type: IC 2,5/...-G-5,08 with MSTB 2,5/...-G-5,08



1786433 IC 2,5/ 5-G-5,08**17 Environmental and durability tests****17.1 Vibration test**






Specification	IEC 60068-2-6:2007-12
Result	Test passed
Frequency	10 - 150 - 10 Hz
Sweep speed	1 octave/min
Amplitude	0.35 mm (10 - 60.1 Hz)
Acceleration	5 g (60.1 - 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis
Note	

17.2 Insulation resistance

Specification	IEC 60512-3-1:2002-02
Result	Test passed
Insulation resistance, neighboring positions	> 5 MΩ

1786433 IC 2,5/ 5-G-5,08

18 Approvals / Certificates

CSA 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
	300 V	10 A	-	-
Usegroup D				
	300 V	10 A	-	-
IECEE CB Scheme 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	250 V	12 A	-	-
EAC 				
VDE Zeichengenehmigung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	250 V	12 A	-	-
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
	250 V	12 A	-	-
Usegroup D				
	300 V	10 A	-	-
VDE Zeichengenehmigung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	250 V	12 A	-	-

1786433 IC 2,5/ 5-G-5,08**19 Commercial Data**

Order No.	1786433
Type	IC 2,5/ 5-G-5,08
Pieces per package	50
Net weight	3.644 g
GTIN	4017918042585
	Information that applies locally, see link on page 1
	Information that applies locally, see link on page 1

20 corresponding plugs

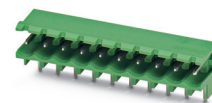
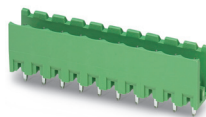
Order No.	Type
1898868	DFK-MSTBA 2,5/ 5-G-5,08
1847136	MSTBO 2,5/ 5-GR-5,08
1850466	MSTBO 2,5/ 5-GL-5,08
1872499	A-MSTBVA 2,5/ 5-G-5,08
1786200	IC 2,5/ 5-ST-5,08
1735853	MSTBW 2,5/ 5-G-5,08
1755765	MSTBVA 2,5/ 5-G-5,08
1758047	MSTBV 2,5/ 5-G-5,08
1759046	MSTB 2,5/ 5-G-5,08
1902770	MSTBA 2,5/ 5-G-5,08 THT
1902848	MSTBVA 2,5/ 5-G-5,08 THT
1899168	DFK-MSTBVA 2,5/ 5-G-5,08
1845361	MDSTBVA 2,5/ 5-G-5,08
1842092	MDSTBA 2,5/ 5-G-5,08
1880339	EMSTBA 2,5/ 5-G-5,08
1859548	EMSTBVA 2,5/ 5-G-5,08
1873388	FKIC 2,5/ 5-ST-5,08
1770973	MSTBA 2,5/ 5-G-5,08-LA
1757271	MSTBA 2,5/ 5-G-5,08
1770740	MSTB 2,5/ 5-G-5,08-LA
1767407	SMSTBA 2,5/ 5-G-5,08
1769492	SMSTB 2,5/ 5-G-5,08
1823875	ICC 2,5/ 5-STZ-5,08

21 Accessories

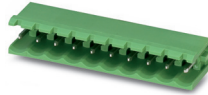
Description	Order No.	Type
Coding profile, is inserted into the slot on the plug or inverted header, red insulating material	1734634	CP-MSTB

1786433 IC 2,5/ 5-G-5,08

22 Combination tests



IC 2,5/..-G	MSTBA 2,5/..-G	MSTBV 2,5/..-G	MSTBVA 2,5/..-G	MSTBW 2,5/..-G
IEC 61984	IEC 61984	IEC 61984	IEC 61984	IEC 61984
Mechanical tests (A)				
Insertion/withdrawal force per position	approx. 8 N / 6 N	approx. 9 N / 8 N	approx. 9 N / 8 N	approx. 10 N / 8 N
Polarization when inserted Requirement >20 N	Test passed	Test passed	Test passed	Test passed
Contact holder in insert Requirements >20 N	Test passed	Test passed	Test passed	Test passed
Durability tests (B)				
Contact resistance R ₁ 1st level	1.2 mΩ	2.3 mΩ	2.3 mΩ	1.3 mΩ
Contact resistance R ₁ 2nd level				
Insertion/withdrawal cycles	25	25	25	25
Contact resistance R ₂	1.2 mΩ	2.3 mΩ	2.4 mΩ	1.3 mΩ
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV	4.8 kV	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV	2.21 kV
Thermal tests (C)				
Tested number of positions	24	24	24	24
Tested conductor cross section	2.5 mm ²	2.5 mm ²	2.5 mm ²	2.5 mm ²
Test current	12 A	12 A	12 A	12 A
Upper limiting temperature Requirements < 100°C	Test passed	Test passed	Test passed	Test passed
Climatic tests (D)				
Test sequence 1: low temperature storage	-40 °C/2 h	-40 °C/2 h	-40 °C/2 h	-40 °C/2 h
Test sequence 2: heat storage	100 °C/168 h	105 °C/168 h	105 °C/168 h	105 °C/168 h
Test sequence 3: noxious gas storage (ISO 6988)	0.2 dm ³ SO ₂ on 300 dm ³ / 40 °C/1 cycle	0.2 dm ³ SO ₂ on 300 dm ³ / 40 °C/1 cycle	0.2 dm ³ SO ₂ on 300 dm ³ / 40 °C/1 cycle	0.2 dm ³ SO ₂ on 300 dm ³ / 40 °C/1 cycle
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV	4.8 kV	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV	2.21 kV
Environmental and endurance tests (E)				
Specification	IEC 61984:2008-10	IEC 61984:2008-10	IEC 61984:2008-10	IEC 61984:2008-10
Degree of protection	Finger safety with IP20 test finger	Back of hand safety with IP10 access probe	Back of hand safety with IP10 access probe	Back of hand safety with IP10 access probe

1786433 IC 2,5/ 5-G-5,08**IC 2,5/..-G**

IEC 61984

Mechanical tests (A)

Insertion/withdrawal force per position

Polarization when inserted
Requirement >20 NContact holder in insert
Requirements >20 N**Durability tests (B)**Contact resistance R₁ 1st levelContact resistance R₁ 2nd level

Insertion/withdrawal cycles

Contact resistance R₂Rated impulse voltage at sea level
Voltage waveform ≥ (1.2/50 μs)Power-frequency withstand voltage
Voltage waveform ≥ (50/60 Hz)**Thermal tests (C)**

Tested number of positions

Tested conductor cross section

Test current

Upper limiting temperature
Requirements < 100°C**Climatic tests (D)**

Test sequence 1: low temperature storage

Test sequence 2: heat storage

Test sequence 3: noxious gas storage
(ISO 6988)Rated impulse voltage at sea level
Voltage waveform ≥ (1.2/50 μs)Power-frequency withstand voltage
Voltage waveform ≥ (50/60 Hz)**Environmental and endurance tests (E)**

Specification

Degree of protection

MSTB 2,5/..-G

IEC 61984

approx. 10 N / 8 N

Test passed

Test passed

1.2 mΩ

25

1.3 mΩ

4.8 kV

2.21 kV

24

2.5 mm²

12 A

Test passed

-40 °C/2 h

105 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Back of hand safety with
IP10 access probe