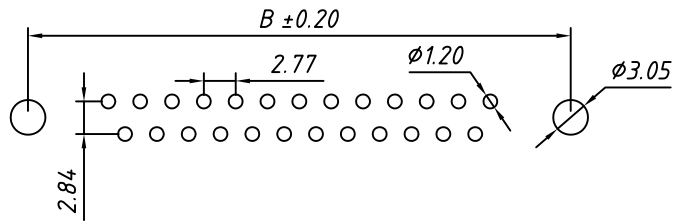
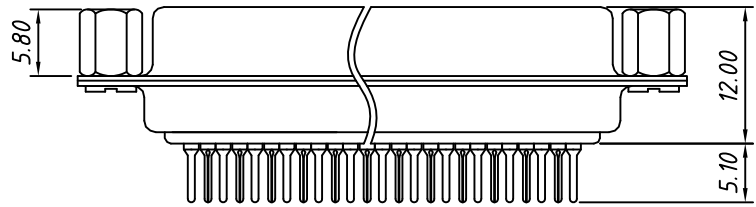
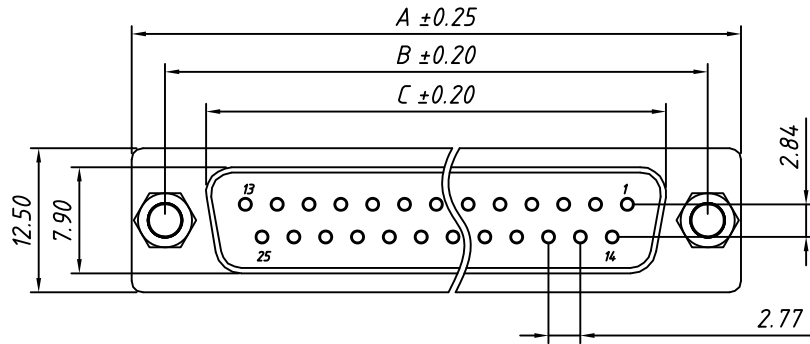


1 RoHS Compliant

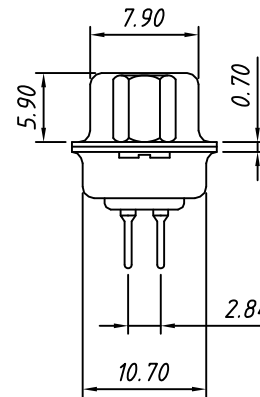


**RECOMMENDED PCB LAYOUT**  
TOLERANCE: ±0.05mm

**Material:**  
Housing: PBT+30% Glass filled, UL94V-0  
Contacts: Brass, Gold Plating or Gold Plating on Contact Area, Tin on Solder Tail.  
Shell: Steel, Nickel Plating

**Electrical Characteristics:**  
Current Rating: 5 AMP  
Insulator Resistance: 1000MΩ Min. at DC 500V  
Withstanding Voltage: 500V AC (rms) for 1 minute  
Contact Resistance: 20mΩ Max. Initial  
Operating Temperature: -40°C ~ +105°C

| Call waiting force |           |          |
|--------------------|-----------|----------|
| Contacts           | Insertion | Withdraw |
| 09M/09F            | ≤4.0kgf   | ≥1.8kgf  |
| 15M/15F            | ≤4.5kgf   | ≥2.0kgf  |
| 25M/25F            | ≤6.0kgf   | ≥2.5kgf  |
| 37M/37F            | ≤8.0kgf   | ≥3.5kgf  |



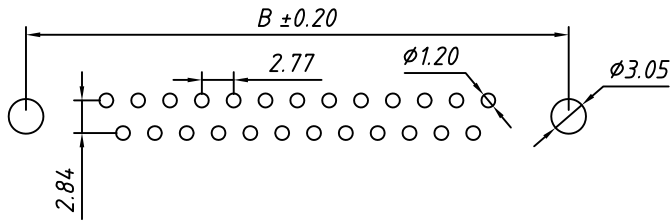
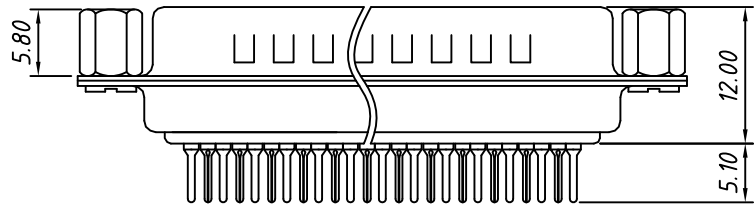
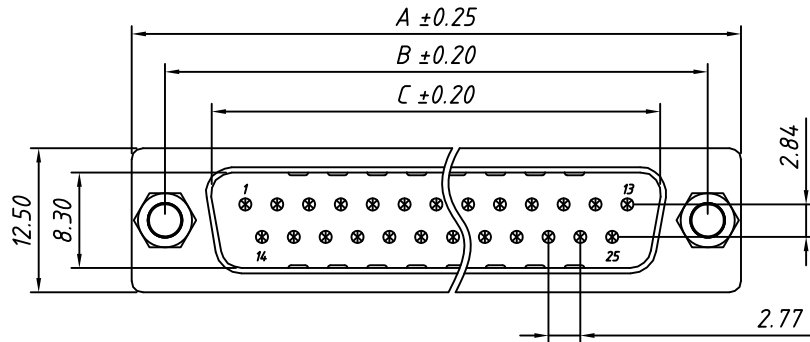
**Order Information**

**L - KLS1 - 221A - XX - F - L**  
 RoHS \_\_\_\_\_  
 D-SUB Connector, \_\_\_\_\_  
 2 Row Through Hole, Riveting Before \_\_\_\_\_  
 XX-No. of 09, 15, 25, 37, 50 pins \_\_\_\_\_  
 Connector type: F-Female \_\_\_\_\_  
 Housing Color: \_\_\_\_\_  
 B-Black L-Blue W-White

| Number of Contacts | DIMENSION |        |        |
|--------------------|-----------|--------|--------|
|                    | A±0.25    | B±0.20 | C±0.20 |
| 09                 | 30.81     | 24.99  | 16.33  |
| 15                 | 39.14     | 33.32  | 24.66  |
| 25                 | 53.04     | 47.04  | 38.38  |
| 37                 | 69.32     | 63.50  | 54.84  |

| GENERAL TOLERANCE | PROJECTION |            | Description:  |
|-------------------|------------|------------|---|
| X. ±0.30          | UNITS      | mm         | D-SUB Connector,<br>Through Hole, Female, Riveting Before |
| .X ±0.25          | SCALE      | 1:1        |   |
| .XX ±0.20         | Draw by:   | Daniel     | KLS P/N: L-KLS1-221A-XX-F-L                               |
| ANGLE TOLERANCE   | Check by:  | Daniel     | NingBo KLS ELECTRONIC CO., L TD.                          |
| X. ±3°            | Date       | 2018-03-01 |   |
| .X ±2°            | SHEET      | 1 OF 1     |   |
| .XX ±1°           |            |            |   |

1 RoHS Compliant

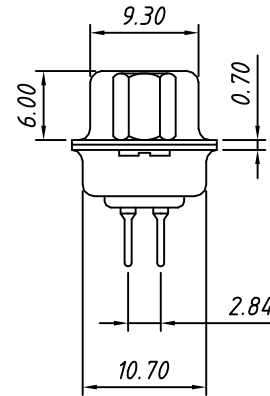


RECOMMENDED PCB LAYOUT  
TOLERANCE:  $\pm 0.05\text{mm}$

Material:  
Housing: PBT+30% Glass filled, UL94V-0  
Contacts: Brass, Gold Plating or Gold Plating on Contact Area, Tin on Solder Tail.  
Shell: Steel, Nickel Plating

Electrical Characteristics:  
Current Rating: 5 AMP  
Insulator Resistance: 1000M $\Omega$  Min. at DC 500V  
Withstanding Voltage: 500V AC (rms) for 1 minute  
Contact Resistance: 20m $\Omega$  Max. Initial  
Operating Temperature:  $-40^{\circ}\text{C} \sim +105^{\circ}\text{C}$

| Call waiting force |                      |                      |
|--------------------|----------------------|----------------------|
| Contacts           | Insertion            | Withdraw             |
| 09M/09F            | $\leq 4.0\text{kgf}$ | $\geq 1.8\text{kgf}$ |
| 15M/15F            | $\leq 4.5\text{kgf}$ | $\geq 2.0\text{kgf}$ |
| 25M/25F            | $\leq 6.0\text{kgf}$ | $\geq 2.5\text{kgf}$ |
| 37M/37F            | $\leq 8.0\text{kgf}$ | $\geq 3.5\text{kgf}$ |



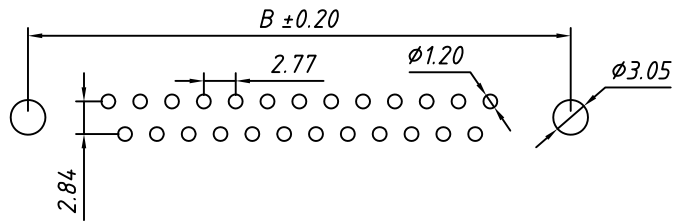
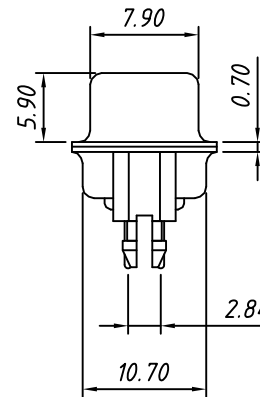
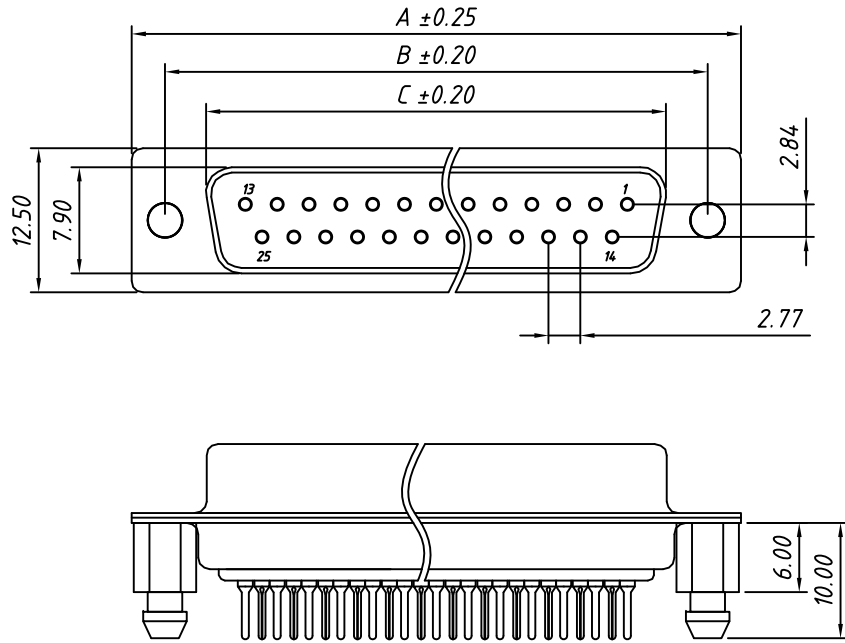
Order Information

L - KLS1 - 221A - XX - M - L  
RoHS \_\_\_\_\_  
D-SUB Connector, \_\_\_\_\_  
2 Row Through Hole, Riveting Before \_\_\_\_\_  
XX-No. of 09, 15, 25, 37, 50 pins \_\_\_\_\_  
Connector type: M-Male \_\_\_\_\_  
Housing Color: \_\_\_\_\_  
B-Black L-Blue W-White

| Number of Contacts | DIMENSION    |              |              |
|--------------------|--------------|--------------|--------------|
|                    | A $\pm 0.25$ | B $\pm 0.20$ | C $\pm 0.20$ |
| 09                 | 30.81        | 24.99        | 16.92        |
| 15                 | 39.14        | 33.32        | 25.25        |
| 25                 | 53.04        | 47.04        | 38.96        |
| 37                 | 69.32        | 63.50        | 55.42        |

| GENERAL TOLERANCE   | PROJECTION |            | Description:  |
|---------------------|------------|------------|---|
| X. $\pm 0.30$       | UNITS      | mm         | D-SUB Connector,<br>Through Hole, Male, Riveting Before |
| .X $\pm 0.25$       | SCALE      | 1:1        |   |
| .XX $\pm 0.20$      | Draw by:   | Daniel     | KLS P/N: L-KLS1-221A-XX-M-L                             |
| ANGLE TOLERANCE     | Check by:  | Daniel     | NingBo KLS ELECTRONIC CO., L TD.                        |
| X. $\pm 3^{\circ}$  | Date       | 2018-03-01 |   |
| .X $\pm 2^{\circ}$  | SHEET      | 1 OF 1     |   |
| .XX $\pm 1^{\circ}$ |            |            |   |

1 RoHS Compliant



**RECOMMENDED PCB LAYOUT**  
TOLERANCE:  $\pm 0.05\text{mm}$

**Material:**  
Housing: PBT+30% Glass filled, UL94V-0  
Contacts: Brass, Gold Plating or Gold Plating on Contact Area, Tin on Solder Tail.  
Shell: Steel, Nickel Plating

**Electrical Characteristics:**  
Current Rating: 5 AMP  
Insulator Resistance: 1000M $\Omega$  Min. at DC 500V  
Withstanding Voltage: 500V AC (rms) for 1 minute  
Contact Resistance: 20m $\Omega$  Max. Initial  
Operating Temperature:  $-40^{\circ}\text{C} \sim +105^{\circ}\text{C}$

| Call waiting force |                      |                      |
|--------------------|----------------------|----------------------|
| Contacts           | Insertion            | Withdraw             |
| 09M/09F            | $\leq 4.0\text{kgf}$ | $\geq 1.8\text{kgf}$ |
| 15M/15F            | $\leq 4.5\text{kgf}$ | $\geq 2.0\text{kgf}$ |
| 25M/25F            | $\leq 6.0\text{kgf}$ | $\geq 2.5\text{kgf}$ |
| 37M/37F            | $\leq 8.0\text{kgf}$ | $\geq 3.5\text{kgf}$ |

**Order Information**

L - KLS1 - 221B - XX - F - L

RoHS \_\_\_\_\_

D-SUB Connector, \_\_\_\_\_

2 Row Through Hole, Riveting Later Harpoons \_\_\_\_\_

XX-No. of 09, 15, 25, 37, 50 pins \_\_\_\_\_

Connector type: F-Female \_\_\_\_\_

Housing Color: \_\_\_\_\_

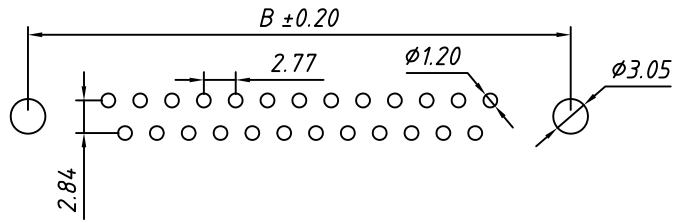
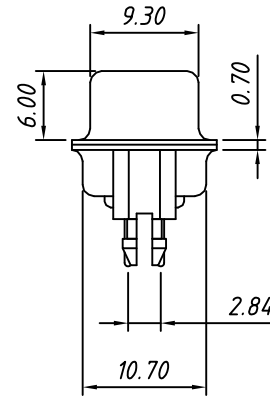
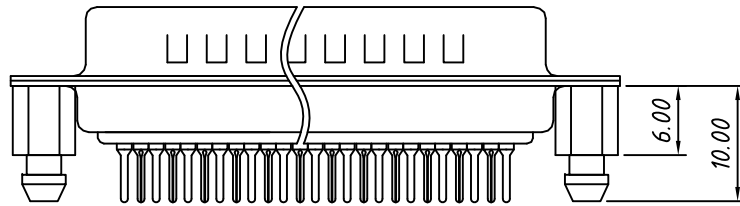
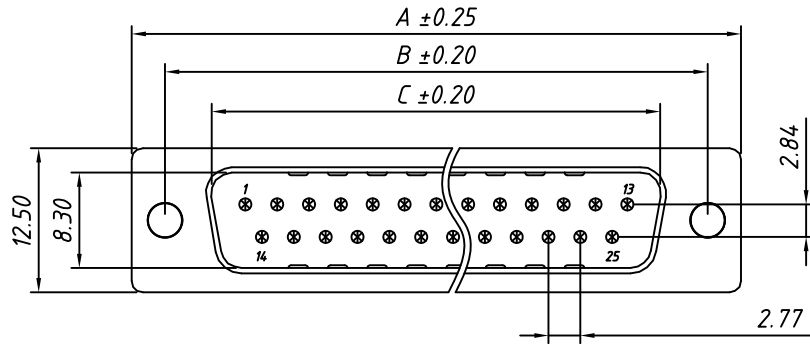
B-Black L-Blue W-White

| Number of Contacts | DIMENSION    |              |              |
|--------------------|--------------|--------------|--------------|
|                    | A $\pm 0.25$ | B $\pm 0.20$ | C $\pm 0.20$ |
| 09                 | 30.81        | 24.99        | 16.33        |
| 15                 | 39.14        | 33.32        | 24.66        |
| 25                 | 53.04        | 47.04        | 38.38        |
| 37                 | 69.32        | 63.50        | 54.84        |

| GENERAL TOLERANCE   | PROJECTION |            | Description:   |
|---------------------|------------|------------|--|
| X. $\pm 0.30$       | UNITS      | mm         | D-SUB Connector, Through Hole, Female, Riveting Later Harpoons |
| .X $\pm 0.25$       | SCALE      | 1:1        |  |
| .XX $\pm 0.20$      | Draw by:   | Daniel     | KLS P/N: L-KLS1-221B-XX-F-L                                    |
| ANGLE TOLERANCE     | Check by:  | Daniel     |  |
| X. $\pm 3^{\circ}$  | Date       | 2018-03-01 |  |
| .X $\pm 2^{\circ}$  | SHEET      | 1 OF 1     |  |
| .XX $\pm 1^{\circ}$ |            |            |  |

NingBo KLS ELECTRONIC CO., L TD.

1 RoHS Compliant



**RECOMMENDED PCB LAYOUT**  
TOLERANCE: ±0.05mm

**Material:**  
Housing: PBT+30% Glass filled, UL94V-0  
Contacts: Brass, Gold Plating or Gold Plating on Contact Area, Tin on Solder Tail.  
Shell: Steel, Nickel Plating

**Electrical Characteristics:**  
Current Rating: 5 AMP  
Insulator Resistance: 1000MΩ Min. at DC 500V  
Withstanding Voltage: 500V AC (rms) for 1 minute  
Contact Resistance: 20mΩ Max. Initial  
Operating Temperature: -40°C ~ +105°C

| Call waiting force |           |          |
|--------------------|-----------|----------|
| Contacts           | Insertion | Withdraw |
| 09M/09F            | ≤4.0kgf   | ≥1.8kgf  |
| 15M/15F            | ≤4.5kgf   | ≥2.0kgf  |
| 25M/25F            | ≤6.0kgf   | ≥2.5kgf  |
| 37M/37F            | ≤8.0kgf   | ≥3.5kgf  |

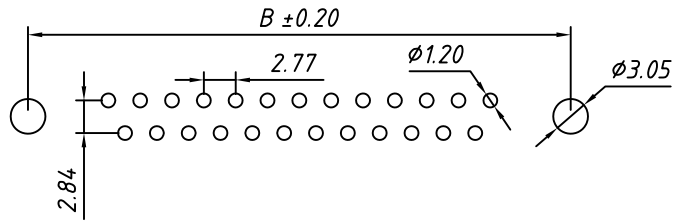
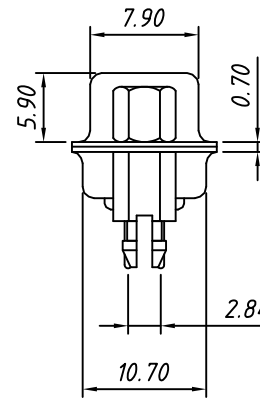
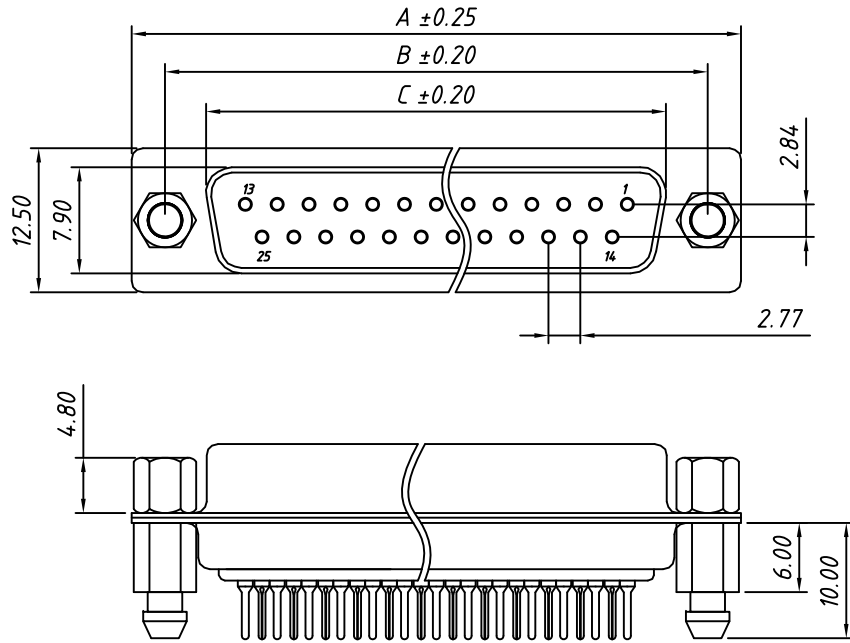
**Order Information**

L - KLS1 - 221B - XX - M - L  
 RoHS \_\_\_\_\_  
 D-SUB Connector, \_\_\_\_\_  
 2 Row Through Hole, Riveting Later Harpoons  
 XX-No. of 09, 15, 25, 37, 50 pins \_\_\_\_\_  
 Connector type: M-Male \_\_\_\_\_  
 Housing Color: \_\_\_\_\_  
 B-Black L-Blue W-White

| Number of Contacts | DIMENSION |        |        |
|--------------------|-----------|--------|--------|
|                    | A±0.25    | B±0.20 | C±0.20 |
| 09                 | 30.81     | 24.99  | 16.92  |
| 15                 | 39.14     | 33.32  | 25.25  |
| 25                 | 53.04     | 47.04  | 38.96  |
| 37                 | 69.32     | 63.50  | 55.42  |

| GENERAL TOLERANCE | PROJECTION |            | Description:   |
|-------------------|------------|------------|--|
| X. ±0.30          | UNITS      | mm         | D-SUB Connector, Through Hole, Male, Riveting Later Harpoons |
| .X ±0.25          | SCALE      | 1:1        |  |
| .XX ±0.20         | Draw by:   | Daniel     | KLS P/N: L-KLS1-221B-XX-M-L                                  |
| ANGLE TOLERANCE   | Check by:  | Daniel     | NingBo KLS ELECTRONIC CO., L TD.                             |
| X. ±3°            | Date       | 2018-03-01 |  |
| .X ±2°            | SHEET      | 1 OF 1     |  |
| .XX ±1°           |            |            |  |

1 RoHS Compliant



**RECOMMENDED PCB LAYOUT**  
TOLERANCE:  $\pm 0.05\text{mm}$

**Material:**  
Housing: PBT+30% Glass filled, UL94V-0  
Contacts: Brass, Gold Plating or Gold Plating on Contact Area, Tin on Solder Tail.  
Shell: Steel, Nickel Plating

**Electrical Characteristics:**  
Current Rating: 5 AMP  
Insulator Resistance: 1000M $\Omega$  Min. at DC 500V  
Withstanding Voltage: 500V AC (rms) for 1 minute  
Contact Resistance: 20m $\Omega$  Max. Initial  
Operating Temperature:  $-40^{\circ}\text{C} \sim +105^{\circ}\text{C}$

| Call waiting force |                      |                      |
|--------------------|----------------------|----------------------|
| Contacts           | Insertion            | Withdraw             |
| 09M/09F            | $\leq 4.0\text{kgf}$ | $\geq 1.8\text{kgf}$ |
| 15M/15F            | $\leq 4.5\text{kgf}$ | $\geq 2.0\text{kgf}$ |
| 25M/25F            | $\leq 6.0\text{kgf}$ | $\geq 2.5\text{kgf}$ |
| 37M/37F            | $\leq 8.0\text{kgf}$ | $\geq 3.5\text{kgf}$ |

**Order Information**

L - KLS1 - 221C - XX - F - L

RoHS

D-SUB Connector, 2 Row Through Hole, After Lock Screw Rivet Harpoons

XX-No. of 09, 15, 25, 37, 50 pins

Connector type: F-Female

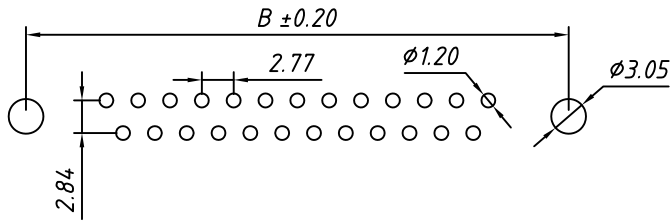
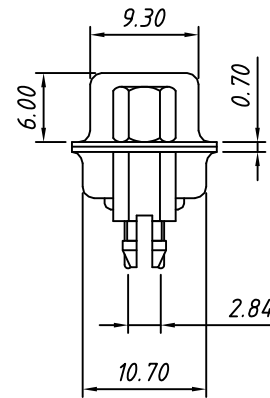
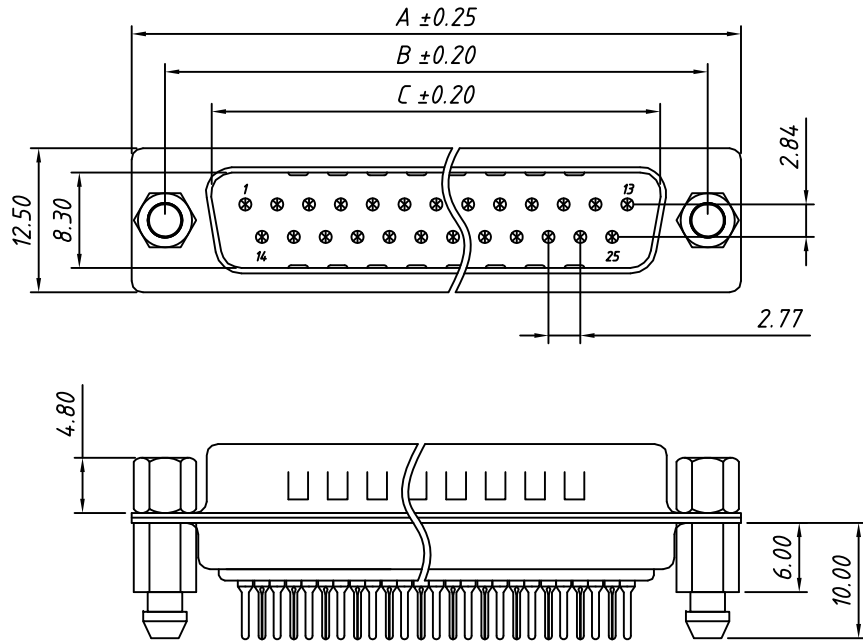
Housing Color: B-Black L-Blue W-White

| Number of Contacts | DIMENSION    |              |              |
|--------------------|--------------|--------------|--------------|
|                    | A $\pm 0.25$ | B $\pm 0.20$ | C $\pm 0.20$ |
| 09                 | 30.81        | 24.99        | 16.33        |
| 15                 | 39.14        | 33.32        | 24.66        |
| 25                 | 53.04        | 47.04        | 38.38        |
| 37                 | 69.32        | 63.50        | 54.84        |

| GENERAL TOLERANCE   | PROJECTION |            | Description:   |
|---------------------|------------|------------|--|
| X. $\pm 0.30$       | UNITS      | mm         | D-SUB Connector, Through Hole, Female, After Lock Screw Rivet Harpoons |
| .X $\pm 0.25$       | SCALE      | 1:1        |  |
| .XX $\pm 0.20$      | Draw by:   | Daniel     |  |
| ANGLE TOLERANCE     | Check by:  | Daniel     | KLS P/N: L-KLS1-221C-XX-F-L  |
| X. $\pm 3^{\circ}$  | Date       | 2018-03-01 |  |
| .X $\pm 2^{\circ}$  | SHEET      | 1 OF 1     |  |
| .XX $\pm 1^{\circ}$ |            |            |  |

NingBo KLS ELECTRONIC CO., L TD.

1 RoHS Compliant



**RECOMMENDED PCB LAYOUT**  
TOLERANCE: ±0.05mm

**Material:**  
Housing: PBT+30% Glass filled, UL94V-0  
Contacts: Brass, Gold Plating or Gold Plating on Contact Area, Tin on Solder Tail  
Shell: Steel, Nickel Plating

**Electrical Characteristics:**  
Current Rating: 5 AMP  
Insulator Resistance: 1000MΩ Min. at DC 500V  
Withstanding Voltage: 500V AC (rms) for 1 minute  
Contact Resistance: 20mΩ Max. Initial  
Operating Temperature: -40°C ~ +105°C

| Call waiting force |           |          |
|--------------------|-----------|----------|
| Contacts           | Insertion | Withdraw |
| 09M/09F            | ≤4.0kgf   | ≥1.8kgf  |
| 15M/15F            | ≤4.5kgf   | ≥2.0kgf  |
| 25M/25F            | ≤6.0kgf   | ≥2.5kgf  |
| 37M/37F            | ≤8.0kgf   | ≥3.5kgf  |

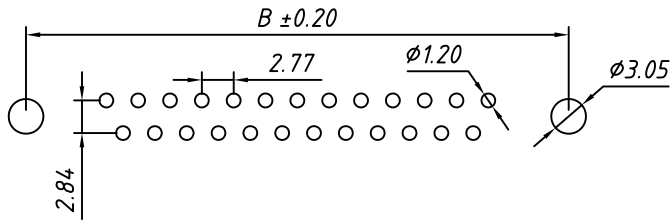
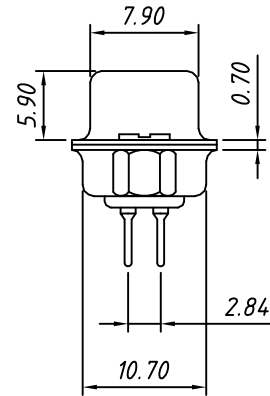
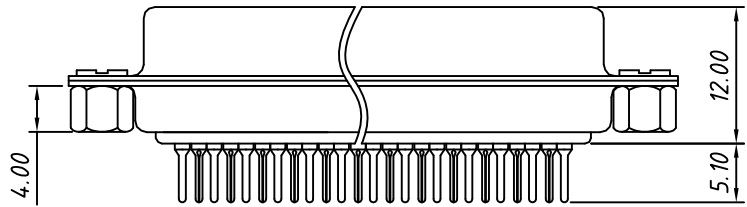
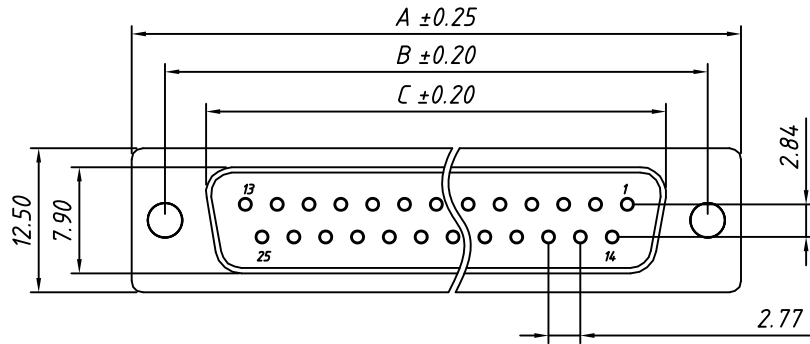
**Order Information**

L - KLS1 - 221C - XX - M - L  
 RoHS \_\_\_\_\_  
 D-SUB Connector, \_\_\_\_\_  
 2 Row Through Hole, After Lock Screw Rivet Harpoons  
 XX-No. of 09, 15, 25, 37, 50 pins \_\_\_\_\_  
 Connector type: M-Male \_\_\_\_\_  
 Housing Color: \_\_\_\_\_  
 B-Black L-Blue W-White

| Number of Contacts | DIMENSION |        |        |
|--------------------|-----------|--------|--------|
|                    | A±0.25    | B±0.20 | C±0.20 |
| 09                 | 30.81     | 24.99  | 16.92  |
| 15                 | 39.14     | 33.32  | 25.25  |
| 25                 | 53.04     | 47.04  | 38.96  |
| 37                 | 69.32     | 63.50  | 55.42  |

| GENERAL TOLERANCE | PROJECTION |            | Description:   |
|-------------------|------------|------------|--|
| X. ±0.30          | UNITS      | mm         | D-SUB Connector, Through Hole, Male, After Lock Screw Rivet Harpoons |
| .X ±0.25          | SCALE      | 1:1        |  |
| .XX ±0.20         | Draw by:   | Daniel     | KLS P/N: L-KLS1-221C-XX-M-L  |
| ANGLE TOLERANCE   | Check by:  | Daniel     | NingBo KLS ELECTRONIC CO., L TD.                                     |
| X. ±3°            | Date       | 2018-03-01 |  |
| .X ±2°            | SHEET      | 1 OF 1     |  |
| .XX ±1°           |            |            |  |

1 RoHS Compliant



**RECOMMENDED PCB LAYOUT**  
TOLERANCE: ±0.05mm

**Material:**  
Housing: PBT+30% Glass filled, UL94V-0  
Contacts: Brass, Gold Plating or Gold Plating on Contact Area, Tin on Solder Tail.  
Shell: Steel, Nickel Plating

**Electrical Characteristics:**  
Current Rating: 5 AMP  
Insulator Resistance: 1000MΩ Min. at DC 500V  
Withstanding Voltage: 500V AC (rms) for 1 minute  
Contact Resistance: 20mΩ Max. Initial  
Operating Temperature: -40°C ~ +105°C

| Call waiting force |           |          |
|--------------------|-----------|----------|
| Contacts           | Insertion | Withdraw |
| 09M/09F            | ≤4.0kgf   | ≥1.8kgf  |
| 15M/15F            | ≤4.5kgf   | ≥2.0kgf  |
| 25M/25F            | ≤6.0kgf   | ≥2.5kgf  |
| 37M/37F            | ≤8.0kgf   | ≥3.5kgf  |

**Order Information**

**L - KLS1 - 221D - XX - F - L**

RoHS \_\_\_\_\_

D-SUB Connector, \_\_\_\_\_  
2 Row Through Hole, Riveting After

XX-No. of 09, 15, 25, 37, 50 pins \_\_\_\_\_

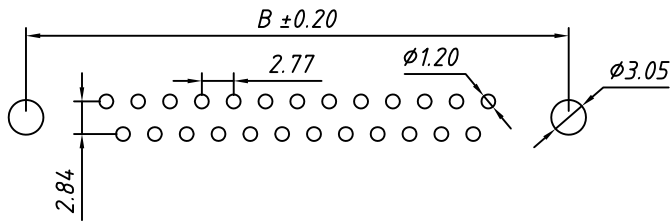
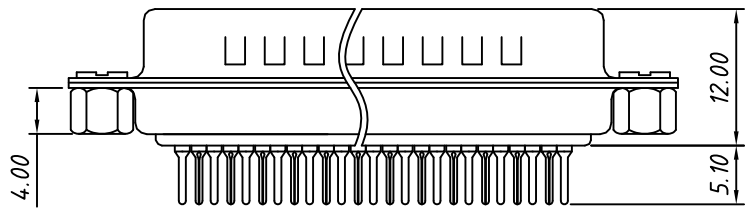
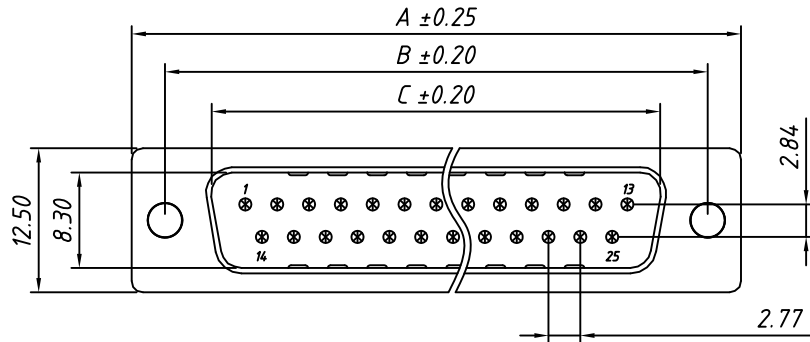
Connector type: F-Female \_\_\_\_\_

Housing Color: \_\_\_\_\_  
B-Black L-Blue W-White

| Number of Contacts | DIMENSION |        |        |
|--------------------|-----------|--------|--------|
|                    | A±0.25    | B±0.20 | C±0.20 |
| 09                 | 30.81     | 24.99  | 16.33  |
| 15                 | 39.14     | 33.32  | 24.66  |
| 25                 | 53.04     | 47.04  | 38.38  |
| 37                 | 69.32     | 63.50  | 54.84  |

| GENERAL TOLERANCE | PROJECTION |            | Description:   |
|-------------------|------------|------------|--|
| X. ±0.30          | UNITS      | mm         | D-SUB Connector,<br>Through Hole, Female, Riveting After |
| .X ±0.25          | SCALE      | 1:1        |  |
| .XX ±0.20         | Draw by:   | Daniel     | KLS P/N: L-KLS1-221D-XX-F-L                              |
| ANGLE TOLERANCE   | Check by:  | Daniel     | NingBo KLS ELECTRONIC CO., L TD.                         |
| X. ±3°            | Date       | 2018-03-01 |  |
| .X ±2°            | SHEET      | 1 OF 1     |  |
| .XX ±1°           |            |            |  |

1 RoHS Compliant

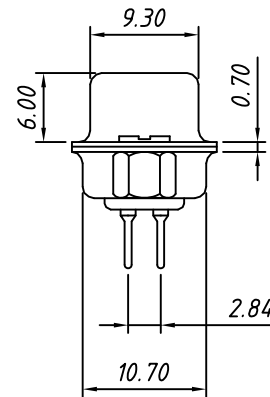


**RECOMMENDED PCB LAYOUT**  
TOLERANCE: ±0.05mm

| Number of Contacts | DIMENSION |        |        |
|--------------------|-----------|--------|--------|
|                    | A±0.25    | B±0.20 | C±0.20 |
| 09                 | 30.81     | 24.99  | 16.92  |
| 15                 | 39.14     | 33.32  | 25.25  |
| 25                 | 53.04     | 47.04  | 38.96  |
| 37                 | 69.32     | 63.50  | 55.42  |

**Material:**  
Housing: PBT+30% Glass filled, UL94V-0  
Contacts: Brass, Gold Plating or Gold Plating on Contact Area, Tin on Solder Tail.  
Shell: Steel, Nickel Plating

**Electrical Characteristics:**  
Current Rating: 5 AMP  
Insulator Resistance: 1000MΩ Min. at DC 500V  
Withstanding Voltage: 500V AC (rms) for 1 minute  
Contact Resistance: 20mΩ Max. Initial  
Operating Temperature: -40°C ~ +105°C



| Call waiting force |           |          |
|--------------------|-----------|----------|
| Contacts           | Insertion | Withdraw |
| 09M/09F            | ≤4.0kgf   | ≥1.8kgf  |
| 15M/15F            | ≤4.5kgf   | ≥2.0kgf  |
| 25M/25F            | ≤6.0kgf   | ≥2.5kgf  |
| 37M/37F            | ≤8.0kgf   | ≥3.5kgf  |

**Order Information**

**L - KLS1 - 221D - XX - M - L**  
RoHS \_\_\_\_\_  
D-SUB Connector, \_\_\_\_\_  
2 Row Through Hole, Riveting After \_\_\_\_\_  
XX-No. of 09, 15, 25, 37, 50 pins \_\_\_\_\_  
Connector type: M-Male \_\_\_\_\_  
Housing Color: \_\_\_\_\_  
B-Black L-Blue W-White

| GENERAL TOLERANCE | PROJECTION |            | Description:   |
|-------------------|------------|------------|--|
| X. ±0.30          | UNITS      | mm         | D-SUB Connector,<br>Through Hole, Male, Riveting After |
| .X ±0.25          | SCALE      | 1:1        |  |
| .XX ±0.20         | Draw by:   | Daniel     | KLS P/N: L-KLS1-221D-XX-M-L                            |
| ANGLE TOLERANCE   | Check by:  | Daniel     | NingBo KLS ELECTRONIC CO., L TD.                       |
| X. ±3°            | Date       | 2018-03-01 |  |
| .X ±2°            | SHEET      | 1 OF 1     |  |
| .XX ±1°           |            |            |  |