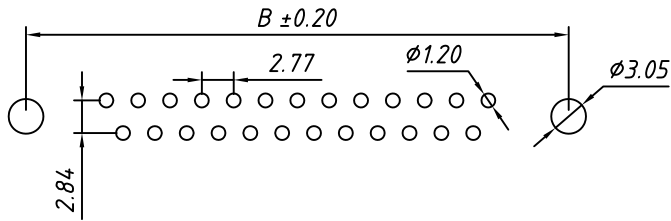
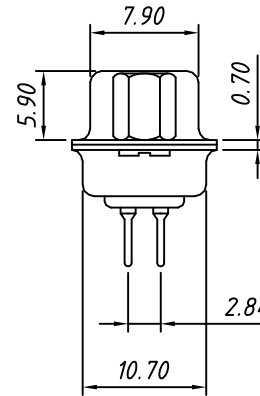
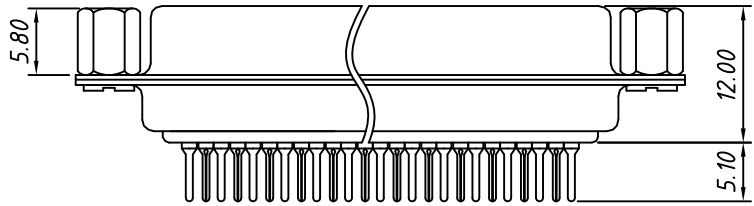
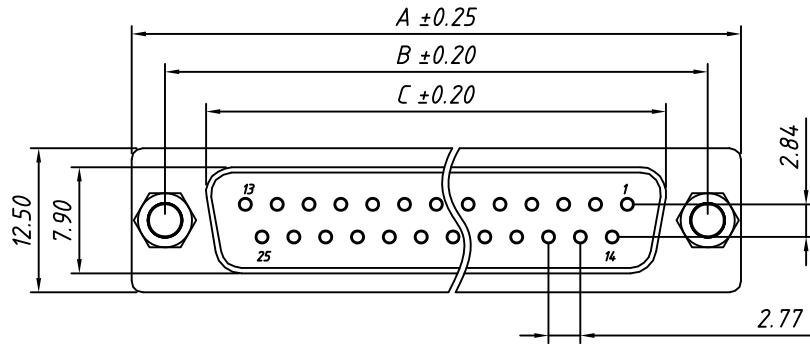


1 RoHS Compliant



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

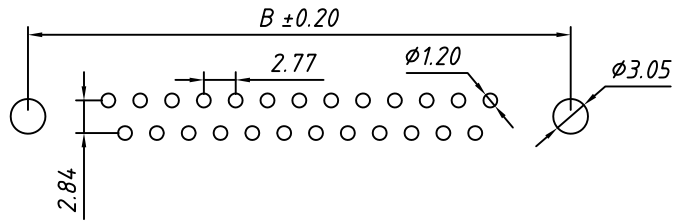
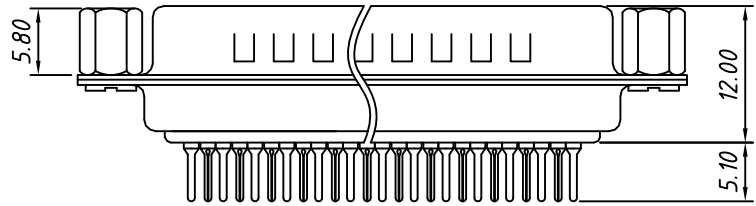
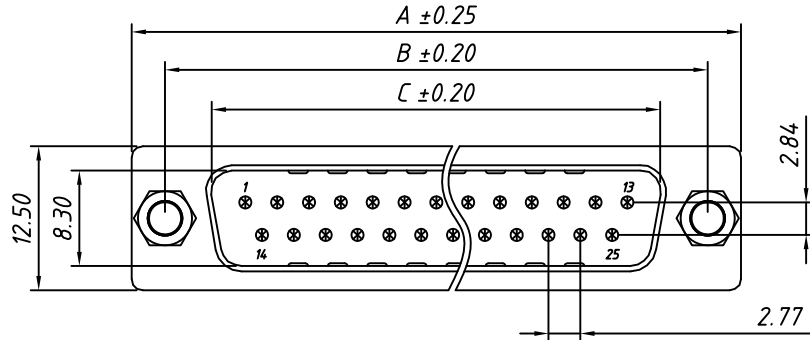
L - KLS1 - 221A - XX - F - L

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, 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

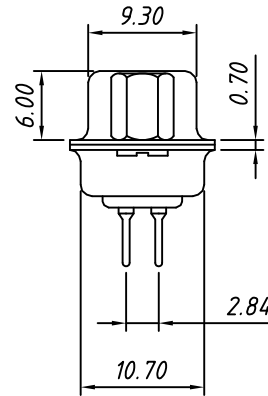


RECOMMENDED PCB LAYOUT
TOLERANCE: $\pm 0.05\text{mm}$

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 Ω Min. at DC 500V
Withstanding Voltage: 500V AC (rms) for 1 minute
Contact Resistance: 20m Ω 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	$\leq 8.0\text{kgf}$	$\geq 3.5\text{kgf}$



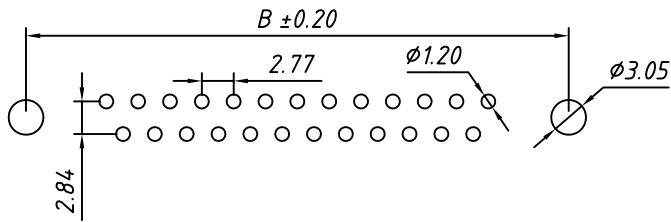
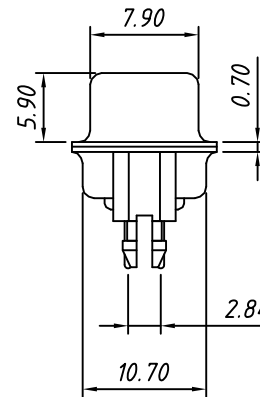
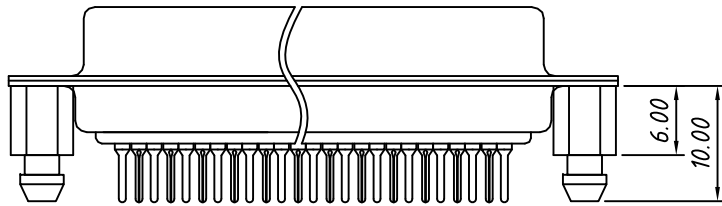
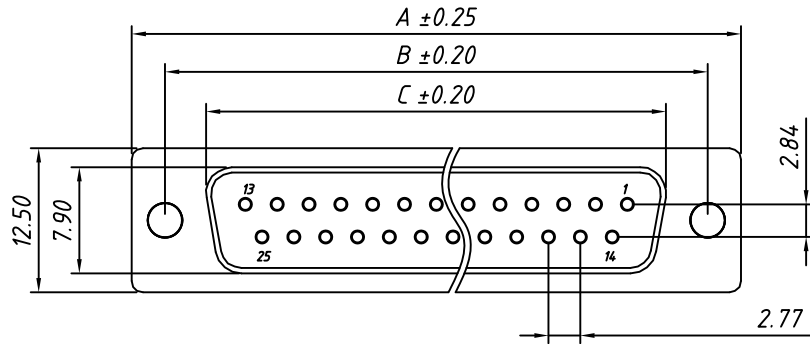
Order Information

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 ± 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 Before
.X ± 0.25	SCALE	1:1	
.XX ± 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: ±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

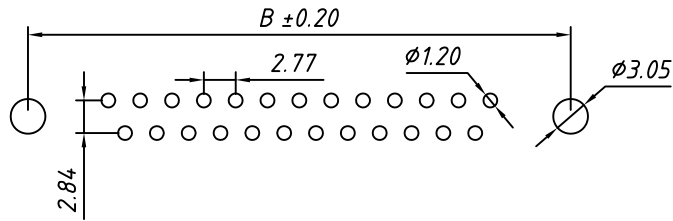
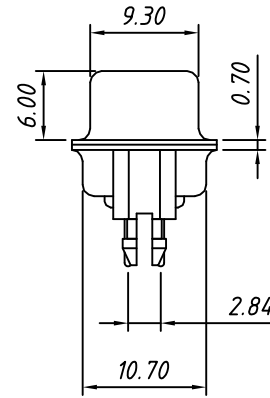
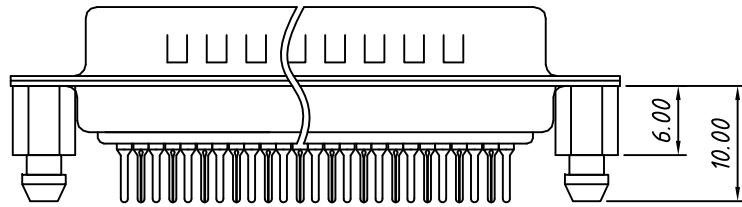
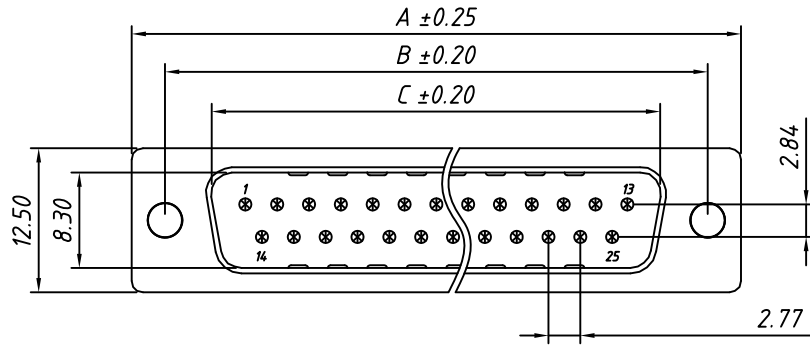
Order Information

L - KLS1 - 221B - XX - 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±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 Later Harpoons
.X ±0.25	SCALE	1:1	
.XX ±0.20	Draw by:	Daniel	KLS P/N: L-KLS1-221B-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

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

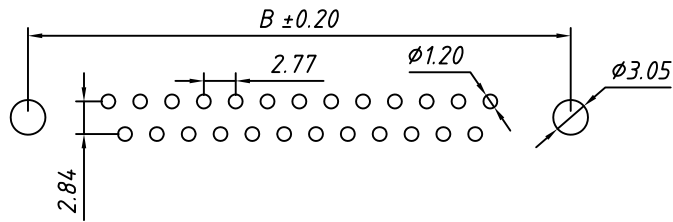
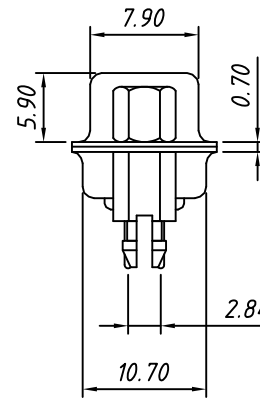
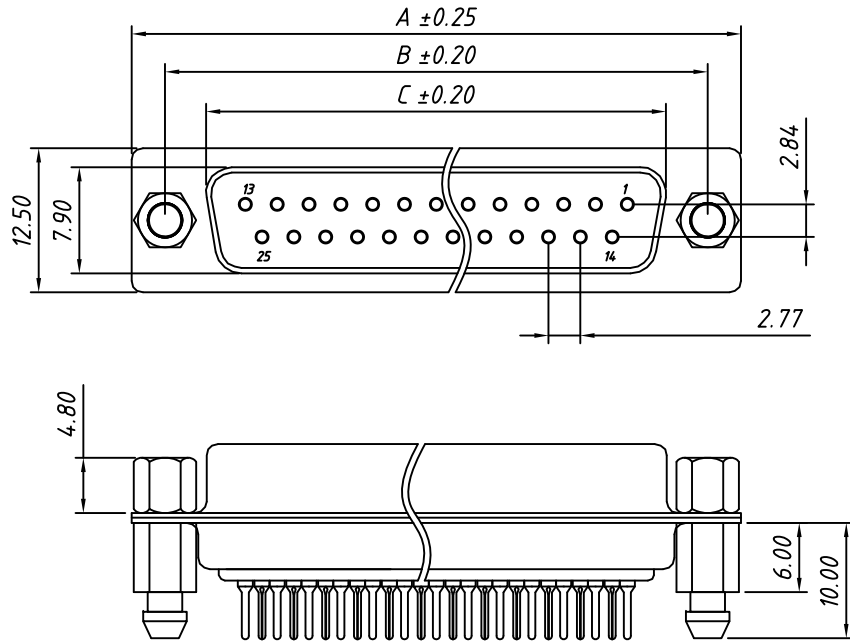
Order Information

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: ±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

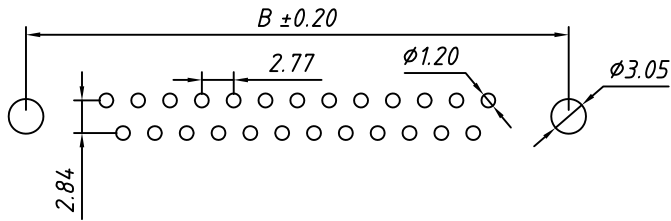
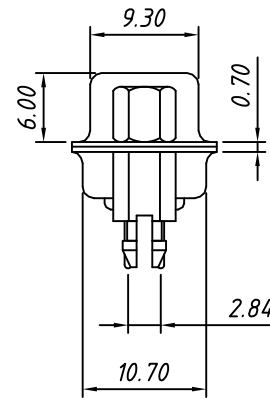
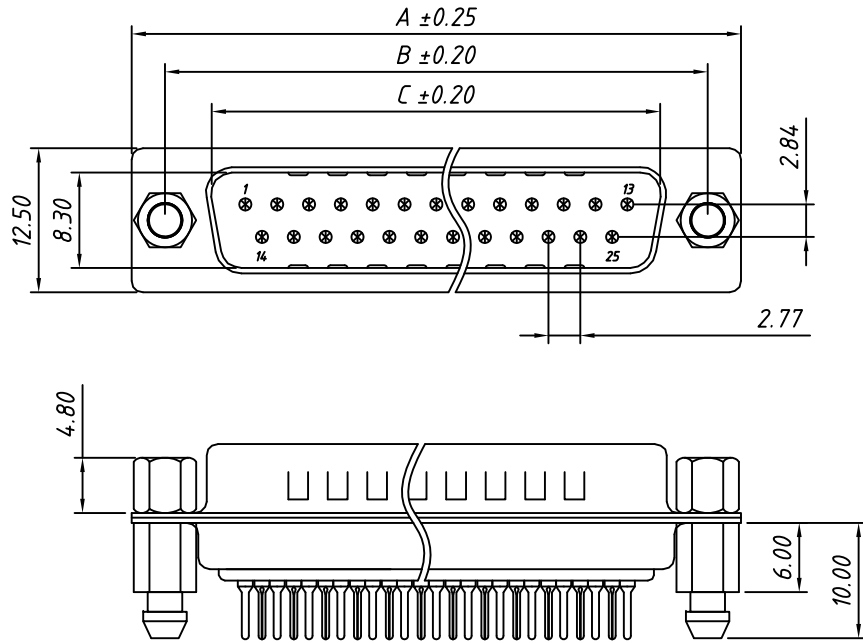
Order Information

L - KLS1 - 221C - XX - 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±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, After Lock Screw Rivet Harpoons
.X ±0.25	SCALE	1:1	
.XX ±0.20	Draw by:	Daniel	KLS P/N: L-KLS1-221C-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

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

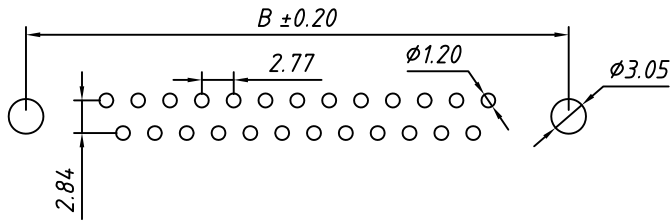
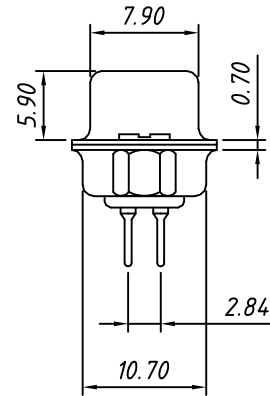
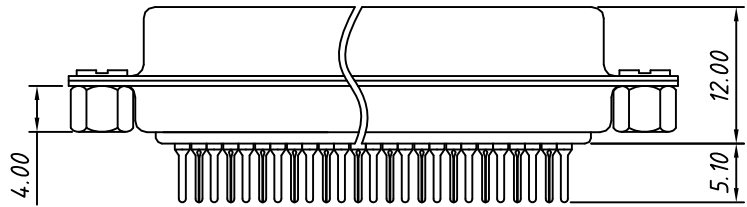
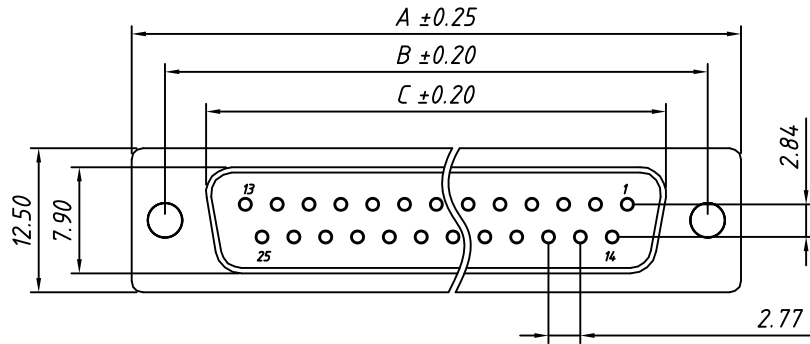
L - KLS1 - 221C - XX - M - L
 RoHS _____
 D-SUB Connector, _____
 2 Row Through Hole, After Lock Screw Rivet Harpoons
 XX-No. of 09, 15, 25, 37, 50 pins _____
 Connector type: M-Male _____
 Housing Color: _____
 B-Black L-Blue W-White

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	
X. ±3°	Date	2018-03-01	
.X ±2°	SHEET	1 OF 1	
.XX ±1°			

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

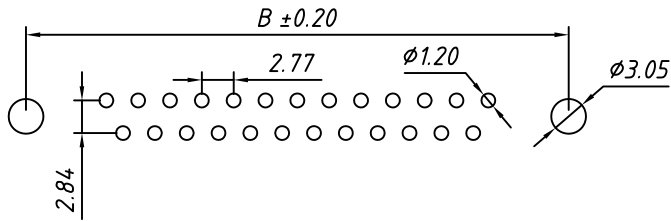
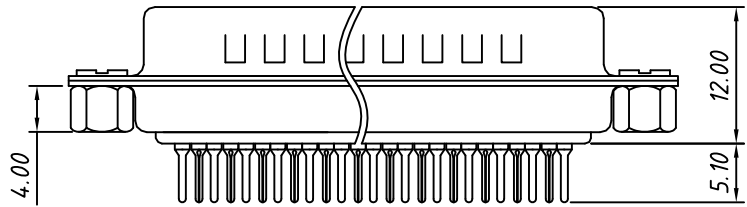
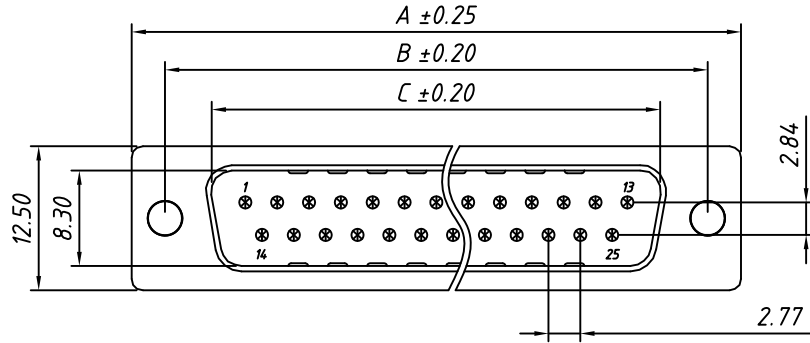
Order Information

L - KLS1 - 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, 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



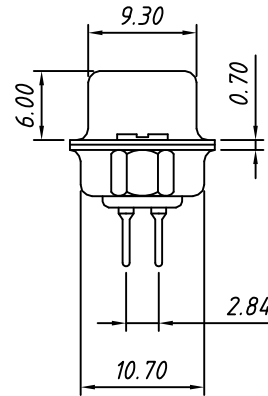
RECOMMENDED PCB LAYOUT
TOLERANCE: ±0.05mm

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, 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°			