

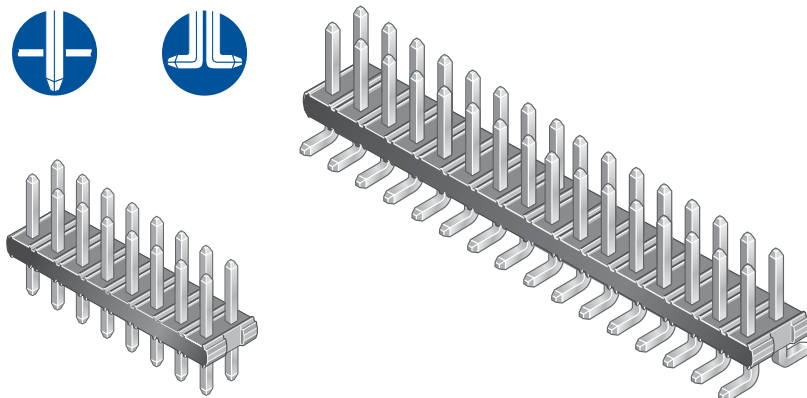
Minitek™ UNSHROUDED VERTICAL HEADERS 2.00 mm (.079")



TECHNICAL DATA

Physical

- Housing: High-temperature, black thermoplastic
- Flammability rating: UL 94 V-0
- Pin: Phosphor-bronze
- Plating: Gold over 1.27 μm (50 μ") nickel



Electrical Performance

- Current rating: 1 A continuous
- Insulation resistance: 1000 MΩ min.
- Contact resistance: 25 mΩ max.
- Dielectric withstanding voltage: 650 V
- Voltage rating: 200 V

Mechanical Performance

- Mating cycles (durability): 100

Operating Temperature Range

- -55°C to +125°C

Packaging

- Standard: TMT in tubes (04 to 06 pos. packed in box)
- SMT in Tape-and-reel
- Optional: SMT in Tubes

Reference Information

- File no. E66906
 - File no. LR46923
 - Product drawing: 57102 or 57202
 - Product specification: DPS-12-011 and GS-12-163
 - Tape and Reel packaging data: TA-884
- Specifications subject to change without notice.

MATING DATA

- Minitek™ ctw contacts and housings 68
- Minitek™ Vertical receptacles 60
- Minitek™ Shunts 62
- Minitek™ IDC receptacles 70

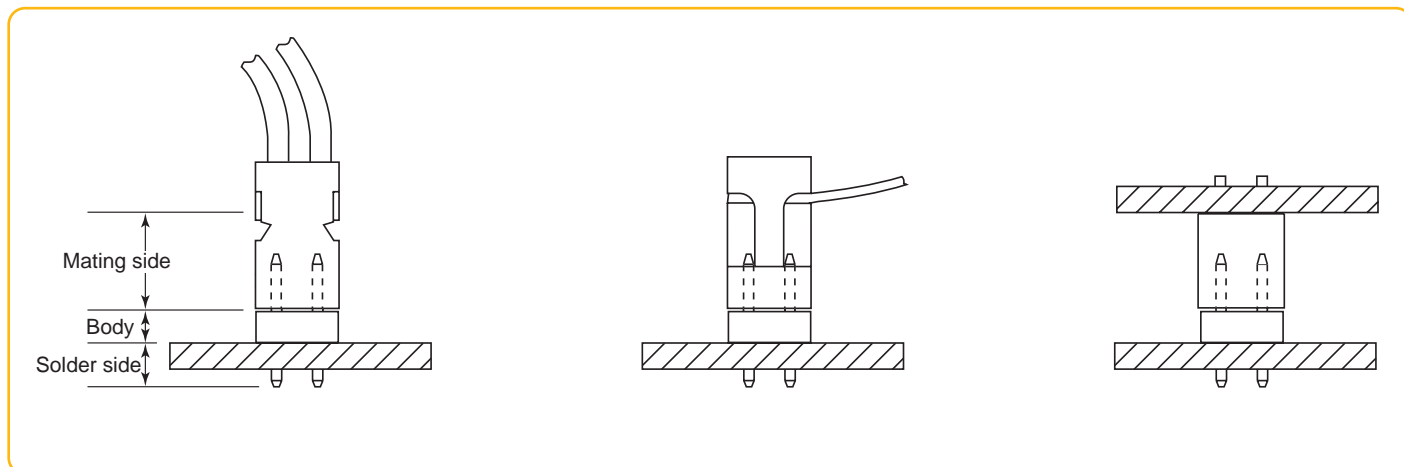
PROCESSING INFORMATION

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

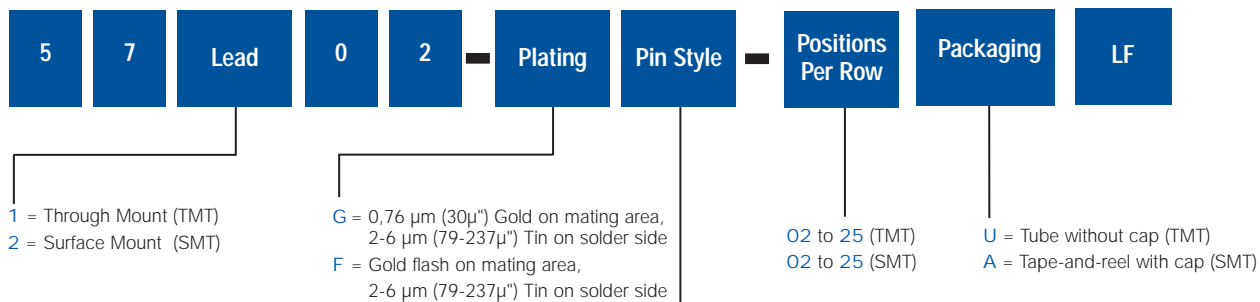
RoHS INFORMATION

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

TYPICAL APPLICATIONS



PART NUMBER



Surface Mount		Through Mount			
Pin Style	Mating side mm	Pin Style	Mating Side mm	Solder Side mm	OAL mm
51	2.00	06	4.00	2.50	8.00
52	4.00	08	4.00	3.00	8.50

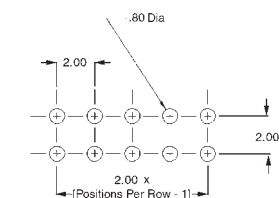
57202 - G 52 - XXALF

XX = 02, 03, 04, 05, 06, 08, 10

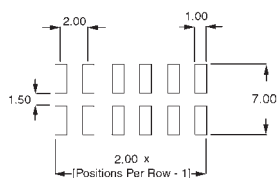
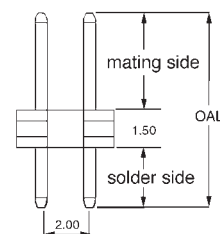
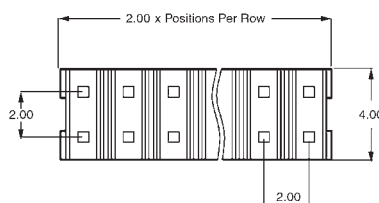
CORE RANGE

57202 - G 52 - Positions per row ALF

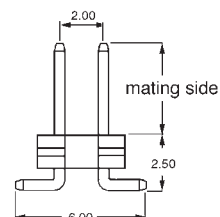
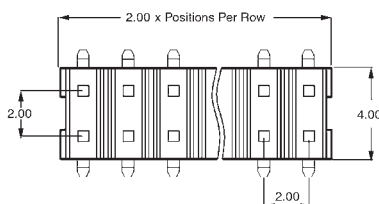
PRIORITY PART



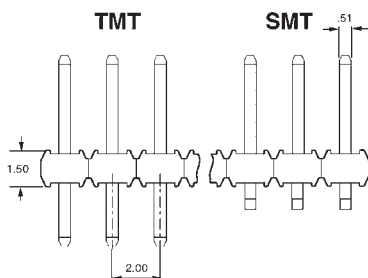
TMT



SMT



Recommended PCB Layout



Dimensions in mm

2.00 mm (.079")

Minitek™ UNSHROUDED RIGHT ANGLE HEADERS 2.00 mm (.079")

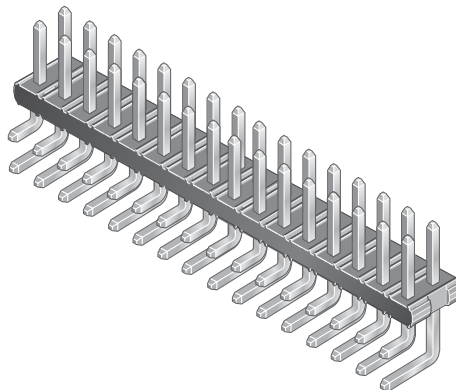


- High temperature plastic
- Selective plating

TECHNICAL DATA

Physical

- Housing: High-temperature, black thermoplastic
- Flammability rating: UL 94 V-0
- Pin: Phosphor-bronze
- Plating: Gold over 1.27 μm (50 μm) nickel



Electrical Performance

- Current rating: 1 A continuous
- Insulation resistance: 1000 M Ω min.
- Contact resistance: 25 m Ω max.
- Dielectric withstanding voltage: 650 V
- Voltage rating: 200 V

Mechanical Performance

- Mating cycles (durability): 100

Operating Temperature Range

- 55°C to +125°C

Packaging

- Tubes (04 to 06 pos. packed in box)

Reference Information

- File no. E66906
- File no. LR46923
- Product drawing: 98423
- Product specification: DPS-12-011 and GS-12-163

Specifications subject to change without notice.

MATING DATA

- Minitek™ ctw contacts and housings 68
- Minitek™ Vertical receptacles 60
- Minitek™ Shunts 62
- Minitek™ IDC receptacles 70

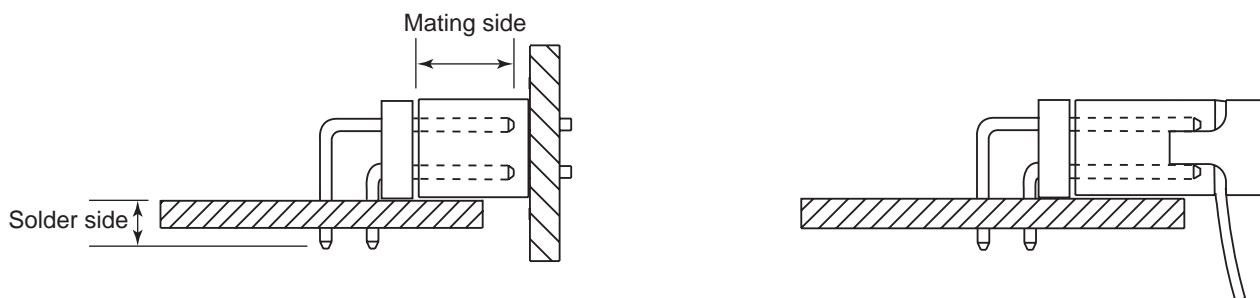
PROCESSING INFORMATION

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

RoHS INFORMATION

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

TYPICAL APPLICATIONS

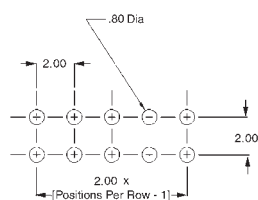


PART NUMBER

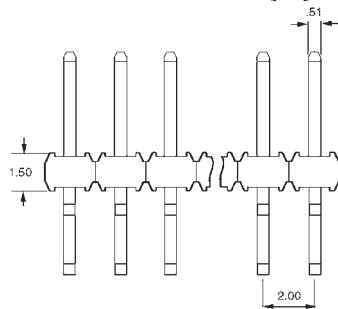
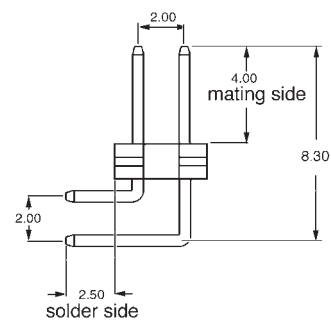
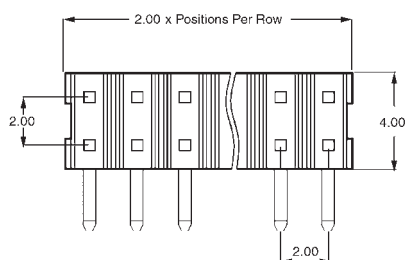


G = 0,76 μm (30 μin) Gold on mating area,
2-6 μm (79-237 μin) Tin on solder side
F = Gold flash on mating area,
2-6 μm (79-237 μin) Tin on solder side

02 to 25



Recommended PCB Layout



Dimensions in mm

Minitek™ UNSHROUDED STACKING HEADERS 2.00 mm (.079")



- Wide variety of stack heights in 0.13 mm increments
- Custom sizes to meet your specific design requirements

TECHNICAL DATA

Physical

- Housing: High-temperature, black thermoplastic
- Flammability rating: UL 94 V-0
- Pin: Phosphor-bronze
- Plating: Gold over 1.27 µm nickel



Electrical Performance

- Current rating: 2 A continuous
- Insulation resistance: 1000 MΩ min.
- Contact resistance: 25 mΩ max.
- Dielectric withstanding voltage: 650 V
- Voltage rating: 200 V

Mechanical Performance

- Mating cycles (durability): 100

Operating Temperature Range

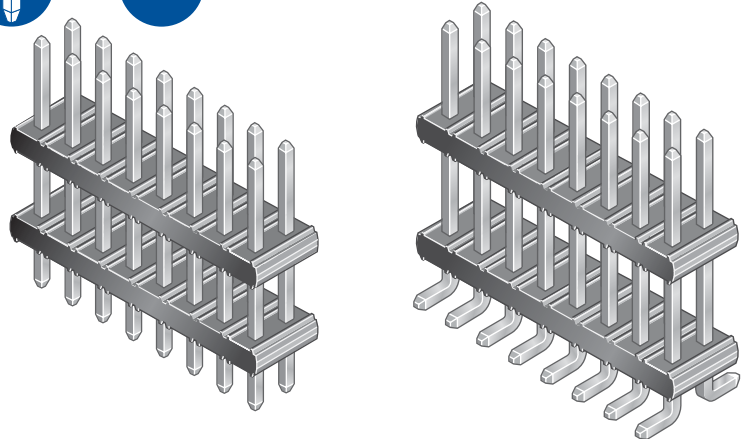
- 55°C to +125°C

Packaging

- Standard: in bags

Reference Information

- File no. E66906
 - File no. LR46923
 - Product drawing: 59112, 59132, or 59202
 - Product specification: DPS-12-011
- Specifications subject to change without notice.



MATING DATA

- Minitek™ ctw contacts and housings: 68
- Minitek™ Vertical receptacles: 60
- Minitek™ Shunts: 62
- Minitek™ IDC receptacles: 70

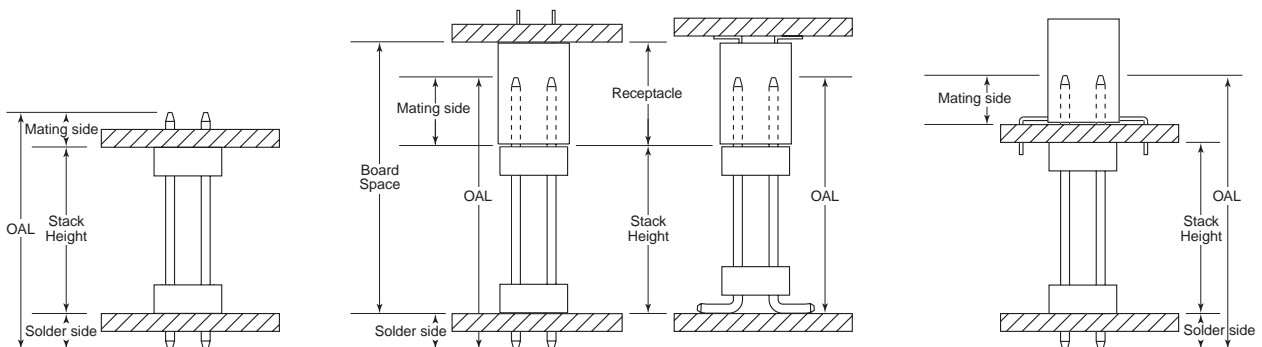
PROCESSING INFORMATION

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

RoHs INFORMATION

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

TYPICAL APPLICATIONS



2.00 mm (.079")

PART NUMBER



1 = Through Mount (TMT)
2 = Surface Mount (SMT)

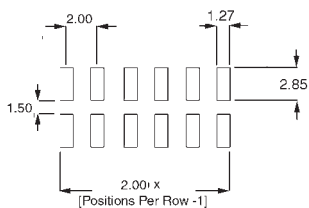
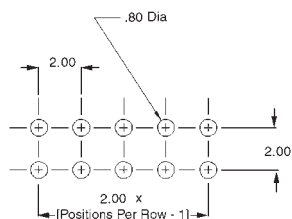
1 = 2.50
3 = 3.00
0 = SMT

T = 0,76 μm (30μ")
Gold on mating side,
tin on solder side

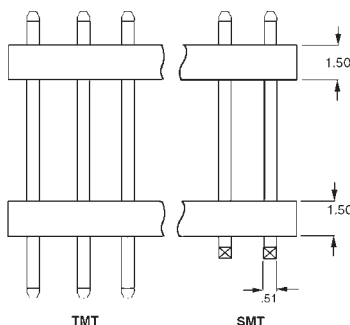
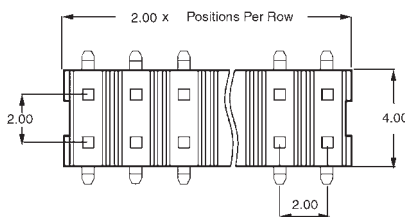
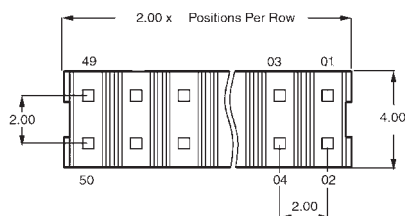
02 to 25 (TMT)
02 to 25 (SMT)

XXX = mm
Specify mm
[i.e., 037 = 03.7 mm]
in 0.1 mm increments

Pin Style	OAL (TMT) mm	OAL (SMT) mm
22	8.20	6.53
24	9.55	7.87
26	10.19	8.51
28	11.79	10.11
30	13.54	11.86
32	14.10	12.42
34	15.60	13.92
36	17.09	15.42
38	19.08	17.40
40	21.08	19.41



Recommended PCB Layout



Step-by-Step Design

- Determine desired board spacing
- Select receptacle and calculate stack height
Stack Height = Board Spacing - Receptacle Height
- Find the insertion depth from the chart below.
Calculate max./min. OAL
OAL = Stack Height + Tail + Insertion Depth
- Select the Pin Style with OAL between max. and min. values

RECEPTACLES

Height (mm)	4.50	2.30
Insertion Depth (max.)	4.30	2.20
Insertion Depth (min.)	3.00	1.30

Example:

- Application requires a board spacing of 12.5 mm
- Select the appropriate receptacle, in this case 4.5 mm height (SMT)
The Header Stack Height is 12.5 - 4.5 = 8.0 mm
- For 1.6 mm board application (TMT), the 2.5 Solder side is selected
OAL (max.) = 12.5 + 2.5 + 4.3 = 19.3
OAL (min.) = 12.5 + 2.5 + 3.0 = 18.0
- Select Pin Style 38 with OAL = 19.08 mm
- Part Number is 59112-G3810-080LF

Minitek™ VERTICAL RECEPTACLES 2.00 mm (.079")



- Two housing heights: 2.30 mm, 4.50 mm
- Dual-beam contact design for highly reliable electrical performance

TECHNICAL DATA

Physical

- Housing: High-temperature, black thermoplastic
- Flammability rating: UL 94 V-0
- Contact: Phosphor-bronze Beryllium-copper – 63453
- Plating: Gold over 1.27 μm (50 μ") nickel



Electrical Performance

- Current rating: 2 A
2 A – 63453
- Insulation resistance: 1000 MΩ min.
- Contact resistance: 20 mΩ
25 mΩ - 63453
- Dielectric withstanding voltage: 500 V
- Voltage rating: 200 V

Mechanical Performance

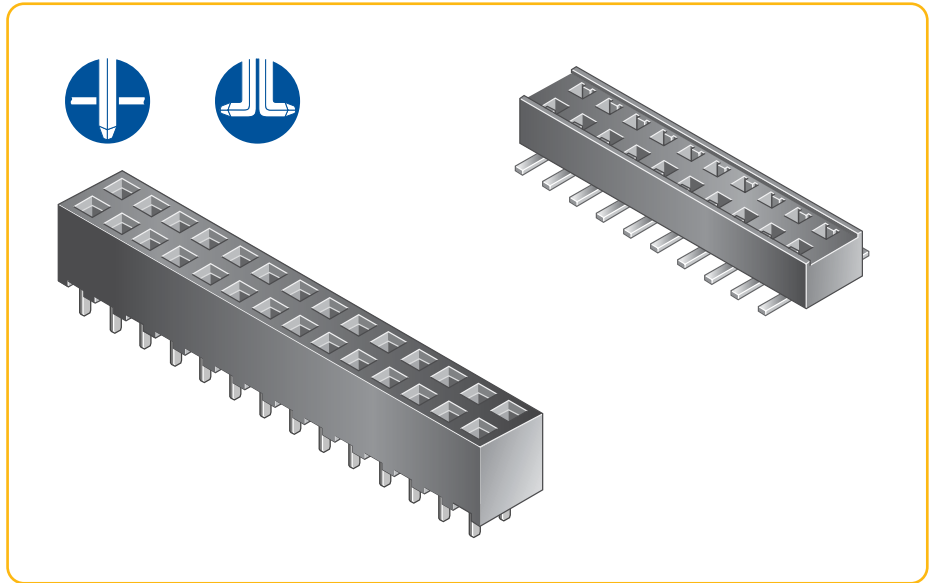
- Mating cycles (durability): 25
100 - 63453
- Contact retention to housing:
2.20 N (227 gf) min.
4.90 N (500 gf) min. – 63453
- Insertion force per contact:
1.80 N (184 gf) max.
1.95 N (200 gf) – 63453
- Withdrawal force per contact:
0.20 N (20 gf) min.

Operating Temperature Range

- 55°C to +125°C

Packaging

- Standard: TMT in Tubes
SMT in Tape-and-reel
- Optional: Tubes (SMT)



Reference Information

- File no. E66906
- File no. LR46923
- Product drawing:
by 5-digit base part number
- Product specification:
GS-12-008
DPS-12-011 - for 63453

Specifications subject to change without notice.

MATING DATA

- Minitek™
Unshrouded headers 54, 56, 58
- Minitek™ Shrouded headers 64, 66

INSERTION DEPTH

- 4.50 mm height:
3.00 mm min. to 4.30 mm max.
[provides .381 mm wipe]
- 2.30 mm height – Top Entry:
1.30 mm min. to 2.20 mm max.
[provides .381 mm wipe]
- 2.30 mm height – Bottom Entry:
1.40 mm min. to 2.20 mm max.
[provides .381 mm wipe]
plus board thickness

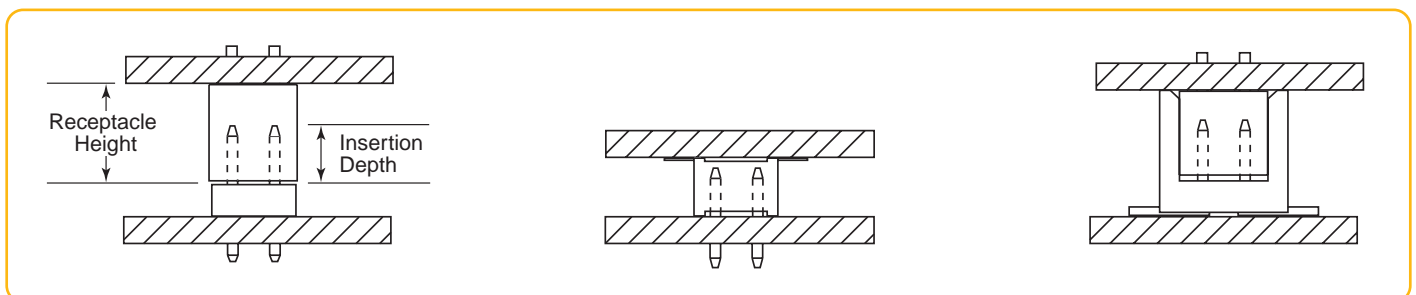
PROCESSING INFORMATION

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

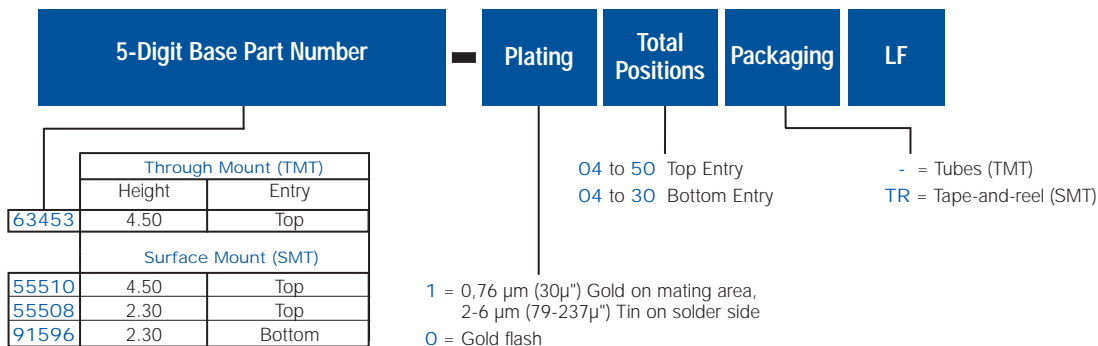
RoHs INFORMATION

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

TYPICAL APPLICATIONS



PART NUMBER



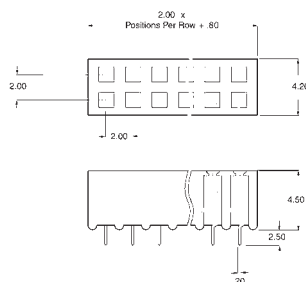
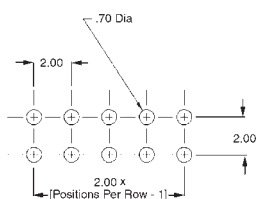
55510 - 1XXTRLF

CORE RANGE

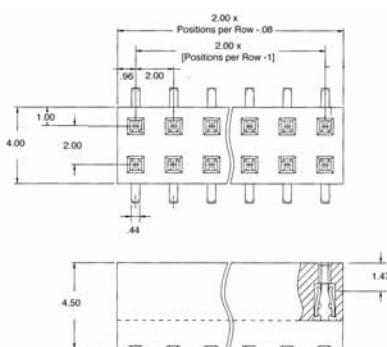
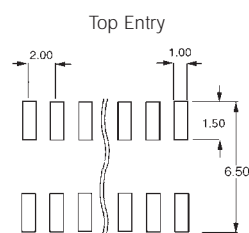
XX = 04, 06, 08, 10, 12, 16, 20

55510 - 1 Total Positions TRLF

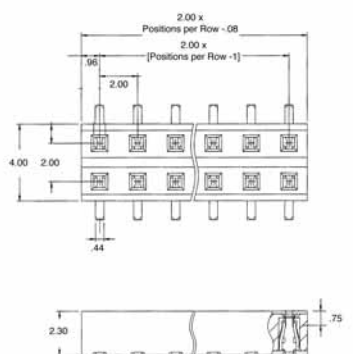
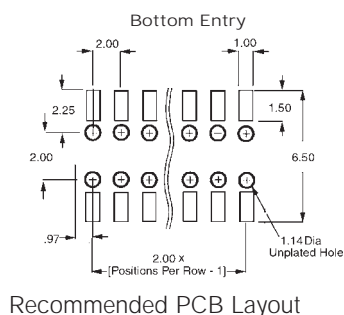
PRIORITY PART



P/N 63453



P/N 55510



P/N 55508

Dimensions in mm

2.00 mm (.079")



- Early entry, dual-beam contacts provide long wiping action for reliable electrical contact

TECHNICAL DATA

Physical

- Housing: Black thermoplastic
- Flammability rating: UL 94 V-0
- Contact: Phosphor-bronze
- Plating: Gold or tin-lead over 1.27 μm (50 μin) nickel

Electrical Performance

- Current rating: 1 A continuous
- Insulation resistance: 1000 M Ω min.
- Contact resistance: 25 m Ω max.
- Dielectric withstanding voltage: 650 V
- Voltage rating: 200 V

Mechanical Performance

- Mating cycles (durability): 50
- Insertion force per contact: 6.41 N (650 gf) max.
- Withdrawal force per contact: 0.49 N (50 gf) min.

Operating Temperature Range

- 40°C to +105°C

Packaging

- Bags

Reference Information

- File no. E66906
 - File no. LR46923
 - Product drawing: By 5-digit base part number
 - Product specification: DPS-12-012
- Specifications subject to change without notice.

MATING DATA

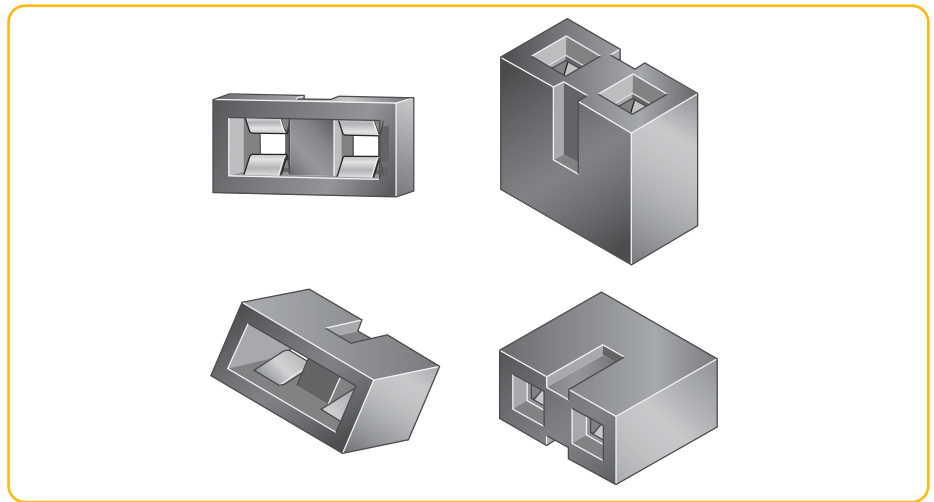
- Minitek™
Unshrouded headers 54, 56, 58
- Minitek™ Shrouded headers 64, 66

INSERTION DEPTH

- 2.24 mm min. [provides .381 mm wipe]

RoHS INFORMATION

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



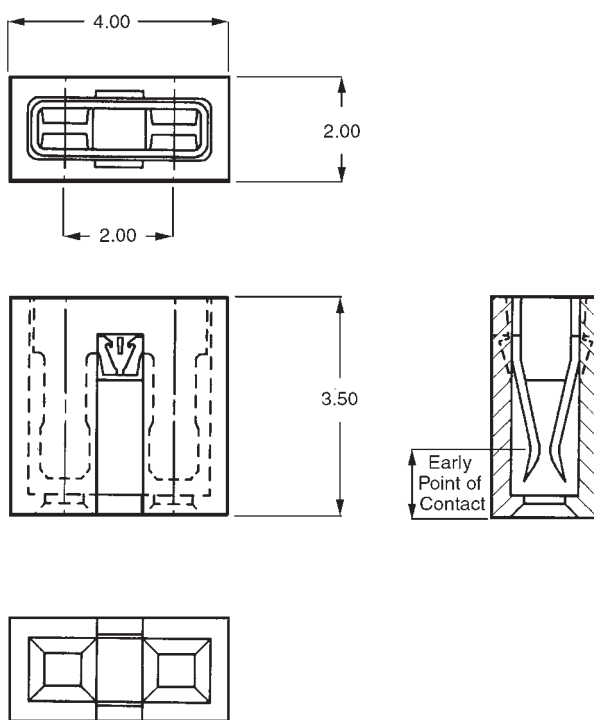
PART NUMBER



1 = 0,76 μm ($30\mu''$) Gold on mating area,
 2-6 μm ($79-237\mu''$) Tin on solder side
 0 = Gold flash

86730 - 101LF

CORE RANGE



Dimensions in mm

2.00 mm (.079")



- 4-wall design prevents mis-mating
- Selective plating
- Co-planarity 0.1 (SMT)

TECHNICAL DATA

Physical

- Housing: High temperature, cream-colored thermoplastic
- Flammability rating: UL 94 V-0
- Pin: Phosphor-bronze
- Plating: Gold over 1.27 μm (50 μin) nickel



Electrical Performance

- Current rating: 2 A continuous
- Insulation resistance: 1000 M Ω min.
- Contact resistance: 25 m Ω max.
- Dielectric withstanding voltage: 650 V
- Voltage rating: 200 V

Mechanical Performance

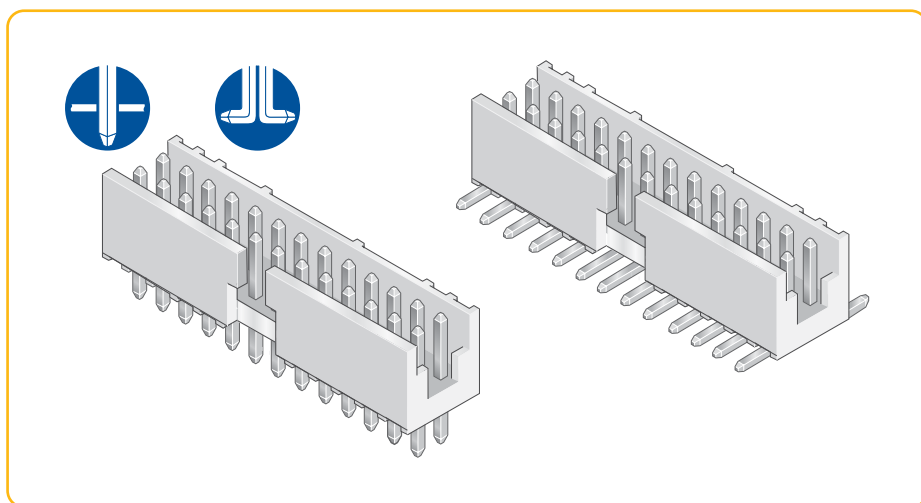
- Mating cycles (durability): 100

Operating Temperature Range

- 40°C to +125°C

Packaging

- Standard: TMT in Tubes (04 to 06 pos. packed in box)
SMT in Tape-and-reel
- Optional: SMT in Tubes (04 and 06 in box)



Reference Information

- File no. E66906
 - File no. LR46923
 - Product drawing: 98414 or 98424
 - Product specification: DPS-12-011 and GS-12-163
 - Tape and Reel packaging data TA-884
- Specifications subject to change without notice.

MATING DATA

- Minitek™ ctw contacts and housings 68
- Minitek™ Vertical receptacles 60
- Minitek™ Shunts 62
- Minitek™ IDC receptacles 70

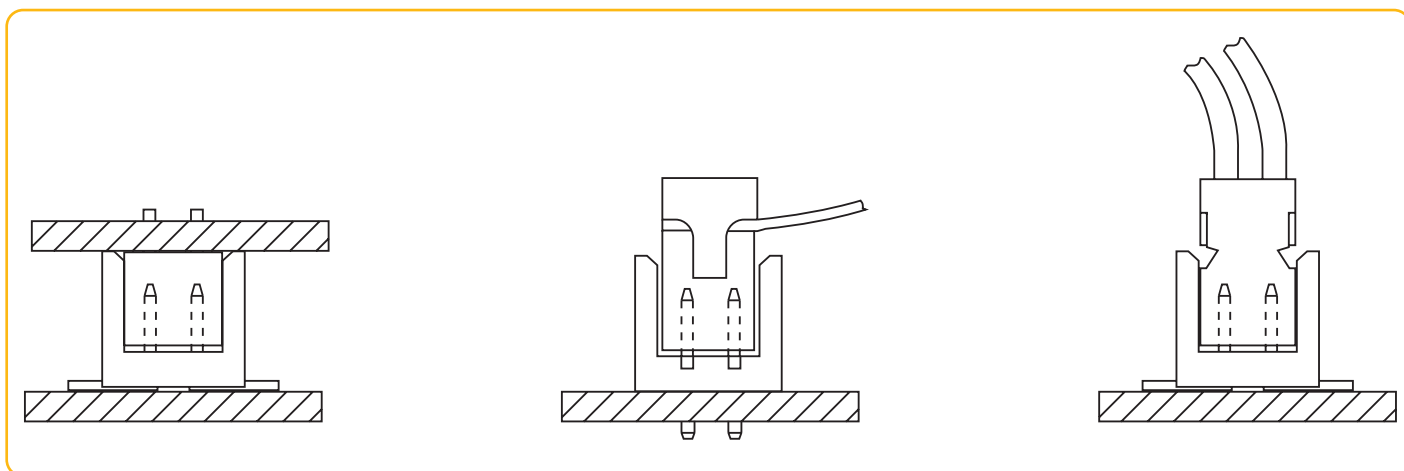
PROCESSING INFORMATION

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

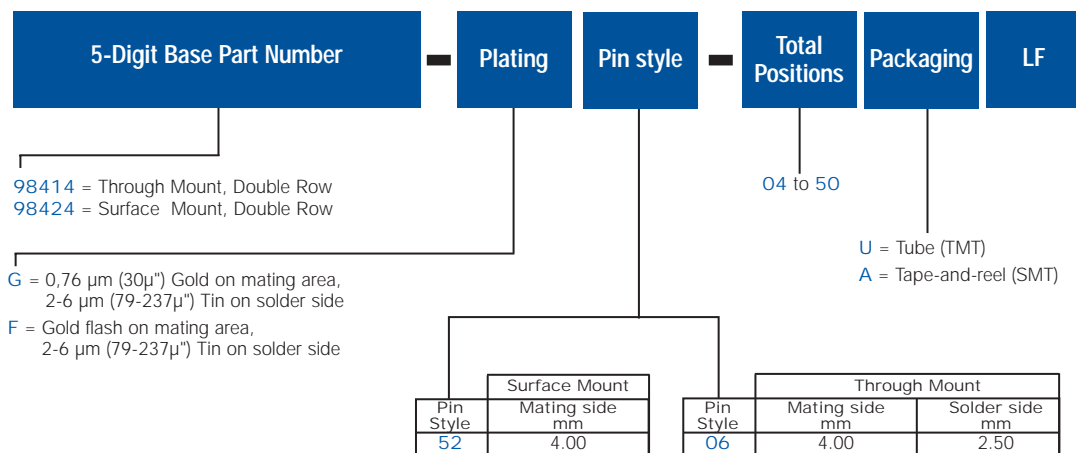
RoHs INFORMATION

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

TYPICAL APPLICATIONS



PART NUMBER



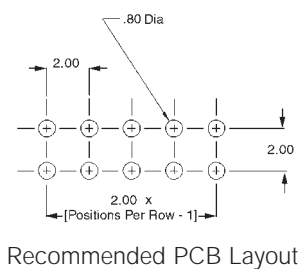
98424 - G 52 - XX ALF

XX = 04, 06, 08, 10, 12, 16, 20

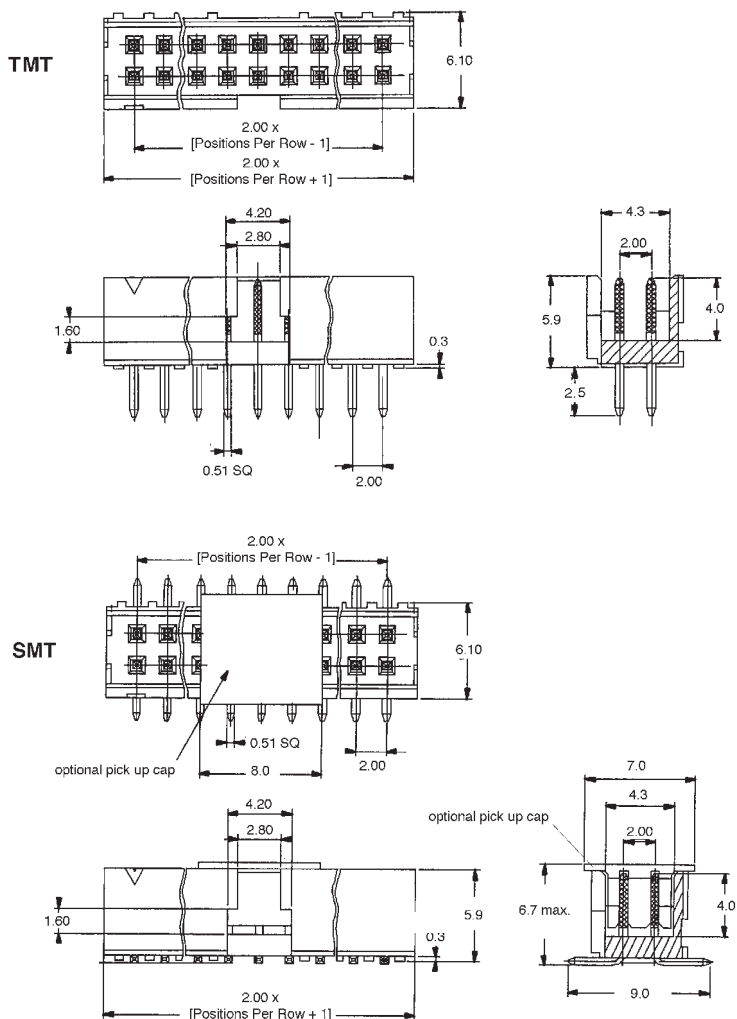
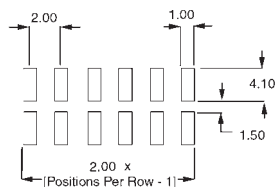
CORE RANGE

98424 - G 52 - Total Positions ALF

PRIORITY PART



Recommended PCB Layout

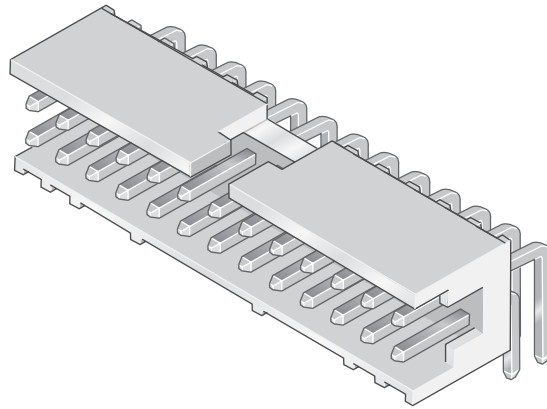


Dimensions in mm

Minitek™ SHROUDED RIGHT ANGLE HEADERS 2.00 mm (.079")



- 4-wall design prevents mis-mating
- Selective plating



TECHNICAL DATA

Physical

- Housing: High-temperature, cream-colored thermoplastic
- Flammability rating: UL 94 V-0
- Pin: Phosphor-bronze
- Plating: Gold over 1.27 μm (50 μin) nickel

Electrical Performance

- Current rating: 2 A continuous
- Insulation resistance: 1000 M Ω min.
- Contact resistance: 25 m Ω max.
- Dielectric withstanding voltage: 650 V
- Voltage rating: 200 V

Mechanical Performance

- Mating cycles (durability): 100

Operating Temperature Range

- 40°C to +125°C

Packaging

- Standard: Tubes
(04 to 06 pos. packed in box)

Reference Information

- File no. E66906
- File no. LR46923
- Product drawing: 98464
- Product specification: DPS-12-011 and GS-12-163

Specifications subject to change without notice.

MATING DATA

- Minitek™ ctw contacts and housings 68
- Minitek™ Vertical receptacles 60
- Minitek™ Shunts 62
- Minitek™ IDC receptacles 70

PROCESSING INFORMATION

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

RoHs INFORMATION

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

TYPICAL APPLICATIONS



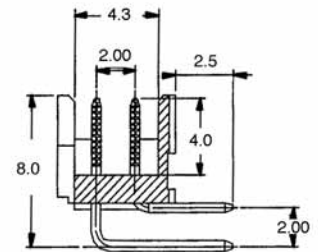
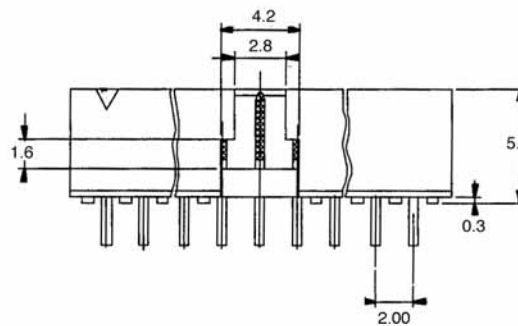
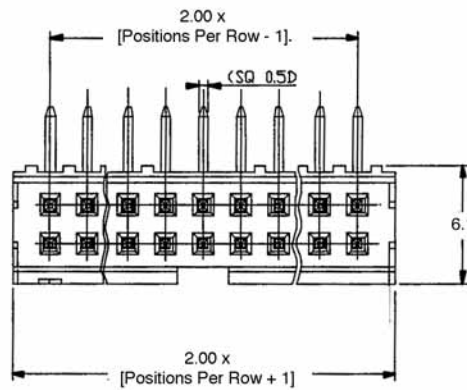
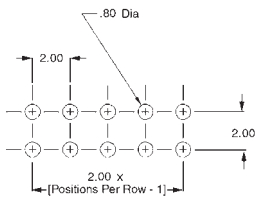
2.00 mm (.079")

PART NUMBER



04 to 50 (Double Row)

G = 0,76 μm (30 μm) Gold on mating area,
2-6 μm (79-237 μm) Tin on solder side
F = Gold flash on mating area,
2-6 μm (79-237 μm) Tin on solder side



Dimensions in mm

2.00 mm (.079")



- Dual-beam contact design for highly reliable electrical performance
- Latching key assures proper alignment and friction retention

TECHNICAL DATA

Physical

- Housing: Black thermoplastic
- Flammability rating: UL 94 V-0
- Contact: Phosphor-bronze
- Plating: Gold over 1.27 μm (50 μ") nickel



Electrical Performance

- Current rating: 2 A continuous
- Insulation resistance: 1000 MΩ min.
- Contact resistance: 20 mΩ max.
- Dielectric withstanding voltage: 650 V
- Voltage rating: 200 V

Mechanical Performance

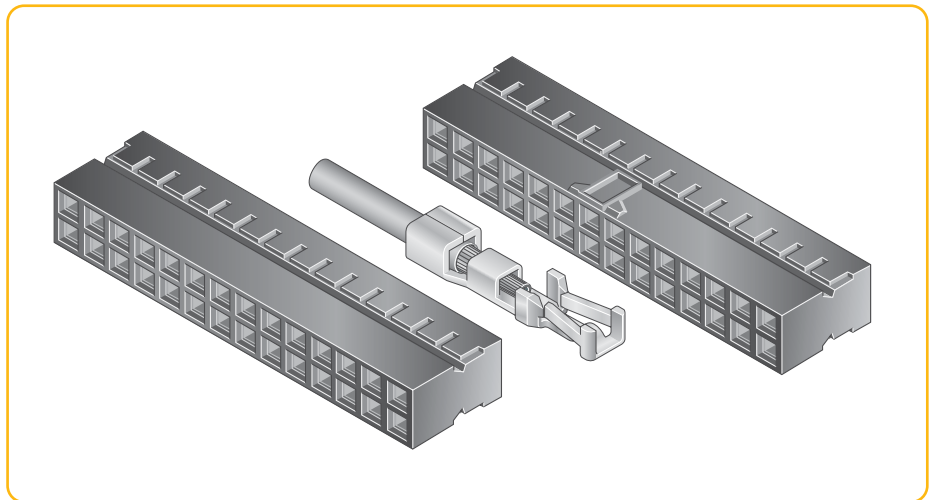
- Mating cycles (durability): 100
- Contact retention to housing: 7.83 N (800 gf) min.
- Mating force per contact: 1.77 N (180 gf) max.
- Unmating force per contact: 0.20 N (20 gf) min.

Operating Temperature Range

- 40°C to +105°C

Packaging

- Reels – Contacts
- Bags – Housings



Reference Information

- File no. E66906
- File no. LR46923
- Product drawing: 77138 or 77139 – Contact; 69307, 90311 – Housing
- Product specification: 110-036
- Application specification: 100-006, TA-959

Specifications subject to change without notice.

INSERTION DEPTH

- 2.40 mm min. to 3.30 mm max. [provides .381 mm wipe]
- 3.63 mm min. to 4.00 mm max. [provides .381 mm wipe in housing]

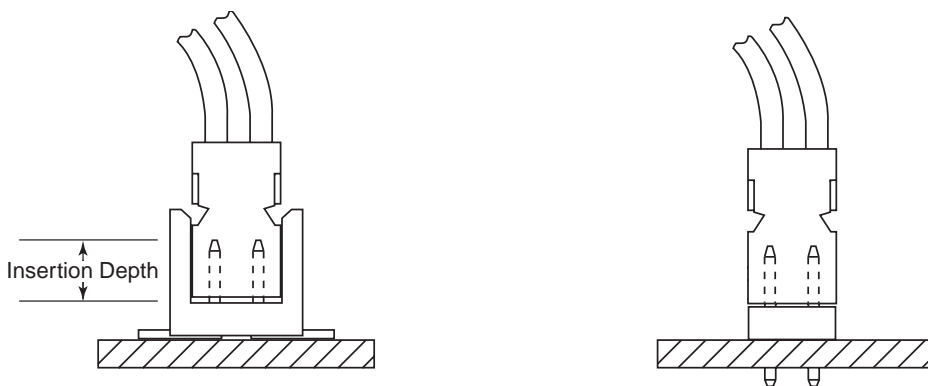
RoHS INFORMATION

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

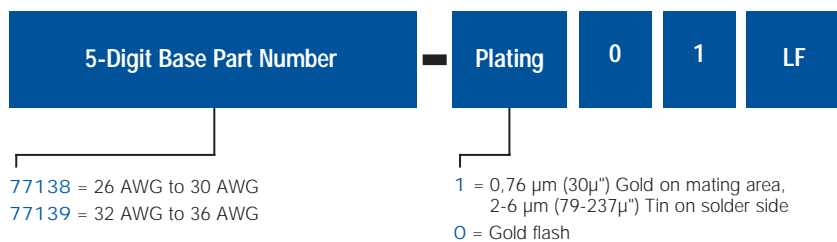
MATING DATA

- Minitek™ Unshrouded headers 54, 56, 58
- Minitek™ Shrouded headers 64, 66

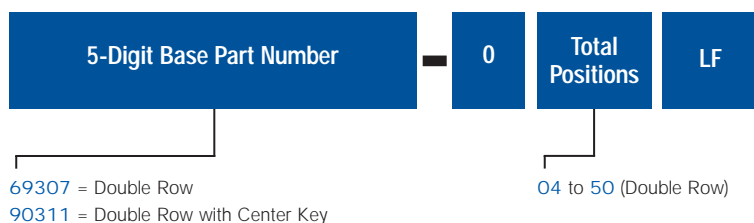
TYPICAL APPLICATIONS



PART NUMBER



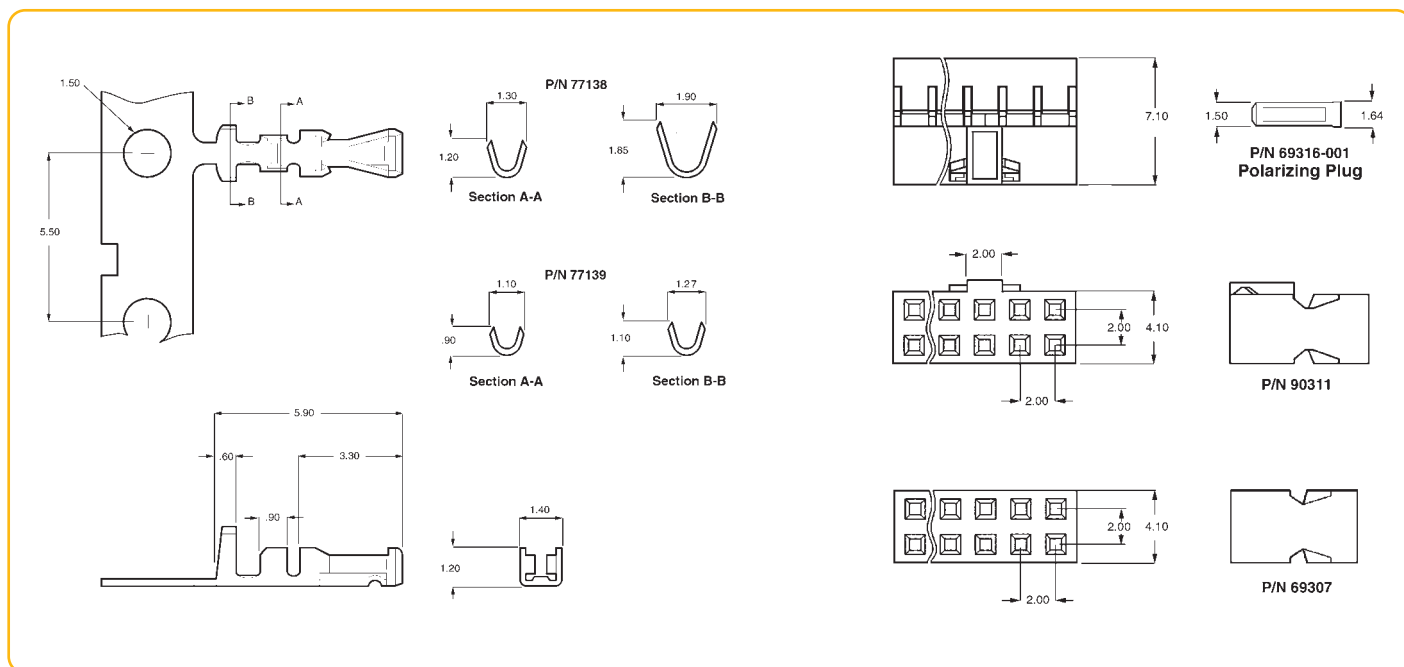
Housings



77138	-	101LF	CORE RANGE
90311	-	0XXLF	

XX = 04, 06, 08, 10, 12, 16, 20

90311	-	0 Total Positions LF	PRIORITY PART
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Dimensions in mm

2.00 mm (.079")



- Early entry, single-beam contacts provide long wiping action for reliable electrical contact
- Center key polarization and friction latch options

TECHNICAL DATA

Physical

- Housing: Black thermoplastic
- Flammability rating: UL 94 V-0
- Contact: Phosphor-bronze
- Plating: Gold over 1.27 μm (50 μin) nickel



Electrical Performance

- Current rating: 1 A continuous
- Insulation resistance: 1000 M Ω min.
- Contact resistance: 30 m Ω max.
- Dielectric withstanding voltage: 650 V

Mechanical Performance

- Mating cycles (durability): 100

Operating Temperature Range

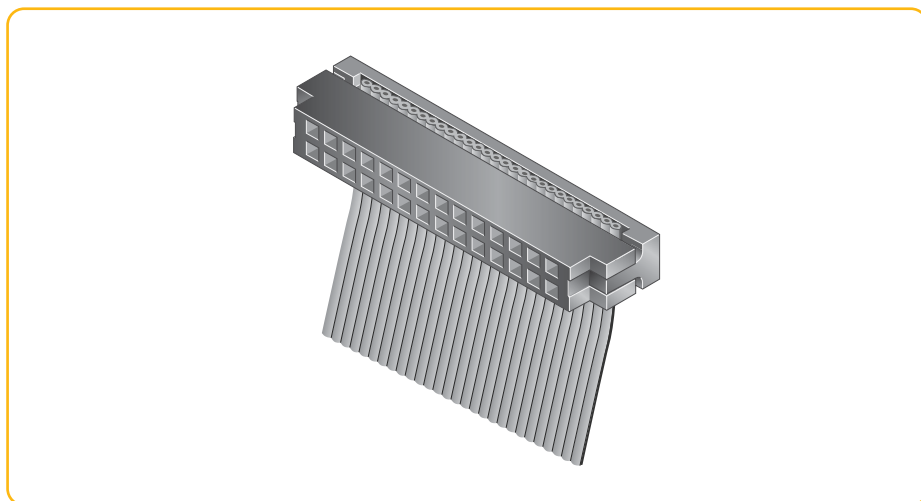
- 40°C to +105°C

Packaging

- Tubes

Reference Information

- File no. E66906
 - File no. LR46923
 - Product drawing: 89947 or 89361
 - Product specification: BUS-12-115
- Specifications subject to change without notice.



MATING DATA

- Minitek™ Unshrouded headers 54, 56, 58
- Minitek™ Shrouded headers 64, 66

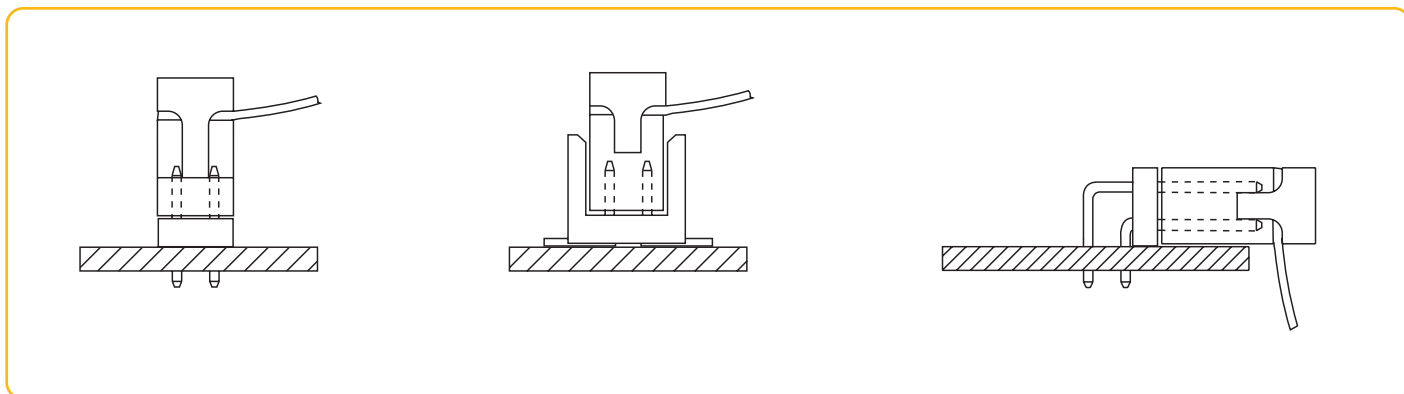
INSERTION DEPTH

- 2.55 mm min. to 4.57 mm max.
[provides .381 mm wipe]

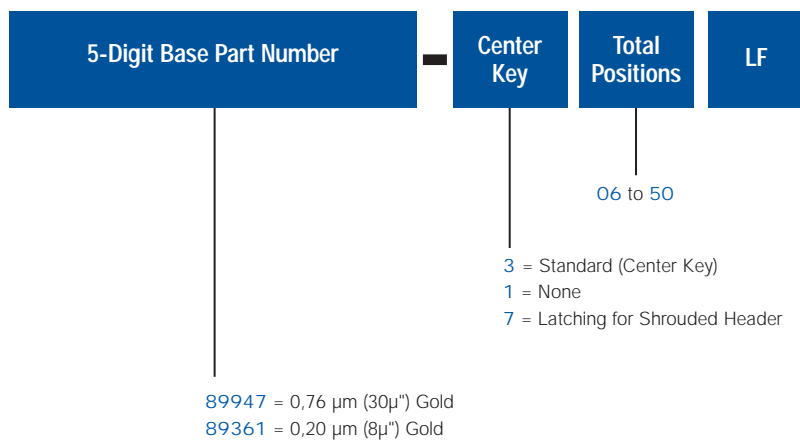
RoHS INFORMATION

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

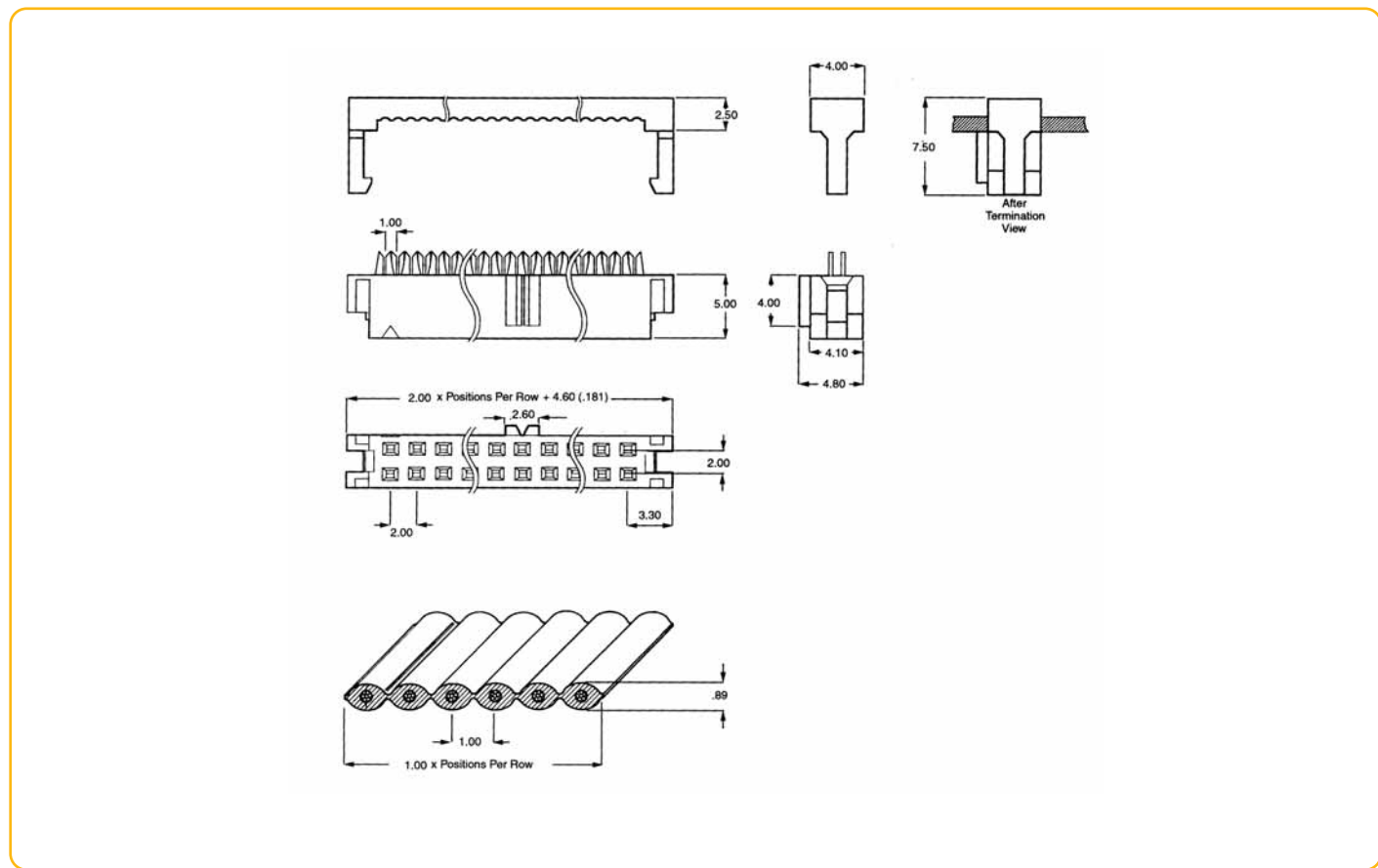
TYPICAL APPLICATIONS



PART NUMBER



89361 - 3XXLF **PRIORITY PART**
XX = 06 - 20



Dimensions in mm

2.00 mm (.079")