



# MIL-DTL-32139 Nano D-sub Connectors

## R06 Right Angle to PCB Series

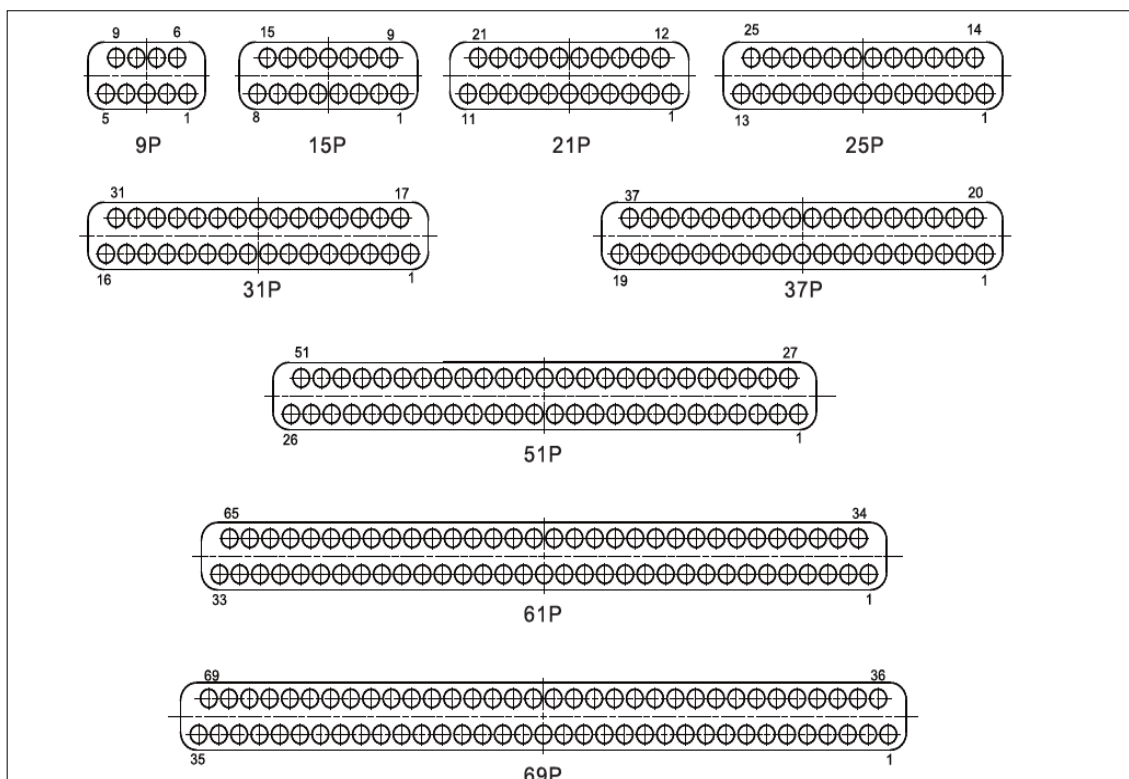
### Brief introduction

- Contacts: 9, 15, 21, 25, 31, 37, 51, 65, 69
- Twist flexible micro pin (twist pin), 0.635mm pitch, micro miniature outline dimension
- Screw nut locking, it is gently when insert and extract, stably locked
- It is used for all kinds for electric circuit system interconnection which have high density, micro, light, highly reliable requirement, it can meet light and miniaturize demand
- Plug with twist pin, receptacle with socket, free terminal with locking screw, fixed terminal with nut, standard mated connector locked by screw and nut
- Standard: MIL-DTL-32139
- Undefined tolerance is  $\pm 0.13$

### Specification

- |                     |                                                                                       |                          |                                  |
|---------------------|---------------------------------------------------------------------------------------|--------------------------|----------------------------------|
| ■ Environment:      | -55°C~+125°C                                                                          | ■ Contact resistance:    | $\leq 21\text{m}\Omega$          |
| ■ Vibration:        | 10Hz~2000Hz 196m/s <sup>2</sup>                                                       | ■ Insulation resistance: | $\geq 5000\text{M}\Omega$ 100VDC |
| ■ Shock:            | 980m/s <sup>2</sup> 6ms                                                               | ■ Dielectric strength:   | 250V                             |
| ■ Rated current:    | 1A                                                                                    | ■ Machine life:          | 200 times                        |
| ■ Random vibration: | power spectrum density 0.4G <sup>2</sup> /Hz, r.m.s value of total acceleration 23.1G |                          |                                  |

### Contact layout


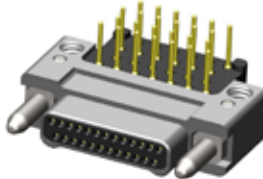


Remark: The above layout is view from plug mate side end face



# R06 Right Angle to PCB Plug Series

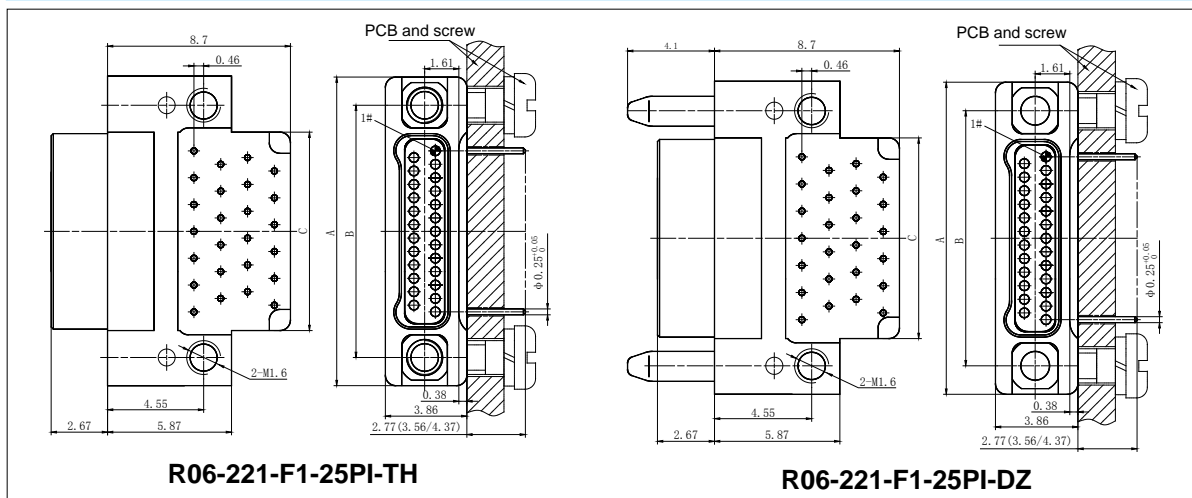
## Order marks

<b>Series</b>	R06	-2	2	1	-F	1	-25	PI	-TH	 <p><b>R06-221-F1-25PI-TH</b></p>  <p><b>R06-221-F1-25PI-DZ</b></p>
<b>Contact row:</b>										
2 — tow rows										
<b>Shell plating:</b>										
2 — nickel plating										
<b>Contact plating:</b>										
1 — gold plating										
<b>Tail termination type :</b>										
F — 90° right angle to PCB										
<b>Tail length:</b>										
1 — 2.77mm										
2 — 3.56mm										
3 — 4.37mm										
<b>Contact number:</b>										
9、15、21、25、31、37、51、65、69										
<b>Contact type :</b>										
PI — pin in plug										
<b>Locking type:</b>										
DZ — guide pin      TH — connect nut										

### Remark

- R06-221-F\*-\*\*PI-TH usually mated with receptacle which have locking screw, R06-221-F\*-\*\*PI-DZ usually mated with receptacle which have guide hole
- 3 kinds of tail length, customized produce for other length

## Outline dimension

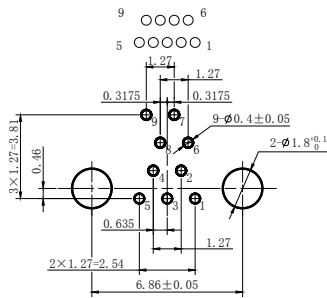
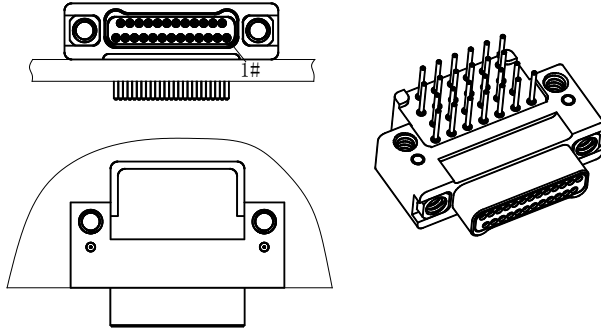


Pin count	Dimension			Pin count	Dimension			Pin count	Dimension		
	A	B	C		A	B	C		A	B	C
9pins	9.63	6.86	4.25	15pins	11.53	8.76	6.15	21pins	13.44	10.67	8.06
25pins	14.71	11.94	9.33	31pins	16.61	13.84	11.23	37pins	18.52	15.75	13.14
51pins	22.96	20.19	17.58	65pins	27.41	24.64	22.03	69pins	28.68	25.91	23.3

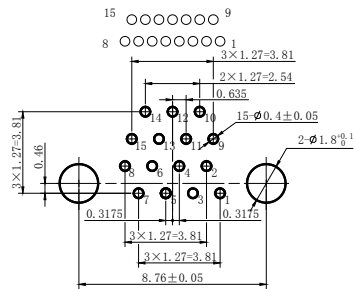
Remark: All dimensions are in mm



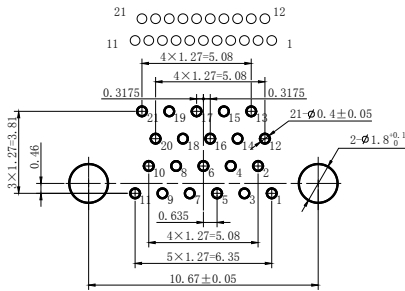
## Suggested PCB Layout



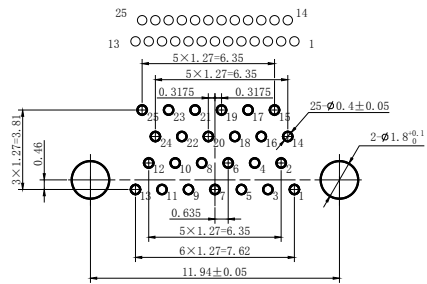
**R06-221-F1/F2/F3-9PI-TH**



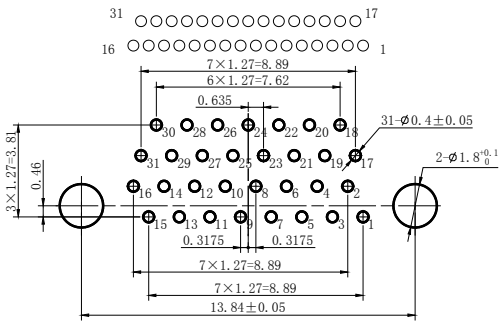
**R06-221-F1/F2/F3-15PI-TH**



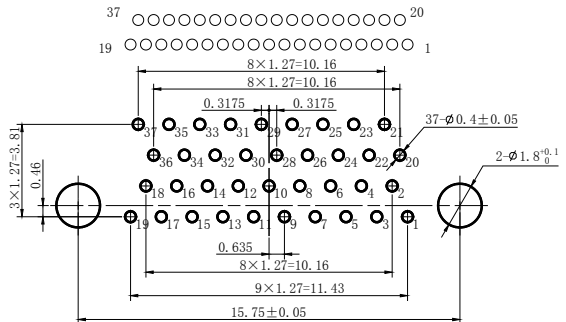
**R06-221-F1/F2/F3-21PI-TH**



**R06-221-F1/F2/F3-25PI-TH**



**R06-221-F1/F2/F3-31PI-TH**

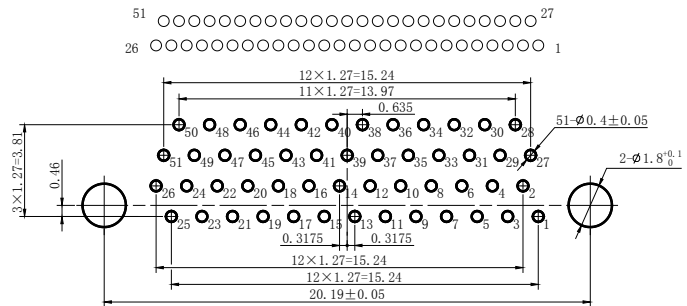
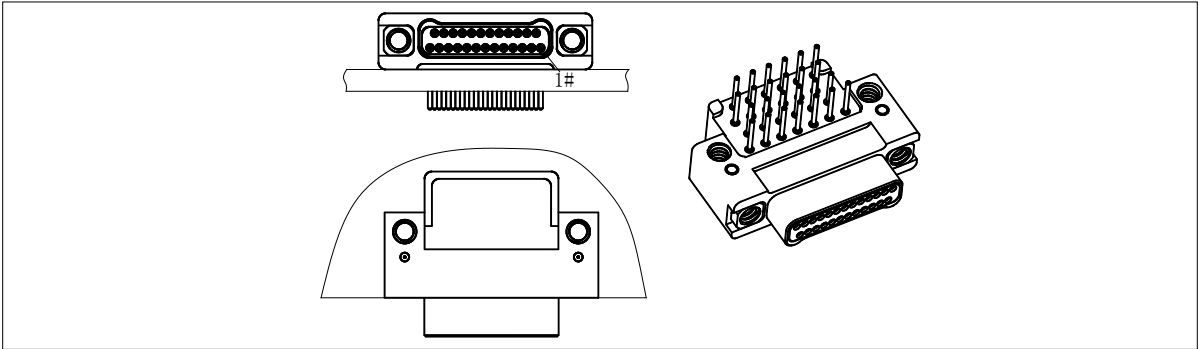


**R06-221-F1/F2/F3-37PI-TH**

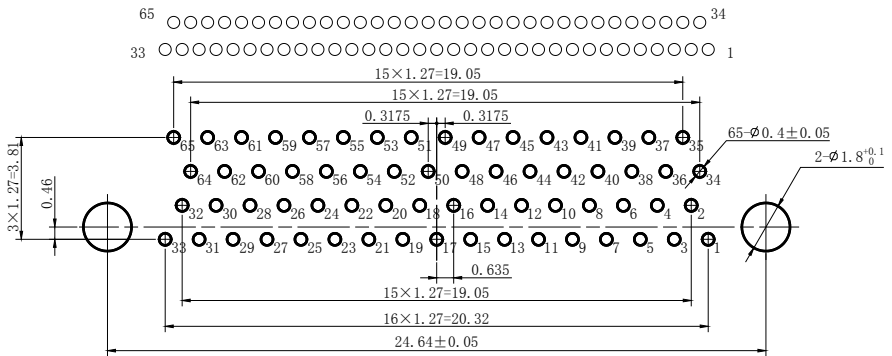
Remark: All dimensions are in mm



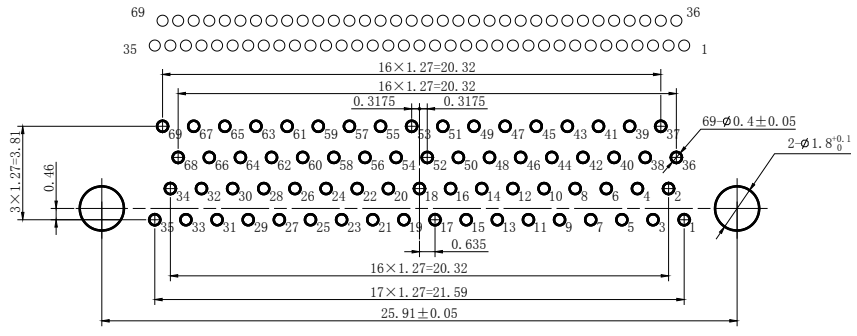
### Suggested PCB Layout



**R06-221-F1/F2/F3-51PI-TH**



**R06-221-F1/F2/F3-65PI-TH**



**R06-221-F1/F2/F3-69PI-TH**

Remark: All dimensions are in mm



## R06 Right Angle to Flexible PCB Plug with Locking Screw Series

### Order marks

<b>Series</b>	R06	-2	2	1	-F	1	-25	PI	- JC
<b>Contact row:</b>	2 — tow rows								
<b>Shell plating:</b>	2 — nickel plating								
<b>Contact plating:</b>	1 — gold plating								
<b>Tail termination type :</b>	F— 90° right angle to PCB								
<b>Tail length:</b>	1— 2.77mm 2 — 3.56mm 3 — 4.37mm								
<b>Contact number:</b>	9、15、21、25、31、37、51、65、69								
<b>Contact type :</b>	PI — pin in plug								
<b>Locking type:</b>	JC— locking screw(straight slot,C dimension=1.5mm) JC1— locking screw(hex, not recommend,C dimension=2.1mm)								

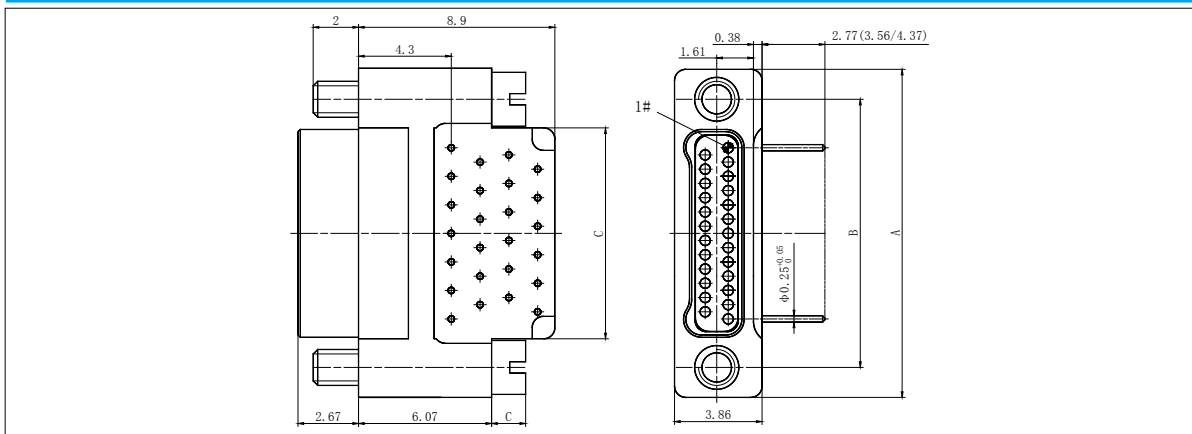


R06-221-F1-25PI-JC

### Remark

- 3 kinds of tail length,customized produce for other length
- Connector is free mounted,not fixed,usually mated with receptacle which have nut
- Tail soldered in the Flexible PCB
- Recommended JC(straight slot screw) types of screws,tight by miniature straight screwdriver
- When choose JC1(hex) type of screws,tight by 1.27mm subtense hex screwdriver.

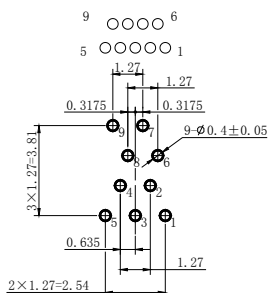
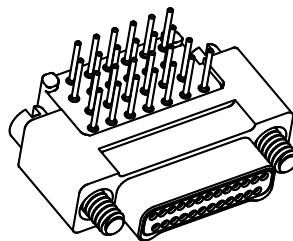
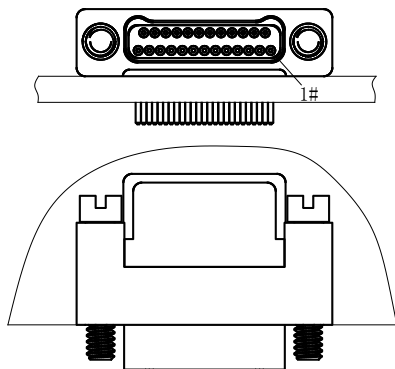
### Outline dimension



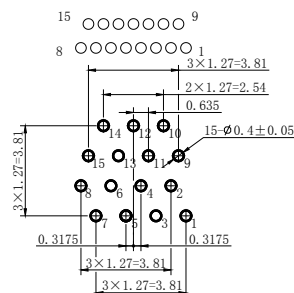
Pin count	Dimension			Pin count	Dimension			Pin count	Diension		
	A	B	C		A	B	C		A	B	C
9pins	9.63	6.86	4.25	15pins	11.53	8.76	6.15	21pins	13.44	10.67	8.06
25pins	14.71	11.94	9.33	31pins	16.61	13.84	11.23	37pins	18.52	15.75	13.14
51pins	22.96	20.19	17.58	65pins	27.41	24.64	22.07	69pins	28.68	25.91	23.3

Remark: All dimensions are in mm

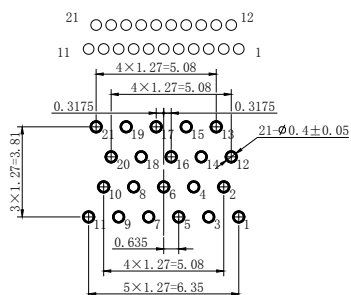
## Suggested PCB Layout



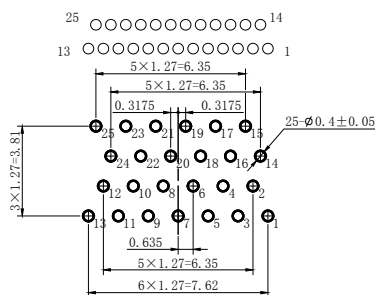
**R06-221-F1/F2/F3-9PI-JC**



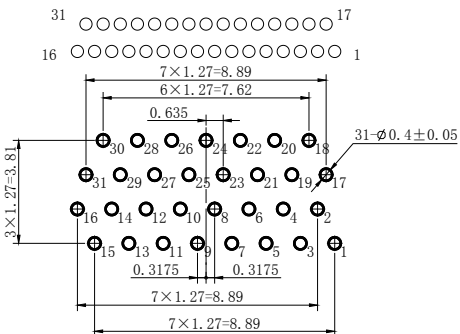
**R06-221-F1/F2/F3-15PI-JC**



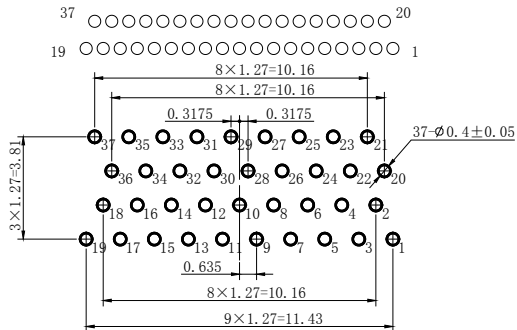
**R06-221-F1/F2/F3-21PI-JC**



**R06-221-F1/F2/F3-25PI-JC**



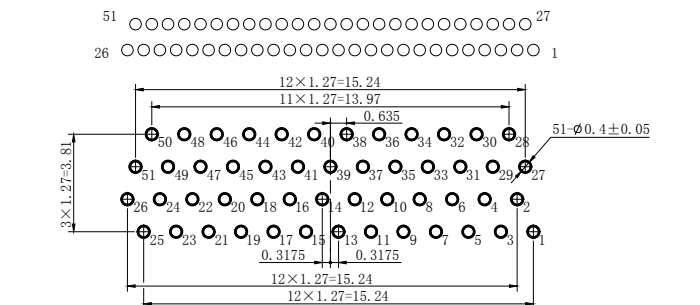
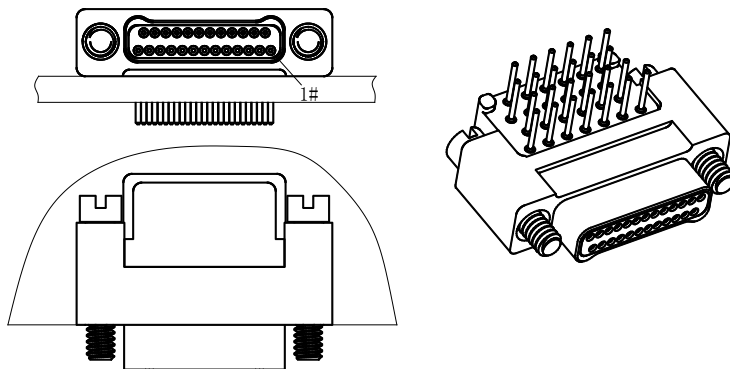
**R06-221-F1/F2/F3-31PI-JC**



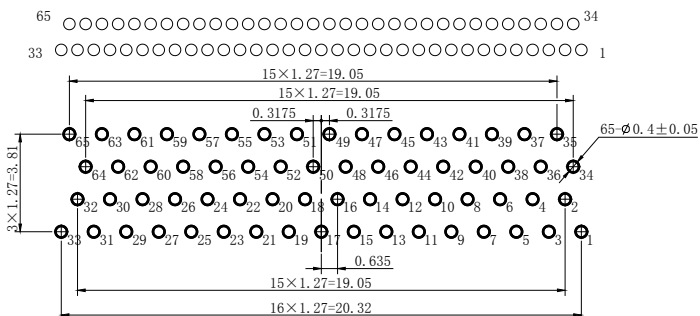
**R06-221-F1/F2/F3-37PI-JC**

Remark: All dimensions are in mm

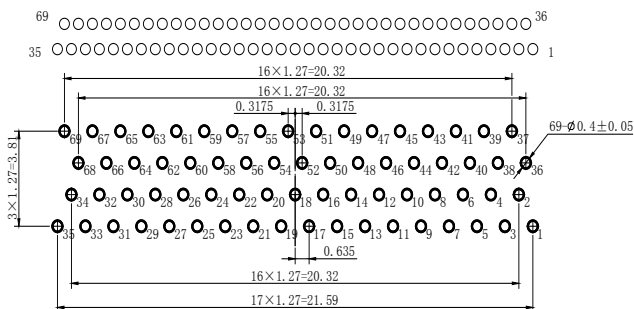
## Suggested PCB Layout



**R06-221-F1/F2/F3-51PI-JC**



**R06-221-F1/F2/F3-65PI-JC**




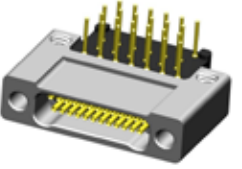
**R06-221-F1/F2/F3-69PI-JC**

Remark: All dimensions are in mm



# R06 Right Angle to PCB Receptacle Series

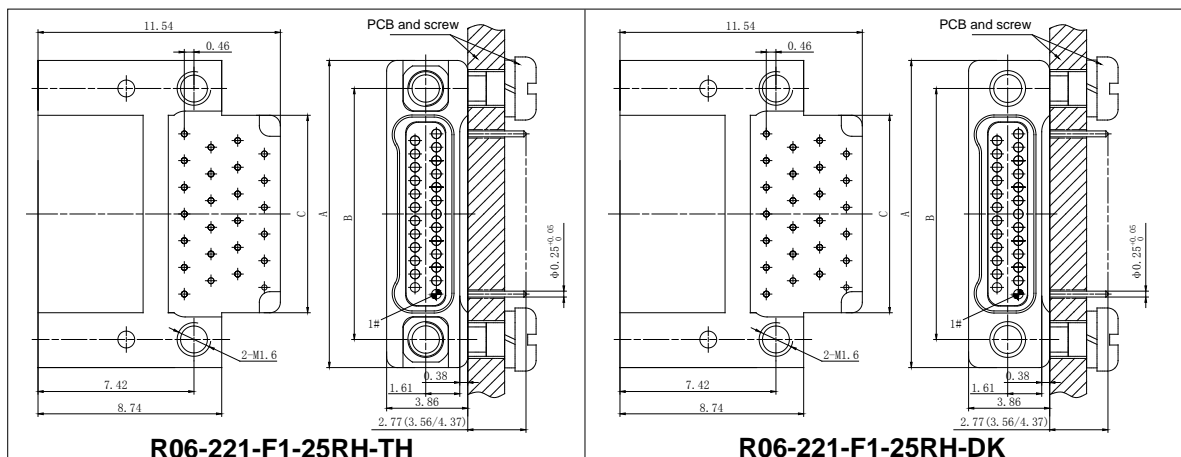
## Order marks

<b>Series</b>	R06	-2	2	1	-F	1	-25	RH	-TH	 <p><b>R06-221-F1-25RH-TH</b></p>  <p><b>R06-221-F1-25RH-DK</b></p>
<b>Contact row:</b>	2 — tow rows									
<b>Shell plating:</b>	2 — nickel plating									
<b>Contact plating:</b>	1 — gold plating									
<b>Tail termination type :</b>	F— 90° right angle to PCB									
<b>Tail length:</b>	1— 2.77mm 2 — 3.56mm 3 — 4.37mm									
<b>Contact number:</b>	9、15、21、25、31、37、51、65、69									
<b>Contact type :</b>	RH— socket in receptacle									
<b>Locking type:</b>	DK— guide hole      TH— connect nut									

### Remark

- R06-221-F\*-\*\*RH-TH usually mated with plug which have locking screw, R06-221-F\*-\*\*RH-DK usually mated with plug which have guide pin
- 3 kinds of tail length, customized produce for other length

## Outline dimension



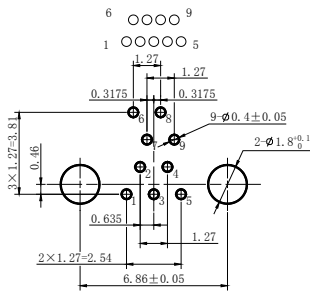
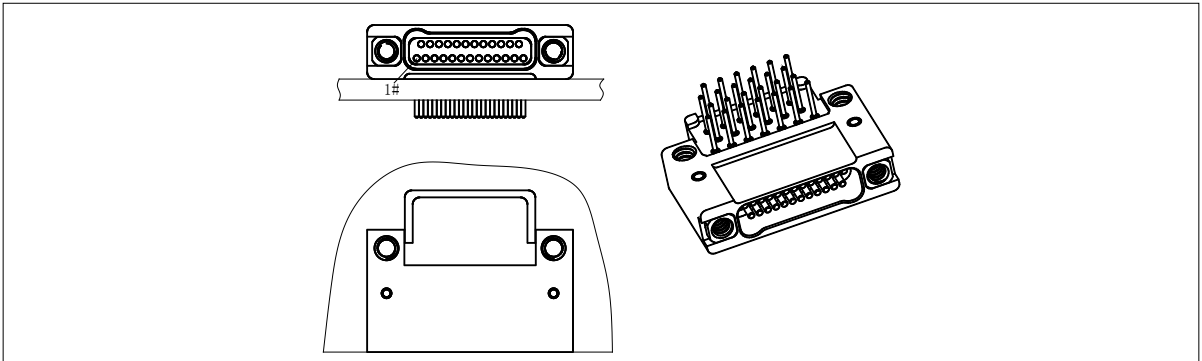
Pin count	Dimension			Pin count	Dimension			Pin count	Dimension		
	A	B	C		A	B	C		A	B	C
9pins	9.63	6.86	4.25	15pins	11.53	8.76	6.15	21pins	13.44	10.67	8.06
25pins	14.71	11.94	9.33	31pins	16.61	13.84	11.23	37pins	18.52	15.75	13.14
51pins	22.96	20.19	17.58	65pins	27.41	24.64	22.03	69pins	28.68	25.91	23.3

Remark: All dimensions are in mm

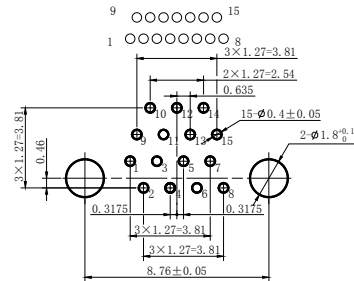




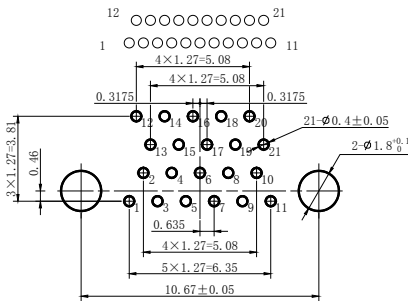
## Suggested PCB Layout



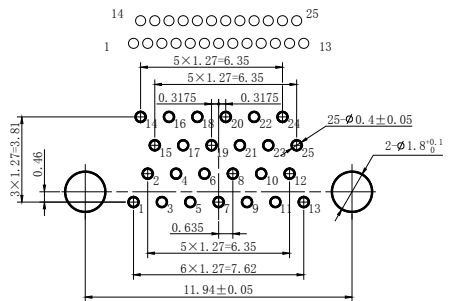
**R06-221-F1/F2/F3-9RH-TH**



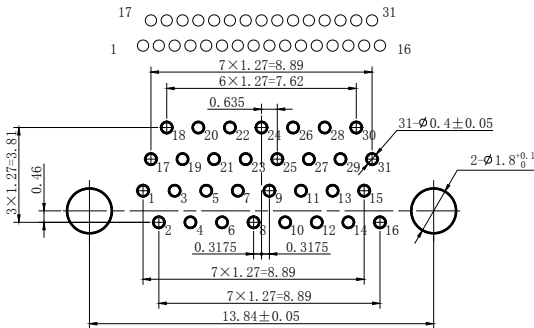
**R06-221-F1/F2/F3-15RH-TH**



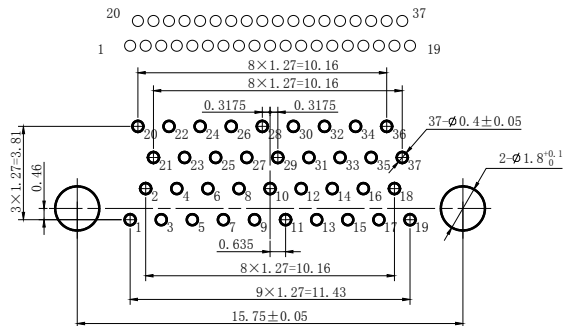
**R06-221-F1/F2/F3-21RH-TH**



**R06-221-F1/F2/F3-25RH-TH**



**R06-221-F1/F2/F3-31RH-TH**

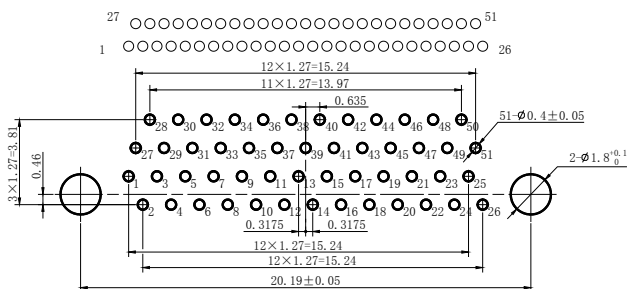
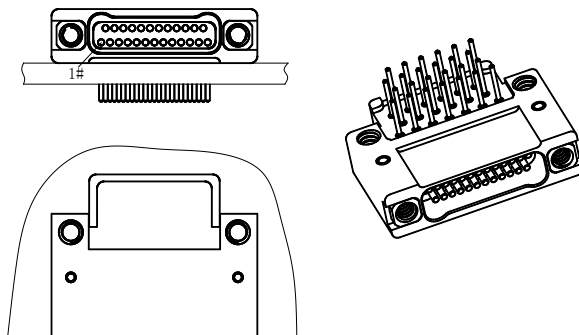


**R06-221-F1/F2/F3-37RH-TH**

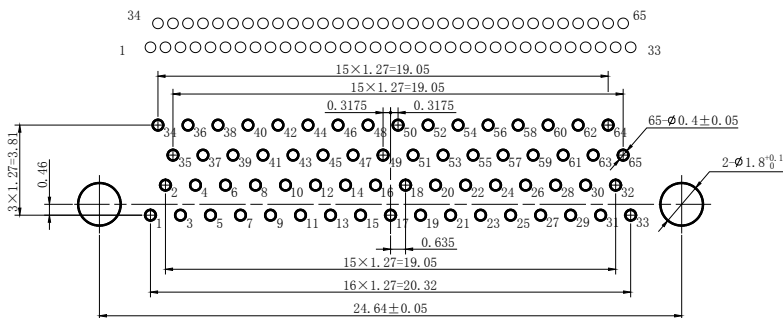
Remark: All dimensions are in mm



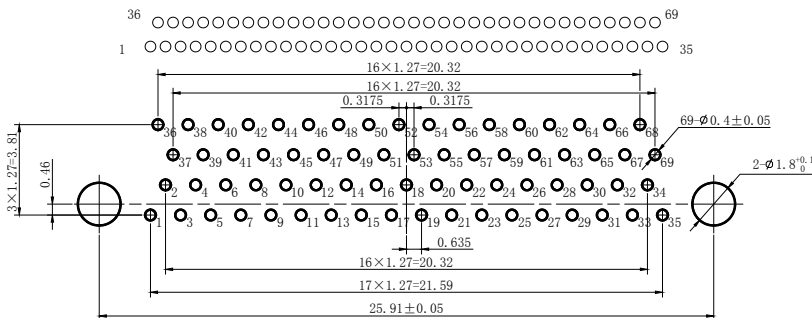
### Suggested PCB Layout



**R06-221-F1/F2/F3-51RH-TH**



**R06-221-F1/F2/F3-65RH-TH**



**R06-221-F1/F2/F3-69RH-TH**

Remark: All dimensions are in mm