



### **CONTENT PAGE**

### **BERGSTIK® 2.54MM UNSHROUDED HEADERS**

Dverview————————————————————————————————————	
For Pin-in-Paste Processes —	4-7
Vertical Headers Standard sizes ————————————————————————————————————	8-9
Vertical Headers Special sizes	10-11
Continuous Headers	12-13
Right Angle Headers Standard sizes	14-15
Right Angle Headers Special sizes	16-17
Stacking Headers —	18-19



## BERGSTIK® 2.54MM UNSHROUDED HEADERS

#### **OVERVIEW**

BergStik® 2.54mm unshrouded headers are available in surface-mount (SMT), through-hole (THT), press-fit, stacking and pin-in-paste (PIP) versions. Designed in single and double row, they are available in straight or right angle options, from 2 to 72 positions.

Featuring a "breakaway" design, each connector can be cut or broken to length to suit the application profile. The maximum current rating is 3A per contact.

This product range is extended with BergStik® 2.54mm unshrouded vertical headers in 0.25µm plating, available in standard sizes. It offers an economical solution for various applications. It is also specified up to 100 mating cycles.

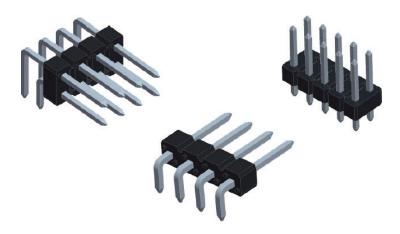
BergStik® product range provides Board-to-Board, Wire-to-Board and Cable-to-Board interconnect solutions for all electronic equipment and devices.



FEATURES	BENEFITS
High temperature thermoplastic material	Reflow compatible
<ul> <li>Variable spacing height for stacking headers</li> </ul>	Cater to a wide range of applications
Allow dual entry; mating from top or bottom	<ul> <li>Suitable for mezzanine application and gives more flexibility in meeting different stack height requirements</li> </ul>
<ul> <li>Blank 0.64mm square contacts presents 4 surfaces of equal quality</li> </ul>	Can be used for wire wrapping
Standoff design	Allows cleaning to remove soldering contamination
Duplex plating	Cost-efficient
Tin-lead plating in press-fit area	Easy pin insertion onto PCB
Retention legs option	High retention force onto PCB
<ul> <li>Press-fit designed to fit 1.02mm diameter hole, solder-to- board product</li> </ul>	Same layout on THT and press-fit
Meets DIN 41651 specification, HE13 and BT D2632	Qualified product

## **▶** BOARD/WIRE-TO-BOARD CONNECTORS

## BERGSTIK® UNSHROUDED HEADERS FOR PIN-IN-PASTE PROCESSES



Pin-in-Paste (PIP) technology allows the use of THT products in SMT manufacturing processes. THT connectors are automatically or manually soldered to PCB, and soldered in the same operation as the SMT connectors. Mechanical strength is retained through THT leads. This process is critical for applications in industrial and automotive markets.

#### **PRODUCT**

#### **PLASTIC MATERIAL**

BergStik® PIP headers are moulded in high temperature thermoplastic. The headers are able to withstand exposure to 260°C peak temperature for 30 seconds maximum in a convection, infrared or vapor phase reflow oven.

#### **HOUSING DESIGN**

A special housing has been developed for the double row straight product. A row of higher standoffs has been placed in the longitudinal center axis, between both rows of pins for a good solder paste deposit around the pin. Please follow the stencil design guidelines TA-894 and TA-897 on the following page in order to avoid solder paste deposit under the standoffs.

## **▶** BERGSTIK® UNSHROUDED HEADERS FOR PIN-IN-PASTE PROCESSES



#### **APPLICATION**

FCI's application guideline helps to achieve optimum performance for BergStik® PIP process.

#### STENCIL DESIGN

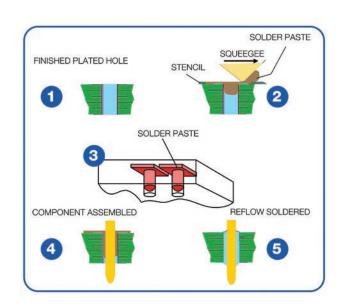
The stencil design is crucial for a good solder joint. It determines the amount of paste and the position of the paste print on the board. Each PCB hole has its own stencil aperture with enough spacing in between to allow separate solder deposits. This prevents solder robbing from one hole to another and ensures the correct amount of solder paste for each hole. The print position is placed asymmetrical to optimize the flow of molten solder paste.

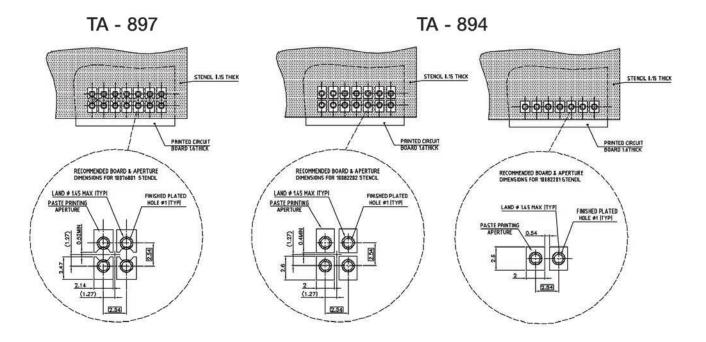
#### **PASTE APPLICATION**

The amount of paste for each hole depends on the soldering process parameters and the degree of hole filling. It is recommended to apply the squeegee at a 45° angle. You can use a smaller angle for an even greater degree of hole filling. The squeegee moves in parallel with the shorter sides of the stencil apertures.

#### **BOARD LAYOUT**

Please use a hole of 1.00 + /- 0.05 mm for an optimum paste deposit. For automatic pick-and place, lean towards the upper end of the tolerance. Refer to TA-894 for further information.





## **▶ BERGSTIK® UNSHROUDED HEADERS**FOR PIN-IN-PASTE PROCESSES

#### **TECHNICAL INFORMATION**

#### **MATERIALS**

- · Housing: PCT
- · Color: Black
- Flammability Rating: UL94V-0
- Pins: Copper Alloy
- Plating: Selective Gold or GXT or full Tin over 1.2µm Nickel

#### **ELECTRICAL PERFORMANCE**

- Current Rating: 3A per contact
- Insulation Resistance: 5000M $\Omega$  min.
- Dielectric Withstanding Voltage: 1500V

#### **ENVIRONMENTAL**

• Operating Temperature: -65°C to +130°C

#### **MECHANICAL PERFORMANCE**

· Retention Force: 8.8N min

#### **SPECIFICATIONS**

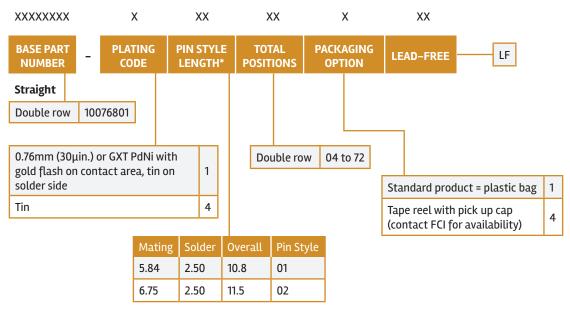
- 🔊 File no. E66906
- **G** File no. LR46923
- Product Drawing: 10076801/ 10082201/ 10082202
- Product Specification: BUS-12-019

#### **APPROVALS AND CERTIFICATIONS**

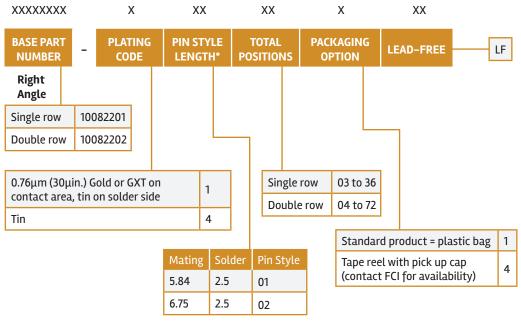
 RoHS compliant according to the European Union Directive 2002/95/IEC

## **▶ BERGSTIK® UNSHROUDED HEADERS FOR PIN-IN-PASTE PROCESSES**





<sup>\*</sup>Other pin style are available upon request



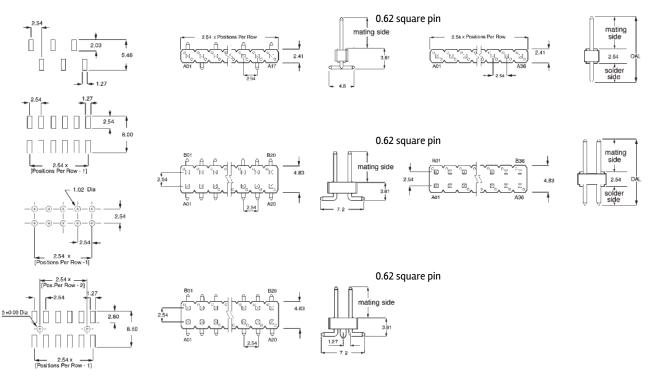
<sup>\*</sup>Other pin style are available upon request

## **BOARD/WIRE-TO-BOARD CONNECTORS**

# BERGSTIK® UNSHROUDED VERTICAL HEADERS STANDARD SIZES

# Mating side mating side mating side 7.20mm for increased board density

#### **PRODUCT**



**Recommended PCB Layouts** 

## **▶ BERGSTIK® UNSHROUDED**VERTICAL HEADERS STANDARD SIZES



#### TECHNICAL INFORMATION

#### **MATERIALS**

- Housing: High temperature thermoplastic, Black
- Flammability Rating: UL94V-0
- · Pin: Phosphor-bronze
- Plating: Gold or Tin over 1.27μm (50μin.) Nickel

#### **ELECTRICAL PERFORMANCE**

- Current Rating: 3A per contact
- Insulation Resistance: 5000M $\Omega$  min.
- · Dielectric Withstanding Voltage: 1500V

#### **ENVIRONMENTAL**

• Operating Temperature: -65°C to +125°C

#### **MECHANICAL PERFORMANCE**

· Retention Force: 9N min.

#### **SPECIFICATIONS**

- **51** File no. E66906
- **G** File no. LR46923
- Product Drawing: 77311/77313/98401/95278
- Product Specification: BUS-12-114
- Tape and Reel Packaging Data: TA-840

#### **APPROVALS AND CERTIFICATIONS**

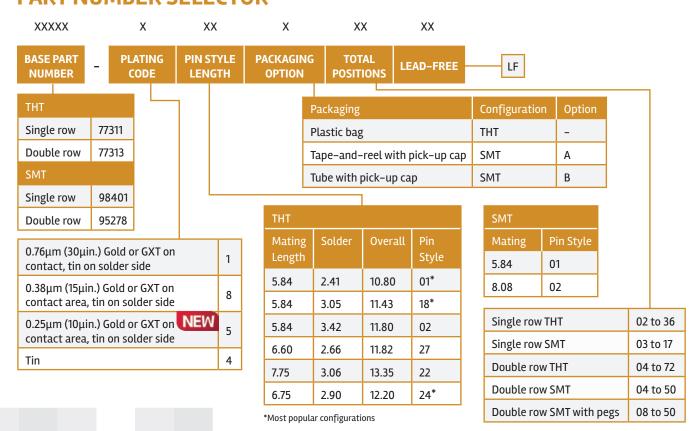
 RoHS compatible according to the European Union Directive 2002/95/IEC

#### **PACKAGING**

- Bags
- Optional: Tubes or tape-and-reel with pick-up cap (only applicable for SMT pin style 01)

#### **PROCESSING INFORMATION**

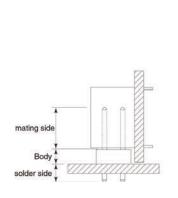
- Compatible with wave, vapor-phase, and (for SMT) IR reflow soldering processes
- · Recommended IR profile TA 842 for SMT

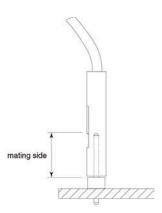


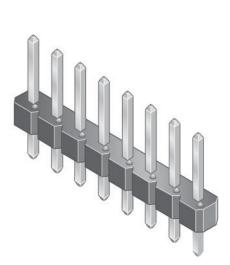
## **BOARD/WIRE-TO-BOARD CONNECTORS**

# BERGSTIK® UNSHROUDED VERTICAL HEADERS SPECIAL SIZES

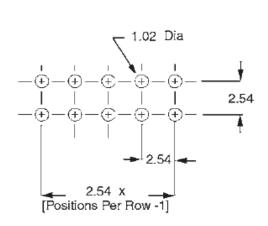
#### **APPLICATION**

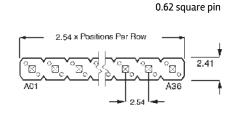


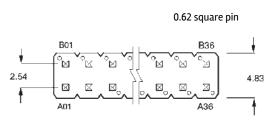


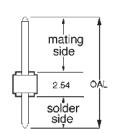


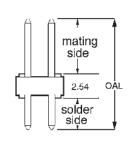
#### **PRODUCT**











#### **Recommended PCB Layouts**



#### **TECHNICAL INFORMATION**

#### **MATERIALS**

- · Housing: High temperature thermoplastic, Black
- Flammability Rating: UL94V-0
- Pin: Phosphor-bronze
- Plating: Gold or Tin over 1.27μm (50μin.) Nickel

#### **ELECTRICAL PERFORMANCE**

- · Current Rating: 3A per contact
- Insulation Resistance: 5000M $\Omega$  min
- Dielectric Withstanding Voltage: 1500V

#### **ENVIRONMENTAL PERFORMANCE**

• Operating Temperature: -65°C to +125°C

#### **MECHANICAL PERFORMANCE**

- · Retention Force: 9N min.
- Retentive Leg Insertion Force: >44.48N max.
- · Retentive Leg Board Retention: 2.22N

#### **SPECIFICATIONS**

- 5 File no. E66906
- **G** File no. LR46923
- Product Drawing: 68000/67996
- Product Specification: BUS-12-114

#### **APPROVALS AND CERTIFICATIONS**

 RoHS compatible according to the European Union Directive 2002/95/IEC

#### **PACKAGING**

- Bags
- Optional: Tubes or tape-and-reel with pick-up cap (only applicable for SMT pin style 01)

#### **PROCESSING INFORMATION**

Compatible with wave, vapor-phase, and IR reflow soldering processes

#### PART NUMBER SELECTOR

Customize your own part number using custom dimensions (Please allow for initial setup on our system)



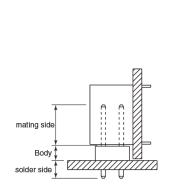
Note: 1. The total combined dimension for mating and solder side may not exceed 27mm

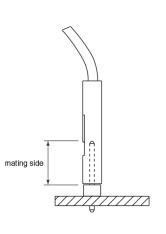
- 2. Standard packaging in bulk
- 3. Special packaging availability upon request

## **▶** BOARD/WIRE-TO-BOARD CONNECTORS

# BERGSTIK® UNSHROUDED CONTINUOUS HEADERS

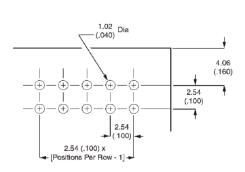
#### **APPLICATION**

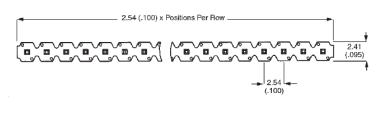


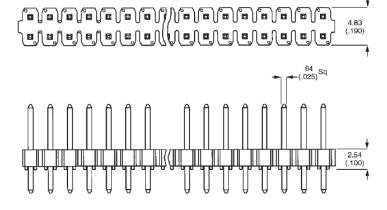




#### **PRODUCT**







**Recommended PCB Layouts** 

## BERGSTIK® UNSHROUDED CONTINUOUS HEADERS



#### **TECHNICAL INFORMATION**

#### **MATERIALS**

- · Housing: High temperature thermoplastic, Black
- Flammability Rating: UL94V-0
- Pin: Phosphor-bronze
- Plating: Gold or Tin over 1.27μm (50μin.) Nickel

#### **ELECTRICAL PERFORMANCE**

- · Current Rating: 3A per contact
- Insulation Resistance: 5000M $\Omega$  min
- Dielectric Withstanding Voltage: 1500V

#### **ENVIRONMENTAL PERFORMANCE**

• Operating Temperature: -65°C to +125°C

#### **MECHANICAL PERFORMANCE**

· Retention Force: 9N min.

#### **SPECIFICATIONS**

- 🔊 File no. E66906
- **G** File no. LR46923
- Product Drawing: 54101/54102/77311/77313
- Product Specification: BUS-12-059

#### **APPROVALS AND CERTIFICATIONS**

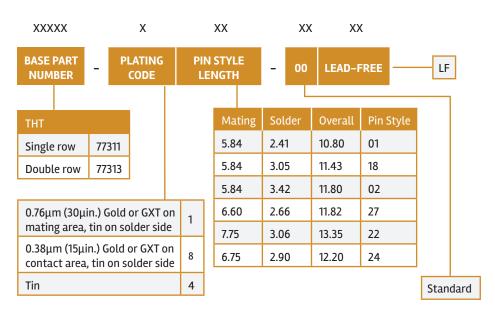
 RoHS compatible according to the European Union Directive 2002/95/IEC

#### **PACKAGING**

• Reel

#### **PROCESSING INFORMATION**

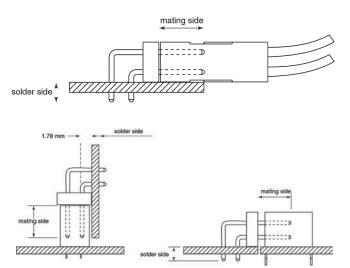
Compatible with wave, vapor-phase, and IR reflow soldering processes



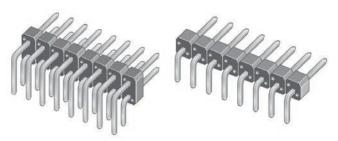
## **BOARD/WIRE-TO-BOARD CONNECTORS**

## BERGSTIK® UNSHROUDED RIGHT ANGLE HEADERS STANDARD SIZES

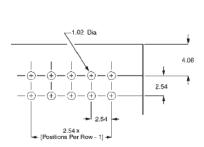
#### **APPLICATION**

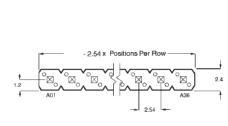


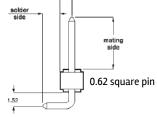


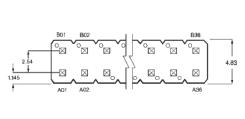


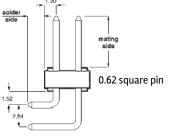
#### **PRODUCT**











#### **Recommended PCB Layouts**

## **▶** BERGSTIK® UNSHROUDED RIGHT ANGLE HEADERS STANDARD SIZES



#### **TECHNICAL INFORMATION**

#### **MATERIALS**

- · Housing: High temperature thermoplastic, Black
- Flammability Rating: UL94V-0
- Pin: Phosphor-bronze
- Plating: Gold or Tin over 1.27μm (50μin.) Nickel

#### **ELECTRICAL PERFORMANCE**

- Current Rating: 3A per contact
- Insulation Resistance: 5000M $\Omega$  min
- Dielectric Withstanding Voltage: 1500V

#### **ENVIRONMENTAL PERFORMANCE**

• Operating Temperature: -65°C to +125°C

#### **MECHANICAL PERFORMANCE**

· Retention Force: 9 N min.

#### **SPECIFICATIONS**

- 🔊 File no. E66906
- **G** File no. LR46923
- Product Drawing: 77315/77317
- Product Specification: BUS-12-114

#### **APPROVALS AND CERTIFICATIONS**

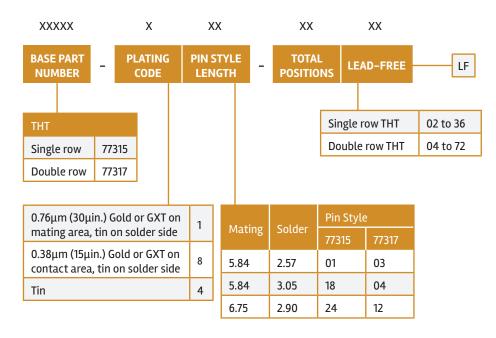
 RoHS compatible according to the European Union Directive 2002/95/IEC

#### **PACKAGING**

Bags

#### PROCESSING INFORMATION

Compatible with wave, vapor-phase, and IR reflow soldering processes

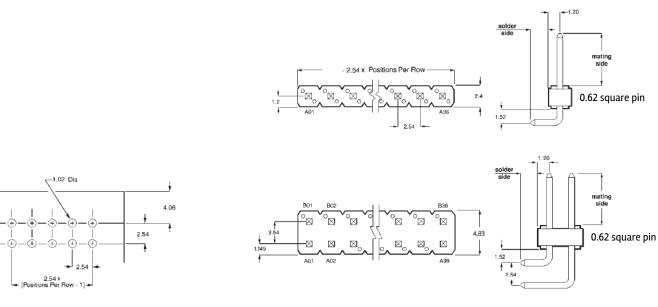


## **▶** BOARD/WIRE-TO-BOARD CONNECTORS

# BERGSTIK® UNSHROUDED RIGHT ANGLE HEADERS SPECIAL SIZES

# solder side 1.78 mm solder aide solder aide solder aide

#### **PRODUCT**



**Recommended PCB Layouts** 



#### **TECHNICAL INFORMATION**

#### **MATERIALS**

- Housing: High temperature thermoplastic, Black
- Flammability Rating: UL94V-0
- · Pin: Phosphor-bronze
- Plating: Gold or Tin over 1.27μm (50μin.) Nickel

#### **ELECTRICAL PERFORMANCE**

- Current Rating: 3A per contact
- Insulation Resistance: 5000M $\Omega$  min
- Dielectric Withstanding Voltage: 1500V

#### **ENVIRONMENTAL PERFORMANCE**

• Operating Temperature: -65°C to +125°C

#### **MECHANICAL PERFORMANCE**

- · Retention Force: 9N min.
- Retentive Leg Insertion Force: >44.48N max.
- · Retentive Leg Board Retention: 2.22N

#### **SPECIFICATIONS**

- **51** File no. E66906
- **G** File no. LR46923
- · Product Drawing: 55101/55102/68015/68020
- Product Specification: BUS-12-114

#### **APPROVALS AND CERTIFICATIONS**

 RoHS compatible according to the European Union Directive 2002/95/IEC

#### **PACKAGING**

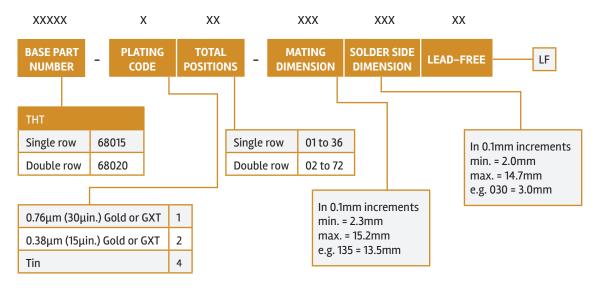
Bags

#### **PROCESSING INFORMATION**

Compatible with wave, vapor-phase, and IR reflow soldering processes

#### PART NUMBER SELECTOR

Customize your own part number using custom dimensions (Please allow for initial setup on our system)



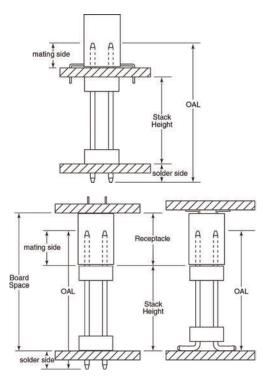
Note: 1. Bend dimension 1.52mm only

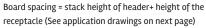
2. The total combined dimension for mating and solder side may not exceed 25.5mm

## BOARD/WIRE-TO-BOARD CONNECTORS

# BERGSTIK® UNSHROUDED STACKING HEADERS

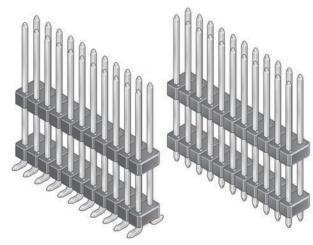
#### **APPLICATION**



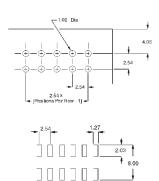




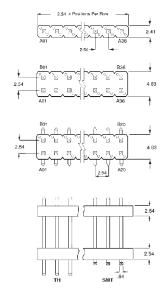




#### **PRODUCT**



2.54 x [Positions Per Row - 1]



#### **Recommended PCB Layouts**

## **▶** BERGSTIK® UNSHROUDED STACKING HEADERS



#### **TECHNICAL INFORMATION**

#### **MATERIALS**

- · Housing: High temperature thermoplastic, Black
- Flammability Rating: UL94V-0
- · Pin: Phosphor-bronze
- Plating: Gold or Tin over 1.27μm (50μin.) Nickel

#### **ELECTRICAL PERFORMANCE**

- · Current Rating: 3A per contact
- Insulation Resistance: 5000M $\Omega$  min
- Dielectric Withstanding Voltage: 1500V

#### **ENVIRONMENTAL PERFORMANCE**

Operating Temperature: -65°C to +125°C

#### **MECHANICAL PERFORMANCE**

· Retention Force: 9N min.

#### **SPECIFICATIONS**

- 🔊 File no. E66906
- **G** File no. LR46923
- Product Drawing: By 5-digit base part number
- Product Specification: BUS-12-114

#### APPROVALS AND CERTIFICATIONS

 RoHS compatible according to the European Union Directive 2002/95/IEC

#### **PACKAGING**

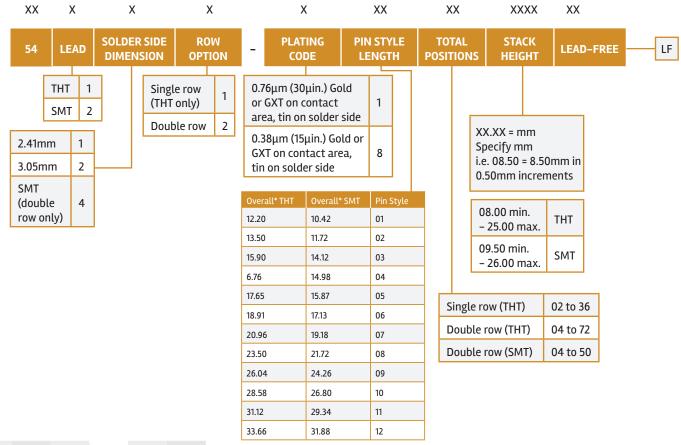
• Bags

#### **PROCESSING INFORMATION**

Compatible with wave, vapor-phase, and IR reflow soldering processes

#### PART NUMBER SELECTOR

Customize your own part number using custom dimensions (Please allow for initial setup on our system)



<sup>\*</sup>Other overall lengths available upon request (Up to 65mm)



FCIBERG0615E/

#### **Mouser Electronics**

**Authorized Distributor** 

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

#### FCI / Amphenol:

54101-S08-00 54202-G08-05 55102-T17-22 65820-004 67996-100HLF 67996-110H 67996-128 67996-134 67996-200HLF 67996-300HLF 67996-400HLF 67997-100HLF 67997-106H 67997-124 67997-134 67997-172H 67997-200HLF 67997-216 67997-220 67997-372 67997-372H 67997-400HLF 67997-634 68000-100HLF 68000-101HLF 68000-102HLF 68000-200HLF 68000-202H 68000-300H 68000-300HLF 68000-400HLF 68000-400HLF 68000-400HLF 68002-200HLF 68002-200HLF 68002-400HLF 68001-200HLF 68001-400HLF 68001-603 68002-100HLF 68002-136H 68002-200HLF 68002-400HLF 68004-400HLF 68015-103 68015-236H 68015-236HLF 68015-408 68015-536 68016-104 68020-572 68021-116 68021-140 68023-436 68024-100HLF 68024-400HLF 68405-272 68405-472 68417-136 68448-112 68458-136 68481-172H 68488-236 68602-572 68626-436 68691-100HLF 68691-110 68691-114 68691-272 68691-400HLF 68737-100HLF 68737-200HLF 68737-400HLF 68764-402 69192-110 75160-101-36 75160-802-36 77311-102-02 77311-102-03 77311-118-36 77311-418-36 77311-424-02 78511-100HLF 78511-400HLF 78938-436H 95157-114 68001-400H 95157-114LF 67996-172HLF 68000-436HLF 68692-408 69916-012LF 68001-403HLF 68001-402H 68001-102HLF 68691-414 68488-436HLF 54202-S08-04 54202-S08-10 86837-140HLF