



**THE DATASHEET OF**  
**68016-104HLF**



# BergStik® Headers Straight Unshrouded

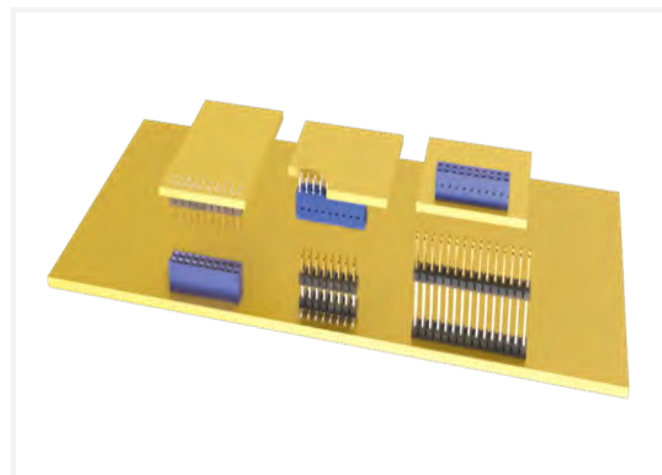
## 2.54MM PITCH

### VERSATILE HEADERS WITH BREAKAWAY DESIGN

BergStik® Amphenol FCI Basics 2.54mm unshrouded headers are offered in Surface-mount (SMT), Through-hole (THT), Press-fit (PF), and Pin-in-Paste (PIP) versions. Available in single and double rows from 2 to 72 positions.

These “breakaway headers” can be cut or broken into specific lengths to suit the application profile with a maximum current rating of 3A per contact. The drawn-wire pins offer an economical solution for various applications with durability of up to 100 mating.

- Same PCB layout for Through-Hole and PF versions
- Multiple termination options: SMT, THT, PF, PIP
- Fully compatible with Dubox® receptacles



#### TARGET MARKETS



#### FEATURES

- High temperature thermoplastic material
- Customizable height
- Blank 0.64mm square contacts present 4 surfaces of equal quality
- Standoff design
- Duplex plating
- Tin-lead plating in press-fit area
- Press-fit designed to fit 1.02mm diameter hole, solder-to-board products
- Meets DIN 41651 specification, HE 13, and BT D2632

#### BENEFITS

- Re-flow compatible
- Cater to a wide range of applications
- Suitable for mezzanine application and gives more flexibility in meeting different stack height requirements
- Can be used for wire wrapping
- Allows cleaning to remove soldering contamination
- Cost efficient
- Easy pin insertion onto PCB
- High retention force onto PCB
- Same layout on THT and press-fit
- Qualified product

## TECHNICAL INFORMATION

### MATERIAL

- Housing: High temperature thermoplastic
- Flammability Rating: UL94V-0
- Pin: Phosphor Bronze
- Plating: Gold / GXT® or Tin over 1.27µm (50µin) Nickel

### MECHANICAL PERFORMANCE

- Pin Retention Force to Housing: 9N min.

### ELECTRICAL PERFORMANCE

- Current Rating:
  - 3A continuous
  - 2A DC max. per contact for fully energized connector
- Insulation Resistance: 5000MΩ min.
- Dielectric Withstanding Voltage: 1500Vrms min.

### ENVIRONMENTAL

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

### SPECIFICATIONS

- Product Specification: BUS-12-050 / BUS-12-144 (duplex plated) / BUS-12-117 (press-fit)

### APPROVALS & CERTIFICATION

- UL Approval: E66906

### PACKAGING

- Poly bags
- Endless reels
- Optional: Tubes or Tape and Reel with pick-up cap (if available)

### TOOLING INFORMATION

- Insertion tool: 30AWG to 20AWG

### TARGET MARKETS/APPLICATIONS



Personal Care Devices (Air Dryer)  
Home Care Devices (Cleaning Robot)  
Home Automation (Alarm System)



Server  
Storage

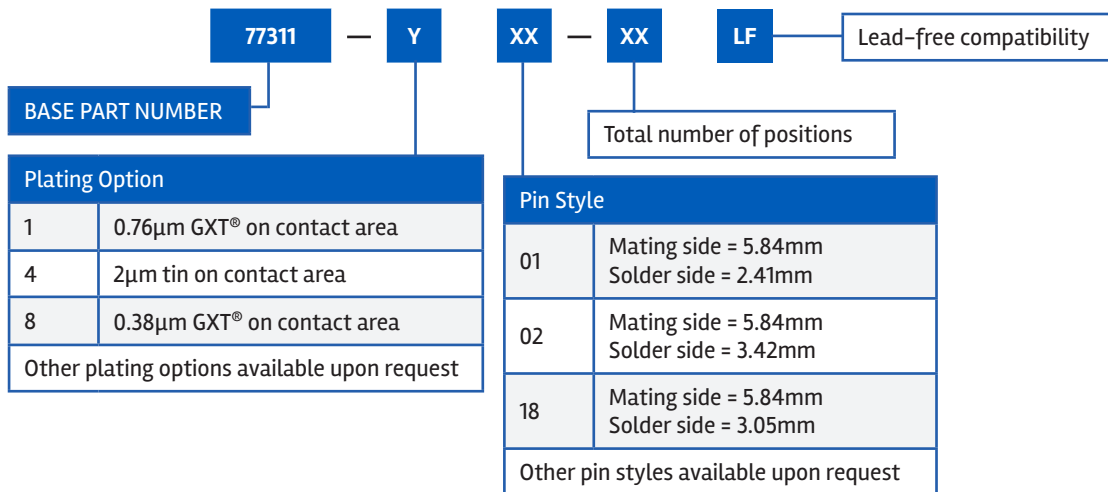


Robotics  
Programmable Logic Controller (PLC)  
Power Tool

## PART NUMBERS

Description	Part Numbers
Unshrouded Header, Straight, Single Row, TMT	77311
Unshrouded Header, Straight, Single Row, SMT	95293
Unshrouded Header, Straight, Single Row, Press-Fit	93689
Unshrouded Header, Straight, Double Row, TMT	77313
Unshrouded Header, Straight, Double Row, SMT	95278
Unshrouded Header, Straight, Double Row, Press-Fit	93690

## PART NUMBER SELECTOR – STRAIGHT UNSHROUDED HEADERS



# BergStik® Headers Stacking Unshrouded

## 2.54MM PITCH

### CUSTOMIZABLE STACKING HEADERS WITH BREAKAWAY DESIGN

BergStik® Amphenol FCI Basics 2.54mm Stacking Unshrouded Headers are offered in Surface-mount (SMT), Through-hole (THT), Press-fit (PF) and Pin-in-Paste (PIP) versions. Available in single and double row from 2 to 72 positions.

These “breakaway headers” can be cut or broken into specific lengths to suit the application profile with a maximum current rating of 3A per contact.

The drawn-wire pins offer an economical solution for various applications with durability up to 100 mating cycles.

- Duplex, triplex or full plating
- Height up to 55.00mm (duplex plating) and 65.00mm (triplex)
- Multiple termination options: SMT, THT, PF, PIP
- Fully compatible with Dubox® receptacles

#### FEATURES

- High temperature thermoplastic material
- Customizable height
- Allow dual entry, mating from top or bottom
- Blank 0.64mm square contacts present four surfaces of equal quality
- Standoff design
- Duplex plating
- Tin-lead plating in press-fit area
- Press-fit designed to fit 1.02mm diameter hole, solder-to-board products
- Meets DIN 41651 specification, HE 13, and BT D2632



#### TARGET MARKETS



#### BENEFITS

- Re-flow compatible
- Cater to a wide range of applications
- Suitable for mezzanine application and gives more flexibility in meeting different stack height requirements
- Can be used for wire wrapping
- Allows cleaning to remove soldering contamination
- Cost efficient
- Easy pin insertion onto PCB
- High retention force onto PCB
- Same layout on THT and Press-fit
- Qualified product

## TECHNICAL INFORMATION

### MATERIAL

- Housing: High temperature thermoplastic
- Flammability Rating: UL94V-0
- Pin: Phosphor Bronze
- Plating: Gold / GXT® or Tin over 1.27µm (50µin) Nickel

### MECHANICAL PERFORMANCE

- Pin Retention Force to Housing: 9N min.

### ELECTRICAL PERFORMANCE

- Current Rating:
  - 3A continuous 2ADC max. per contact for fully energized connector
- Insulation Resistance: 5000MΩ min.
- Dielectric Withstanding Voltage: 1500Vrms min.

### ENVIRONMENTAL

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

### SPECIFICATIONS

- Product Specification: BUS-12-050 / BUS-12-144 (duplex plated) / BUS-12-117 (press-fit)

### APPROVALS & CERTIFICATION

- UL Approval: E66906

### PACKAGING

- Poly bags
- Optional: Tubes or Tape and Reel with pick-up cap (if available)

### TARGET MARKETS/APPLICATIONS



Personal Care Devices (Air Dryer)  
Home Care Devices (Cleaning Robot)  
Home Automation (Alarm System)



Server  
Storage

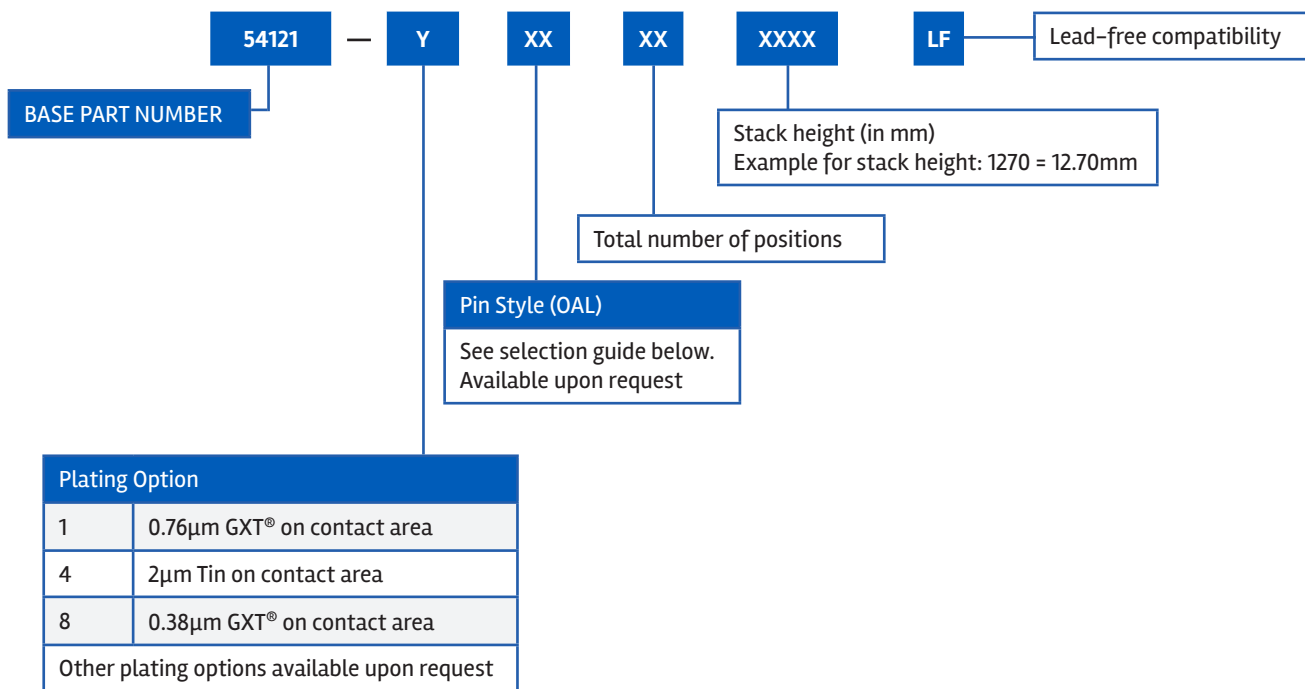


Robotics  
Programmable Logic Controller (PLC)  
Power Tool

## PART NUMBERS

Description	Part Numbers
Unshrouded Stacking Header, Vertical, Single Row, TMT	54121
Unshrouded Stacking Header, Vertical, Single Row, Press-Fit	10124323
Unshrouded Stacking Header, Vertical, Double Row, TMT	54122
Unshrouded Stacking Header, Vertical, Double Row, SMT	54242
Unshrouded Stacking Header, Vertical, Double Row, Press-Fit	10112620

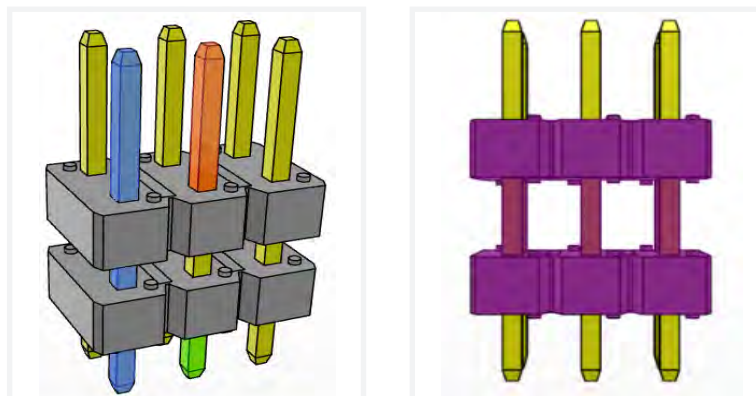
## PART NUMBER SELECTOR – STACKING UNSHROUDED HEADERS



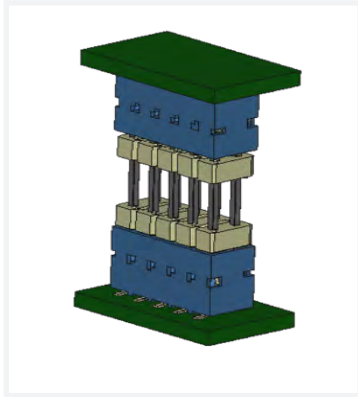
## PART OVERVIEW

- **Mating Length:** The length of the connector part that inserts into the receptacle, ensuring a secure electrical connection
- **Solder Tail:** The part of the connector used for soldering onto the printed circuit board, ensuring a secure attachment
- **OAL (Overall Length):** The total length of the connector, including the mating length and solder tail, determining the overall size of the connector
- **Stack Height:** The total stack height of the connectors when assembled, influencing the overall arrangement of electronic components (between housing)

54112, 54122 – Stacking Headers – Double Row – Through Hole

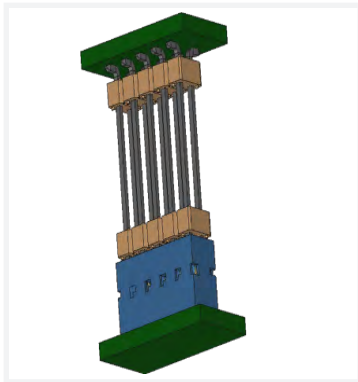


## STANDARD CONFIGURATION A



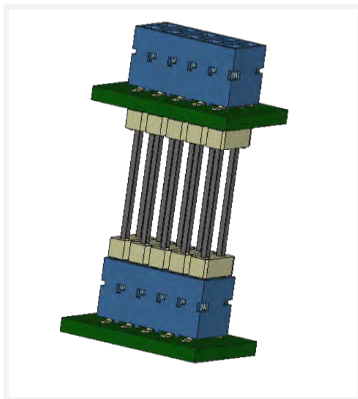
**Optimal OAL Formula\*:** Your Board-to-Board Distance – 3.40mm

## STANDARD CONFIGURATION B



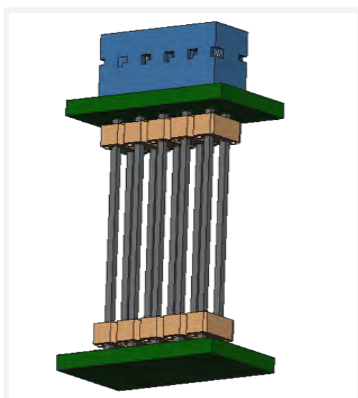
**Optimal OAL Formula\*:** Your Board-to-Board distance – 1.70mm

## STANDARD CONFIGURATION C



**Optimal OAL Formula\*:** Your Board-to-Board Distance  
+ your PCB thickness  
+ 5.50mm

## STANDARD CONFIGURATION D



**Optimal OAL Formula\*:** Your Board-to-Board Distance  
+ your PCB thickness  
+ 7.20mm

This calculation formula is applicable only with low-profile DUBOX receptacles (7.00mm high)

BASICBRGSTKSTKUH123E44

# BergStik® Headers Right-Angle Unshrouded

## 2.54MM PITCH

### VERSATILE HEADERS WITH BREAKAWAY DESIGN

BergStik® Amphenol FCI Basics 2.54mm unshrouded headers are offered in Surface-mount (SMT), Through-hole (THT), and Pin-in-Paste (PIP) versions. Available in single and double rows from 2 to 72 positions.

These “breakaway headers” can be cut or broken into specific lengths to suit the application profile with a maximum current rating of 3A per contact. The drawn-wire pins offer an economical solution for various applications with durability of up to 100 mating.

- Same PCB layout for Through-Hole and PF versions
- Multiple termination options: SMT, THT, PIP
- Fully compatible with Dubox® PCB receptacles



### FEATURES

- High temperature thermoplastic material
- Customizable height
- Blank 0.64mm square contacts present four surfaces of equal quality
- Standoff design
- Duplex plating
- Tin-lead plating in press-fit area
- Press-fit designed to fit 1.02mm diameter hole, solder-to-board products
- Meets DIN 41651 specification, HE 13, and BT D2632

### BENEFITS

- Re-flow compatible
- Cater to a wide range of applications
- Suitable for mezzanine application and gives more flexibility in meeting different stack height requirements
- Can be used for wire wrapping
- Allows cleaning to remove soldering contamination
- Cost efficient
- Easy pin insertion onto PCB
- High retention force onto PCB
- Same layout on THT and Press-fit
- Qualified product

## TECHNICAL INFORMATION

### MATERIAL

- Housing: High temperature thermoplastic
- Flammability Rating: UL94V-0
- Pin: Phosphor Bronze
- Plating: Gold / GXT® or Tin over 1.27µm (50µin) Nickel

### MECHANICAL PERFORMANCE

- Pin Retention Force to Housing: 9N min.

### ELECTRICAL PERFORMANCE

- Current Rating: 3A continuous 2A DC max. per contact for fully energized connector
- Insulation Resistance: 5000MΩ min.
- Dielectric Withstanding Voltage: 1500Vrms min.

### ENVIRONMENTAL

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

### SPECIFICATIONS

- Product Specification: BUS-12-050 / BUS-12-144 (duplex plated) / BUS-12-117 (press-fit)

### APPROVALS & CERTIFICATION

- UL Approval: LR46923

### PACKAGING

- Poly bags
- Optional: Tubes or Tape and Reel with pick-up cap


### TOOLING INFORMATION

- Insertion tool: 30AWG to 20AWG

### TARGET MARKETS/APPLICATIONS

 Personal Care Devices (Air Dryer)  
Home Care Devices (Cleaning Robot)  
Home Automation (Alarm System)

 Server  
Storage

 Robotics  
Programmable Logic Controller (PLC)  
Power Tool

## PART NUMBERS

Description	Part Numbers
Unshrouded Header, Horizontal, Single Row, TMT/PIP	77315
Unshrouded Header, Horizontal, Single Row, SMT	10119333
Unshrouded Header, Horizontal, Double Row, TMT/PIP	77317
Unshrouded Header, Horizontal, Double Row, SMT	10118084

## PART NUMBER SELECTOR – RIGHT-ANGLE UNSHROUDED HEADERS

77315 – Y – XX – XX – LF — Lead-free compatibility

BASE PART NUMBER

Plating Option	
1	0.76µm GXT® on contact area
4	2µm tin on contact area
8	0.38µm GXT® on contact area
Other plating options available upon request	

Total number of positions

Pin Style	
01	Mating side = 5.72mm Solder side = 2.57mm
18	Mating side = 5.84mm Solder side = 3.05mm
Other pin styles available upon request	

BASICSRGSTRKAUHI23EA4

# BergStik® SHUNTS Board/Wire-to-Board Connectors

## RELIABLE DESIGN, ENHANCED RETENTION

Amphenol's BergStik® SHUNTS has a comprehensive and extensive solution designed with solder tails self center on circuit pads to assure coplanarity. A locating feature helps to maintain alignment for soldering and facilitates robot placement.

- Dual beam contact design to ensure high reliable electrical performances
- Contact pre-stressed that requires low insertion force required
- 4 wall contact design for signal protection



### FEATURES

- Dual beam contact design
- Pre-stressed contact
- Mates with very short pins (5mm) and are stackable end-to-end and side-by-side
- Floating solder tails with self-centering on the circuit pads
- 4 wall contact design
- Duplex plating
- Locating feature available
- High temperature thermoplastic material
- Compliant to DIN41651 specifications, HE13 and BT D2632

### BENEFITS

- Highly reliable electrical performances
- Low insertion force
- Suitable for mezzanine applications and meets different application requirements
- Assures coplanarity
- Improved signal protection
- Cost efficient
- Maintains the alignment for soldering and facilitates robotic placement
- Compatible with Infrared and Vapor phase reflow
- Qualifies industry specific standards

## TECHNICAL INFORMATION

### MATERIAL

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



### MECHANICAL PERFORMANCE

- Mating cycles (durability): 50-Gold, 25-Tin
- Insertion force:
  - 450gf max. per gold contact
  - 500gf max. per tin-lead contact
- Withdrawal force:
  - 30gf min. per gold contact
  - 30gf min. per tin-lead contact
- Insertion depth:
  - 4.85 mm (.191in.) min. [provides 3.81 mm (.015in.) wipe] – Low profile

### ELECTRICAL PERFORMANCE

- Current Rating: 2.5A max. per contact
- Insulation Resistance: 50,000MΩ min.
- Contact Resistance: 15MΩ max. initial, 20MΩ max. after environmental tests
- Dielectric Withstanding Voltage: 800V

### SPECIFICATIONS

-  File No. E66906
-  File No. LR46923
- Product Drawing: By 5-digit base part number
- Product Specification:
  - BUS-12-071-gold
  - BUS-12-070-tin

### ENVIRONMENTAL

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

### APPROVALS & CERTIFICATION

- This product is RoHS compatible according to the European Union Directive 2002/95/IEC

### PACKAGING

- Plastic bags

### TARGET MARKETS/APPLICATIONS



Personal Care Devices (Air Dryer)  
Home Care Devices (Cleaning Robot)  
Home Automation (Alarm System)

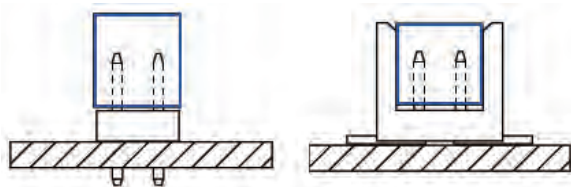


Server  
Storage



Robotics  
Programmable Logic Controller (PLC)  
Power Tool

## TYPICAL APPLICATIONS



## PART NUMBERS

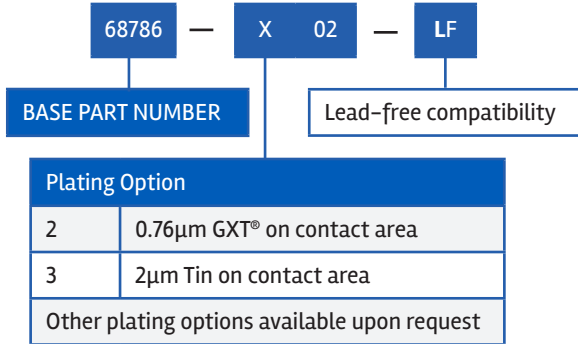
Description	Part Series
Shunt Low Profile, Single Row	68786
Shunt Low Profile, Double Row, Multi-position	87606
Shunt Standard, Single Row	63429

## PART NUMBER SELECTOR SHUNTS

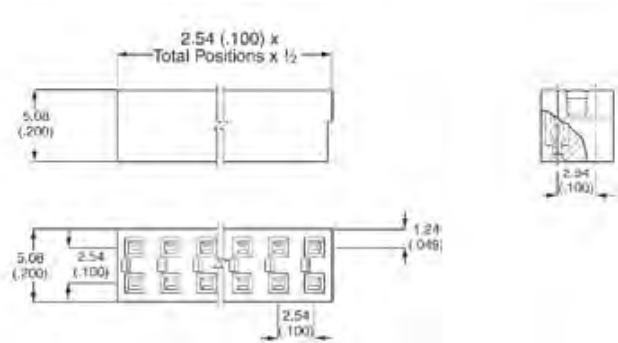
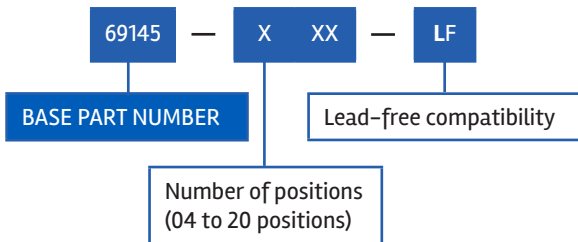
### CORE RANGE

68786 — 202LF

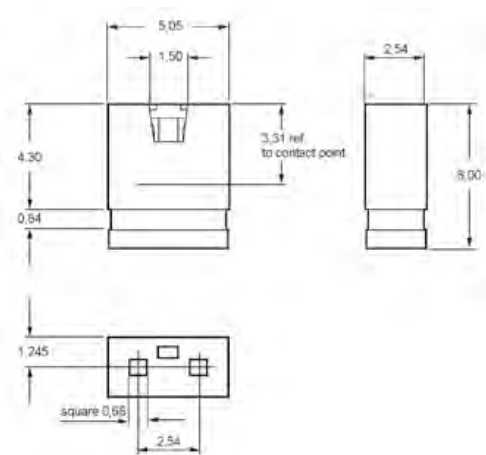
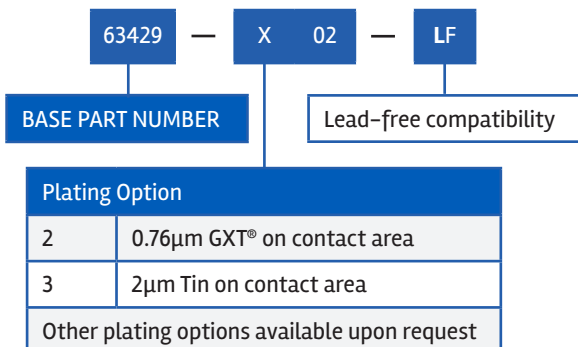
### LOW PROFILE



### MULTI-POSITION



### STANDARD



BASICSBRGSTKSHUNTS1223EA4

## Looking for pricing, stock, or lifecycle information?

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