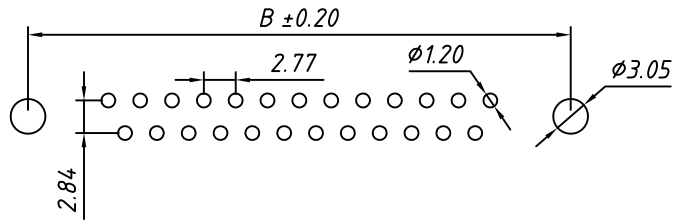
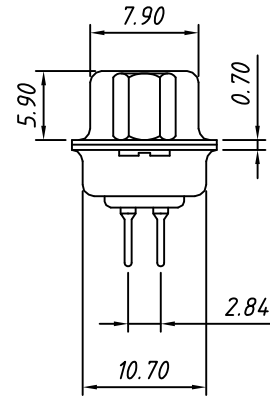
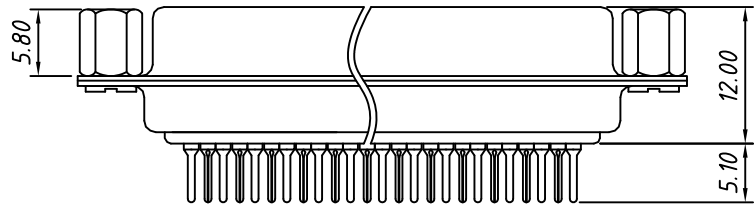
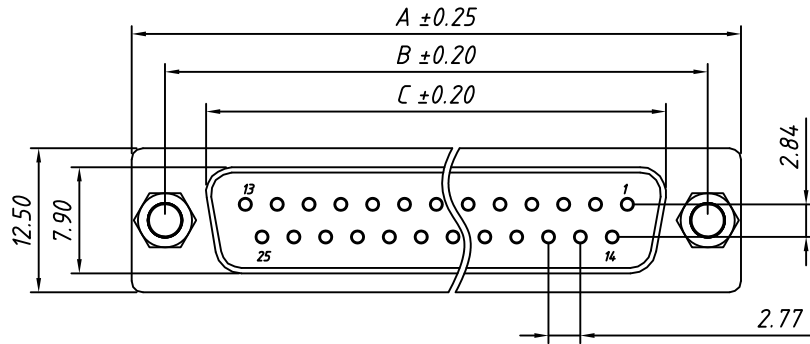


1 RoHS Compliant



**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

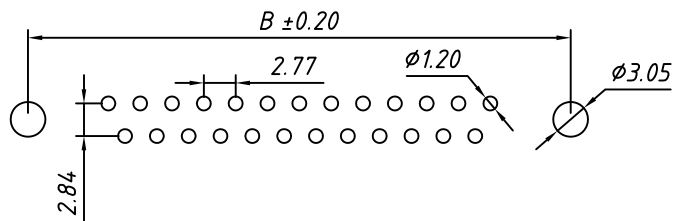
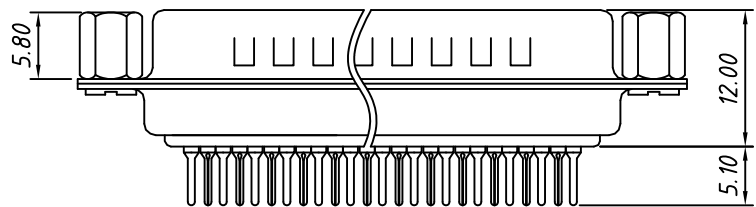
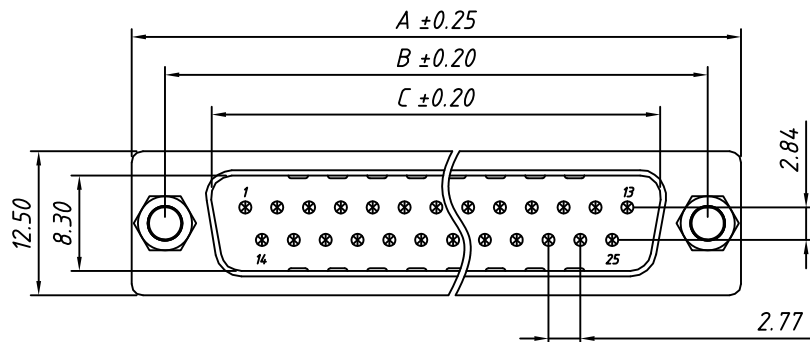
**Order Information**

L - KLS1 - 221A - XX - F - X  
 RoHS \_\_\_\_\_  
 D-SUB Connector, \_\_\_\_\_  
 2 Row Through Hole, Riveting Before \_\_\_\_\_  
 Number of Contacts \_\_\_\_\_  
 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, 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-X
ANGLE TOLERANCE	Check by:	Daniel	NingBo KLS ELECTRONIC CO., L TD.
X. ±3°	Date	2018-03-01	
.X ±2°	SHEET	1 OF 1	

1 RoHS Compliant



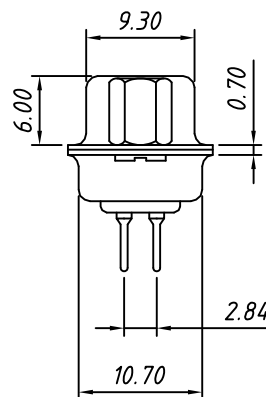
**RECOMMENDED PCB LAYOUT**  
TOLERANCE: ±0.05mm

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 Arer, 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

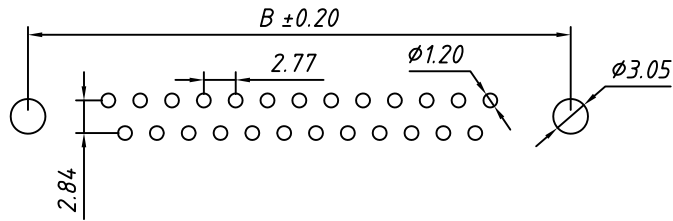
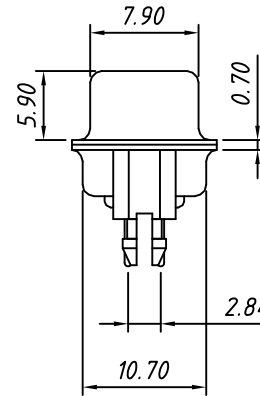
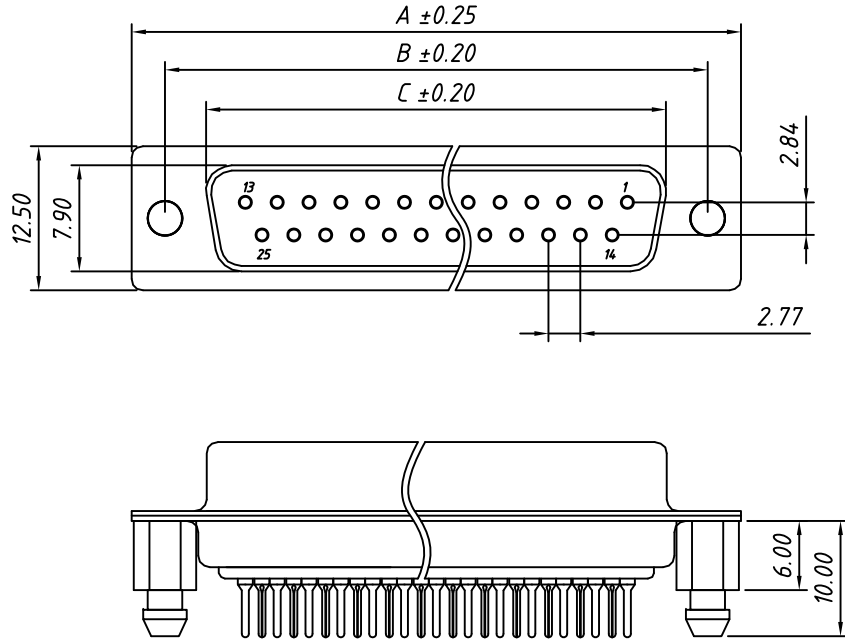


**Order Information**

L - KLS1 - 221A - XX - M - X  
RoHS \_\_\_\_\_  
D-SUB Connector, \_\_\_\_\_  
2 Row Through Hole,Riveting Before \_\_\_\_\_  
Number of Contacts \_\_\_\_\_  
Connector type: M-Male \_\_\_\_\_  
Housing Color: \_\_\_\_\_  
B-Black L-Blue W-White

GENERAL TOLERANCE	PROJECTION		Description:
X. ±0.30	UNITS	mm	D-SUB Connector, Through Hole, Male,Riveting Before
.X ±0.25	SCALE	1:1	
.XX ±0.20	Draw by:	Daniel	KLS P/N: L-KLS1-221A-XX-M-X
ANGLE TOLERANCE	Check by:	Daniel	NingBo KLS ELECTRONIC CO.,L TD.
X. ±3°	Date	2018-03-01	
.X ±2° .XX ±1°	SHEET	1 OF 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	$\leq 8.0\text{kgf}$	$\geq 3.5\text{kgf}$

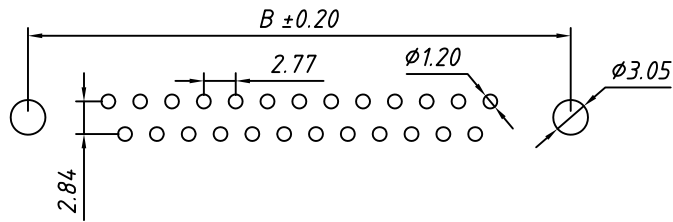
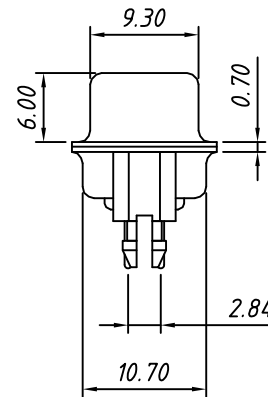
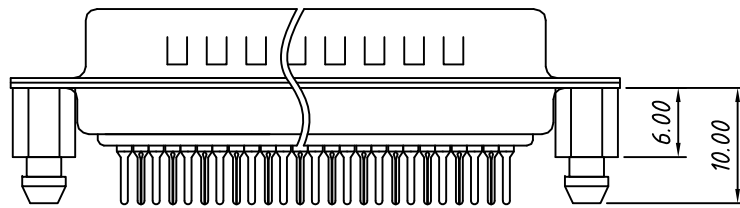
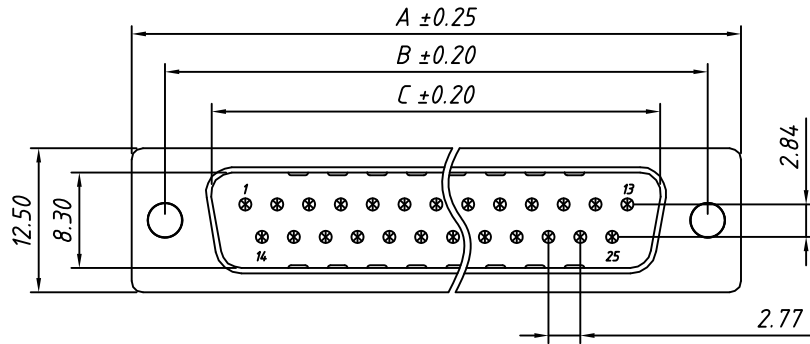
**Order Information**

L - KLS1 - 221B - XX - F - X  
 RoHS \_\_\_\_\_  
 D-SUB Connector, \_\_\_\_\_  
 2 Row Through Hole, Riveting Later Harpoons  
 Number of Contacts \_\_\_\_\_  
 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-X
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: ±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

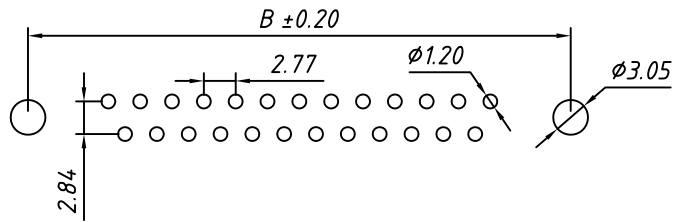
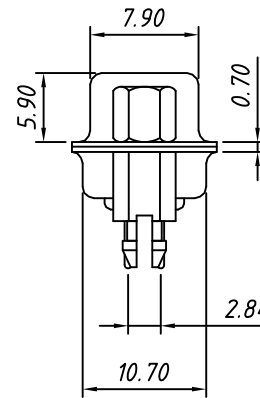
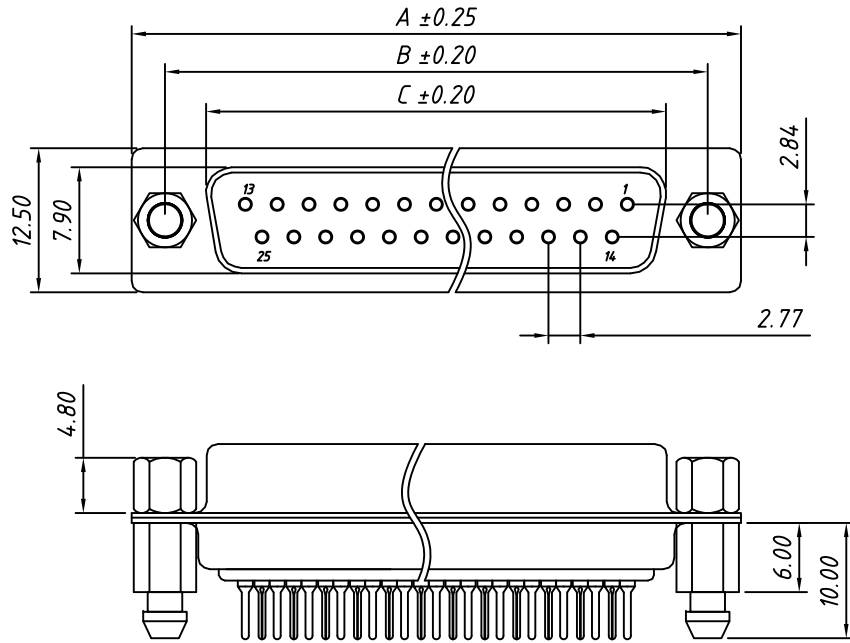
**Order Information**

L - KLS1 - 221B - XX - M - X  
 RoHS \_\_\_\_\_  
 D-SUB Connector, \_\_\_\_\_  
 2 Row Through Hole, Riveting Later Harpoons  
 Number of Contacts \_\_\_\_\_  
 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-X
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 - X

RoHS \_\_\_\_\_

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

Number of Contacts \_\_\_\_\_

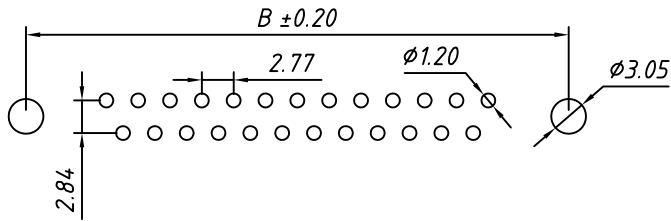
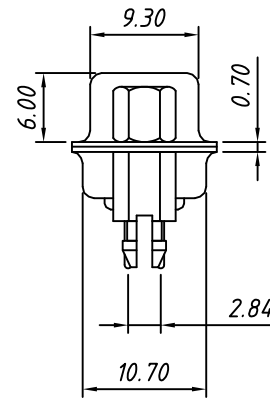
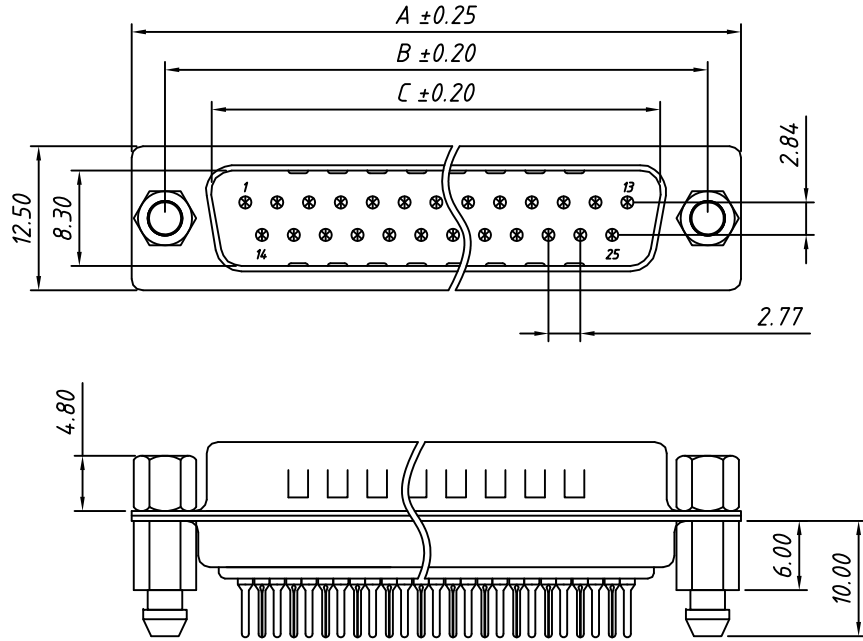
Connector type: F-Female \_\_\_\_\_

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	KLS P/N: L-KLS1-221C-XX-F-X
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	

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

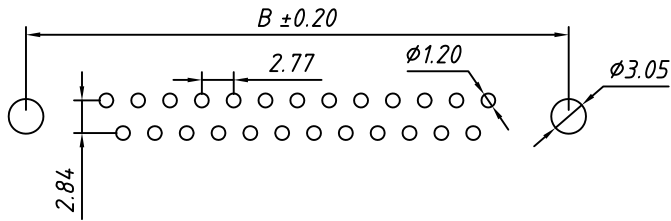
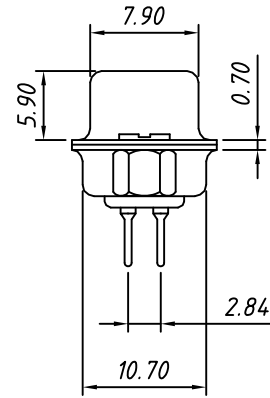
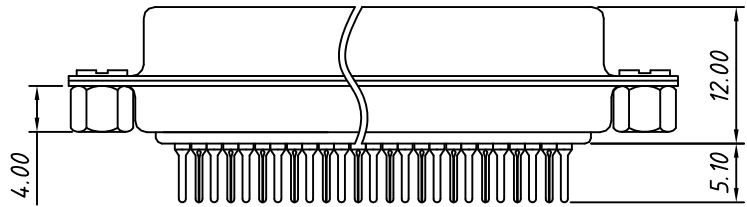
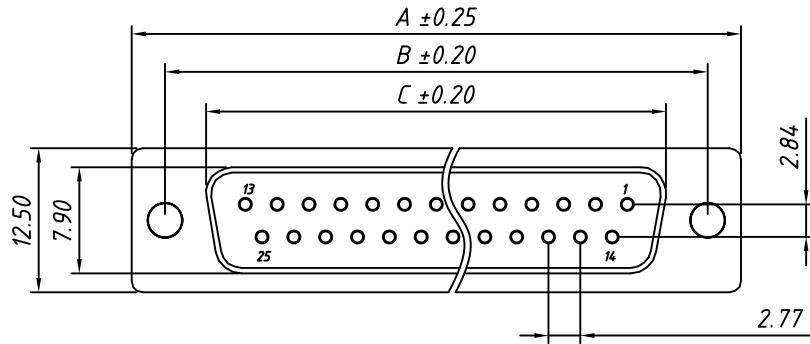
Order Information

L - KLS1 - 221C - XX - M - X  
 RoHS \_\_\_\_\_  
 D-SUB Connector, \_\_\_\_\_  
 2 Row Through Hole, After Lock Screw Rivet Harpoons  
 Number of Contacts \_\_\_\_\_  
 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	
ANGLE TOLERANCE	Check by:	Daniel	KLS P/N: L-KLS1-221C-XX-M-X
X. ±3°	Date	2018-03-01	NingBo KLS ELECTRONIC CO., L TD.
.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	$\leq 8.0\text{kgf}$	$\geq 3.5\text{kgf}$

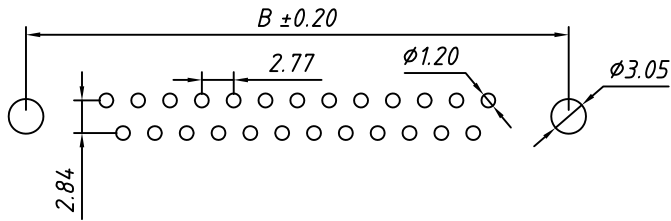
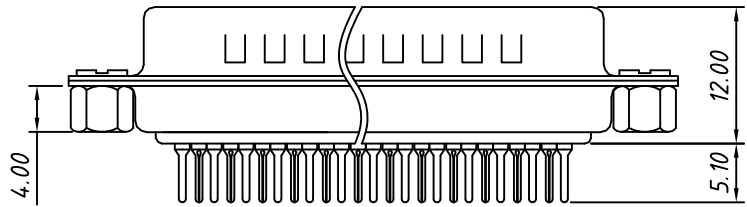
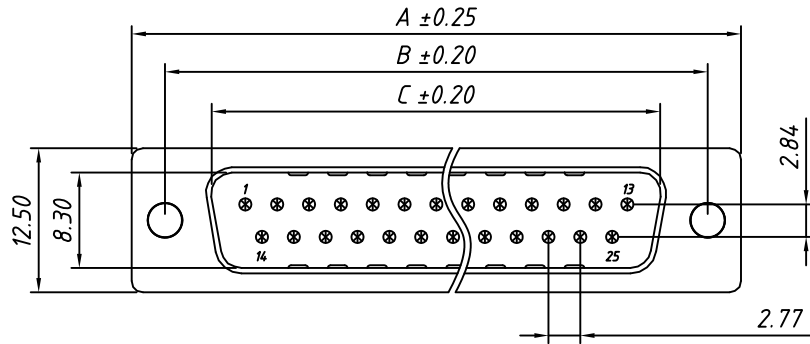
Order Information

L - KLS1 - 221D - XX - F - X  
RoHS \_\_\_\_\_  
D-SUB Connector, \_\_\_\_\_  
2 Row Through Hole, Riveting After \_\_\_\_\_  
Number of Contacts \_\_\_\_\_  
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 After
.X $\pm 0.25$	SCALE	1:1	
.XX $\pm 0.20$	Draw by:	Daniel	KLS P/N: L-KLS1-221D-XX-F-X
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	

1 RoHS Compliant

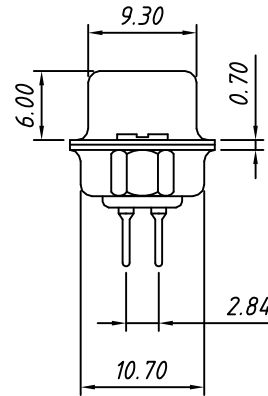


**RECOMMENDED PCB LAYOUT**  
TOLERANCE: ±0.05mm

**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 - M - X  
 RoHS \_\_\_\_\_  
 D-SUB Connector, \_\_\_\_\_  
 2 Row Through Hole, Riveting After \_\_\_\_\_  
 Number of Contacts \_\_\_\_\_  
 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 After
.X ±0.25	SCALE	1:1	
.XX ±0.20	Draw by:	Daniel	KLS P/N: L-KLS1-221D-XX-M-X
ANGLE TOLERANCE	Check by:	Daniel	NingBo KLS ELECTRONIC CO.,L TD.
X. ±3°	Date	2018-03-01	
.X ±2° .XX ±1°	SHEET	1 OF 1	