

MIL-DTL-32139 Nano D-Sub Space Connectors

N06S Right Angle to PCB Series

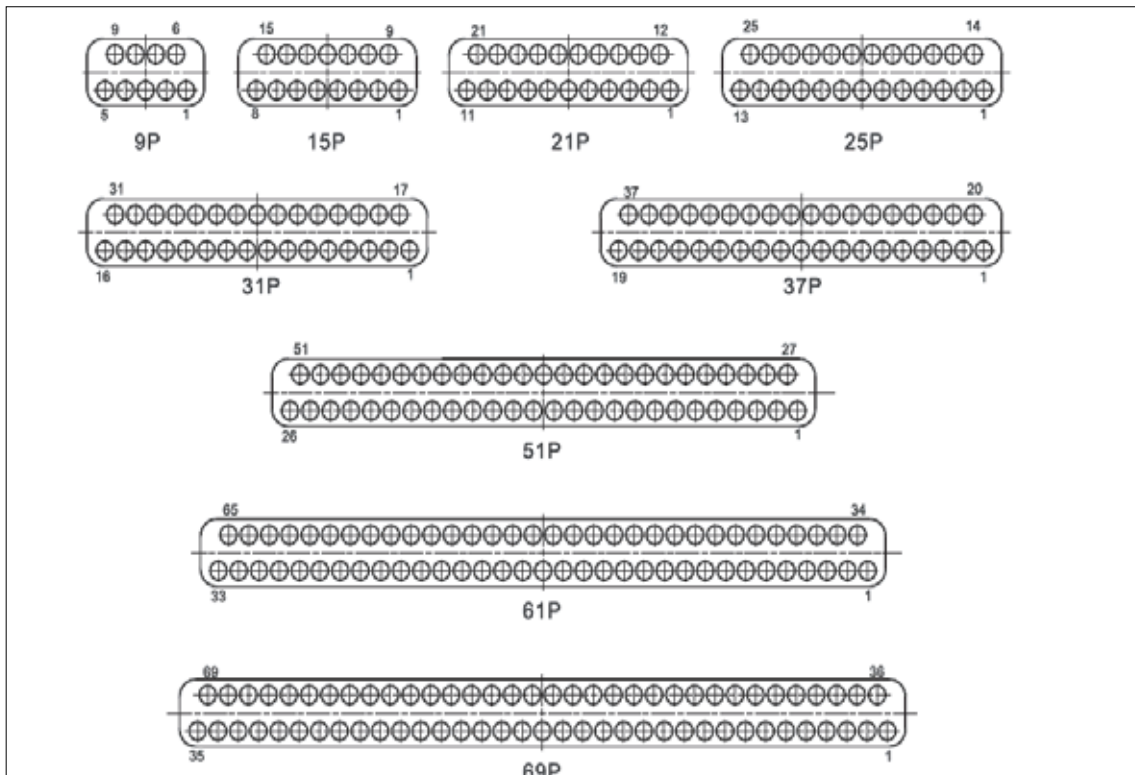
Brief introduction

- Available with no. of contacts: 9,15,21,25,31,37,51,65,69
- Twist pin contacts for improved shock and vibration performance, 0.635mm (0.025") pitch.
- Screw nut locking, easy to insert and extract.
- Commonly used for electrical circuit interconnections with high density, miniaturized, lightweight and high reliability requirements.
- Connector plugs are fitted with twist pin contacts, connector receptacle are fitted with socket contacts
- Standard: MIL-DTL-32139
- Undefined tolerance is $\pm 0.13\text{mm}$

Specification

Environment:	-55°C ~ +125°C	Insulation resistance:	$\geq 5000\text{M}\Omega$
Vibration:	10Hz ~ 2000Hz acc. at 196m/s ²	Dielectric strength:	250V
Shock:	980m/s ² for 6ms	Mating durability:	200 Cycles
Rated current:	1A	Thermal Vacuum Outgassing:	TML $\leq 1\%$ CVCM $\leq 0.1\%$
Irradiation Resistant:	Total dose: $1 \times 10^5 \text{GY}$ 0.5Gy(Si)/s	Thermal stability:	125°C ± 2 1000h
Magnetic Permeability:	200 gamma	Overload Test:	Under rated current 1.5 times. Time: Duration 30s then stopped 90s. 5 Cycles.
Contact resistance:	$\leq 21\text{m}\Omega$		
Random vibration:	power spectrum density 0.4G ² /Hz, r.m.s value of total acceleration 23.1G		

Contact layout



Note: The above layout is viewed from connector plug mating face

MIL-DTL-32139 Nano D-Sub Space Connectors

N06S Right Angle to PCB Plug Series

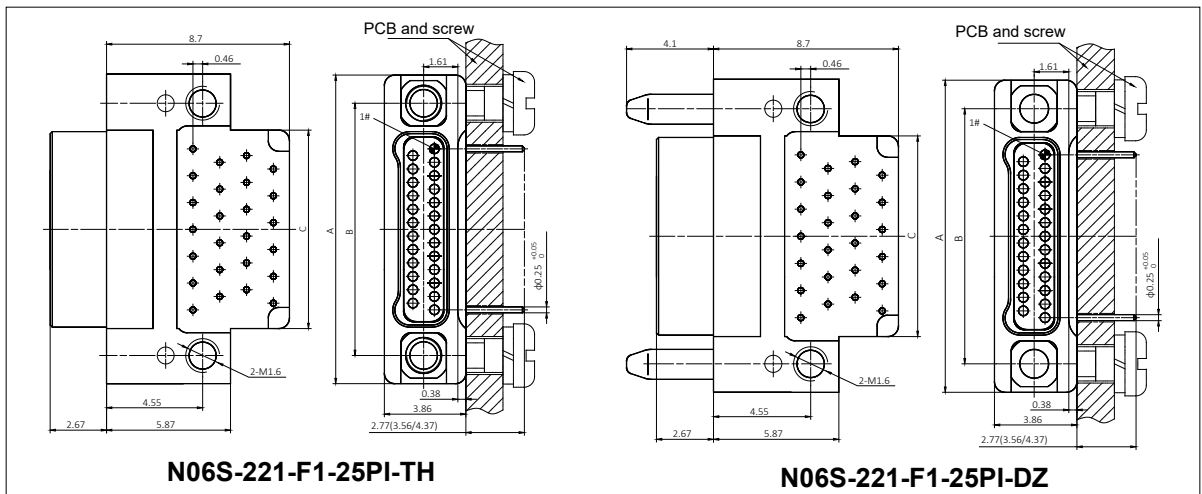
Order Code

Series	N06S	-2	2	1	-F	1	-25	PI	-TH	
Contact row: 2 — two rows										 N06S-221-F1-25PI-TH
Shell plating: 2 — nickel plating										
Contact plating: 1 — gold plating										 N06S-221-F1-25PI-DZ
Tail termination type: F — 90° right angle to PCB										
Tail length: 1 — 2.77mm 2 — 3.56mm 3 — 4.37mm										
Contact number: 9, 15, 21, 31, 37, 51, 65, 69										
Contact type: PI — pin in plug										
Locking type: DZ — guide pin TH — connect nut										

Notes

- N06S-221-F*-**PI-TH is usually mated with a receptacle which has a locking screw, N06S-221-F*-**PI-DZ is usually mated with a receptacle which has a guide hole
- 3 tail length options, other customized lengths can be produced

Outline dimension

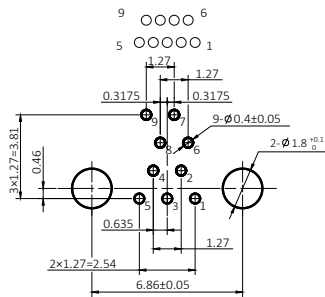
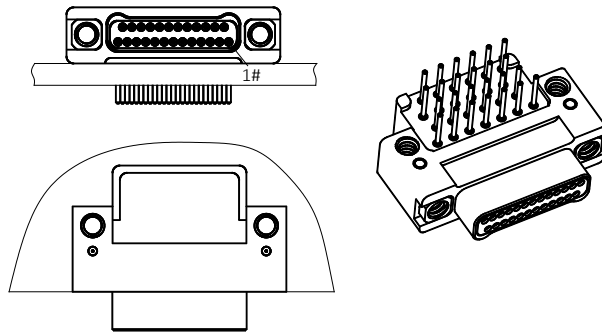


Pin count	Dimension			Pin count	Dimension			Pin count	Dimension		
	A	B	C		A	B	C		A	B	C
9 pins	9.63	6.86	4.25	15 pins	11.53	8.76	6.15	21 pins	13.44	10.67	8.06
25 pins	14.71	11.94	9.33	31 pins	16.61	13.84	11.23	37 pins	18.52	15.75	13.14
51 pins	22.96	20.19	17.58	65 pins	27.41	24.64	22.03	69 pins	28.68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

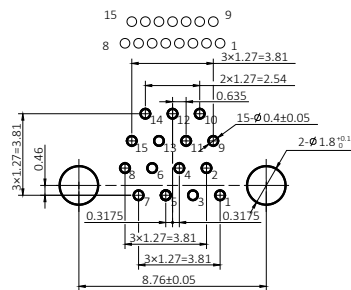
Note: All dimensions are in mm

MIL-DTL-32139 Nano D-Sub Space Connectors

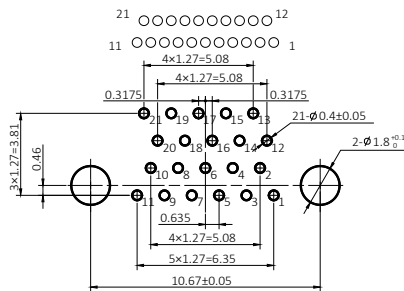
Suggested PCB Layout



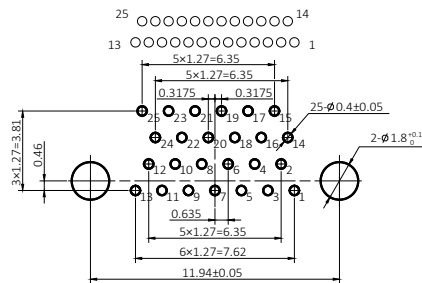
N06S-221-F1/F2/F3-9PI-TH



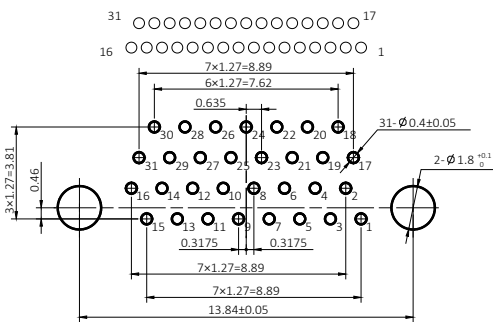
N06S-221-F1/F2/F3-15PI-TH



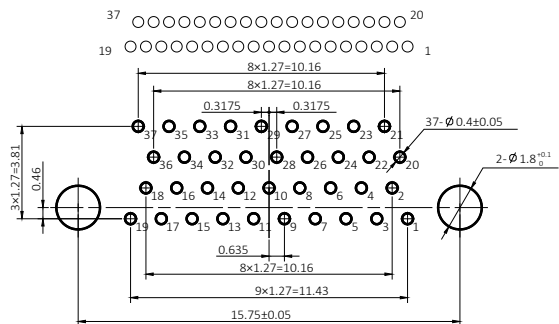
N06S-221-F1/F2/F3-21PI-TH



N06S-221-F1/F2/F3-25PI-TH



N06S-221-F1/F2/F3-31PI-TH



N06S-221-F1/F2/F3-37PI-TH

Note: All dimensions are in mm

MIL-DTL-32139 Nano D-Sub Space Connectors

N06 Right Angle to Flexible PCB Plug with Locking Screw Series

Order Code

Series	N06S	-2	2	1	-F	1	-25	PI	-JC
Contact row:	2 — two rows								
Shell plating:	2 — nickel plating								
Contact plating:	1 — gold plating								
Tail termination type:	F — 90° right angle to PCB								
Tail length:	1 — 2.77mm 2 — 3.56mm 3 — 4.37mm								
Contact number:	9, 15, 21, 31, 37, 51, 65, 69								
Contact type:	PI — pin in plug								
Locking type:	JC — locking screw (straight slot, C dimension=1.5mm) JC1 — locking screw (hex, optional, C dimension=2.1mm)								

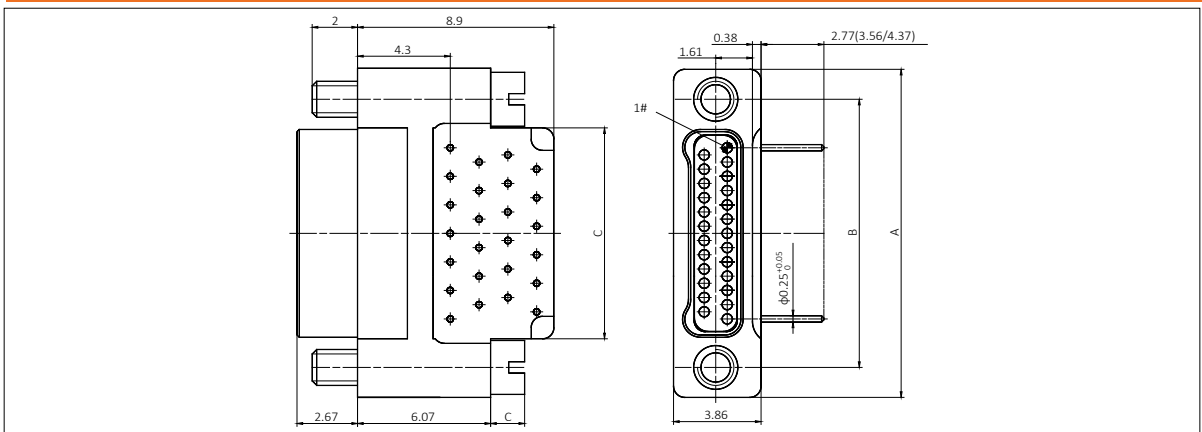


N06S-221-F1-25PI-JC

Notes

- 3 options of tail length, other customized lengths can be produced
- Connector is designed for Flexible Printed Circuits (FPC), it should be mated with a receptacle which is fitted with a nut.
- Tail should be soldered into the Flexible PCB
- Recommended JC (straight slot screw) screws, tightened by miniature straight screwdriver
- Optional JC1(hex) screws, tightened by 1.27mm hex screwdriver.

Outline dimension

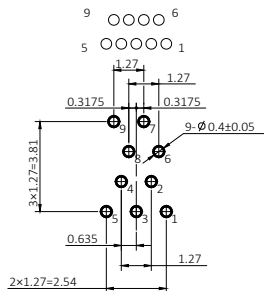
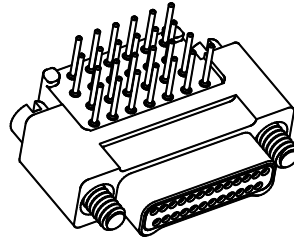
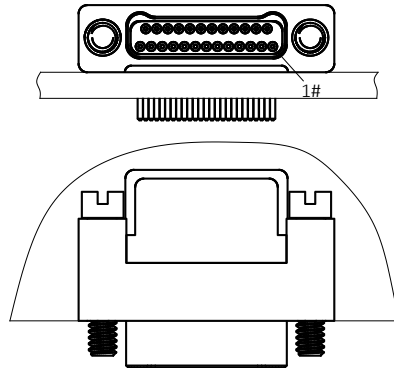


Pin count	Dimension			Pin count	Dimension			Pin count	Dimension		
	A	B	C		A	B	C		A	B	C
9 pins	9.63	6.86	4.25	15 pins	11.53	8.76	6.15	21 pins	13.44	10.67	8.06
25 pins	14.71	11.94	9.33	31 pins	16.61	13.84	11.23	37 pins	18.52	15.75	13.14
51 pins	22.96	20.19	17.58	65 pins	27.41	24.64	22.07	69 pins	28.68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

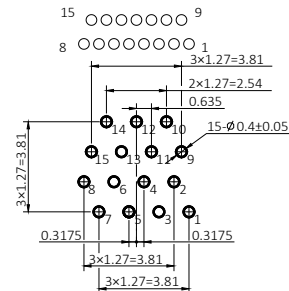
Note: All dimensions are in mm

MIL-DTL-32139 Nano D-Sub Space Connectors

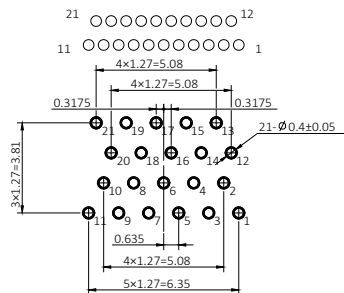
Suggested PCB Layout



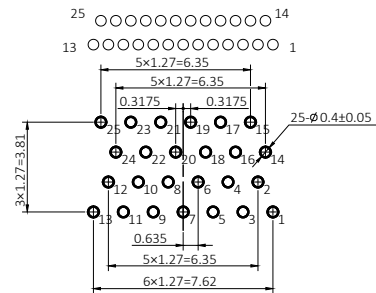
N06S-221-F1/F2/F3-9PI-JC



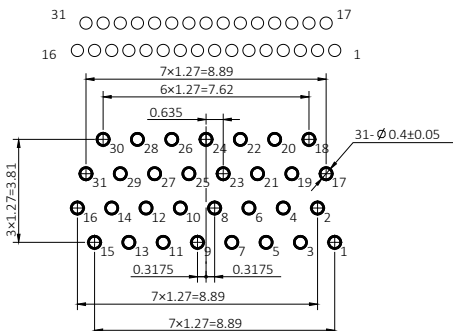
N06S-221-F1/F2/F3-15PI-JC



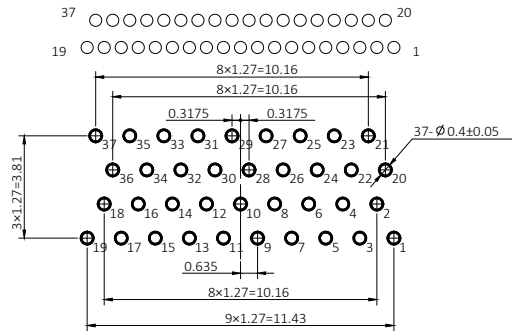
N06S-221-F1/F2/F3-21PI-JC



N06S-221-F1/F2/F3-25PI-JC



N06S-221-F1/F2/F3-31PI-JC

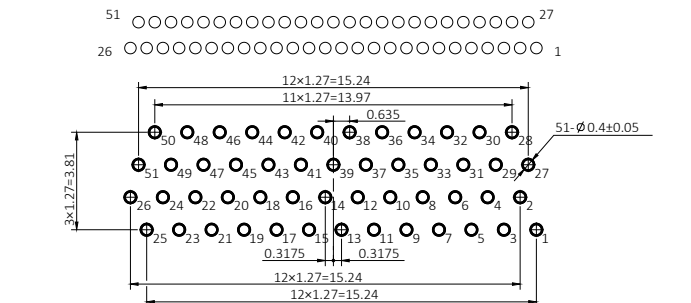
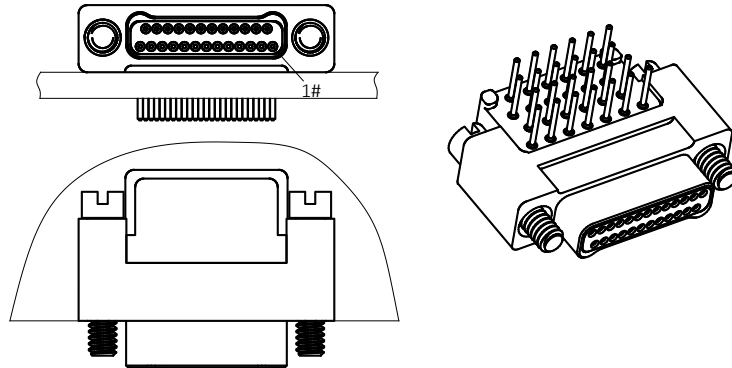


N06S-221-F1/F2/F3-37PI-JC

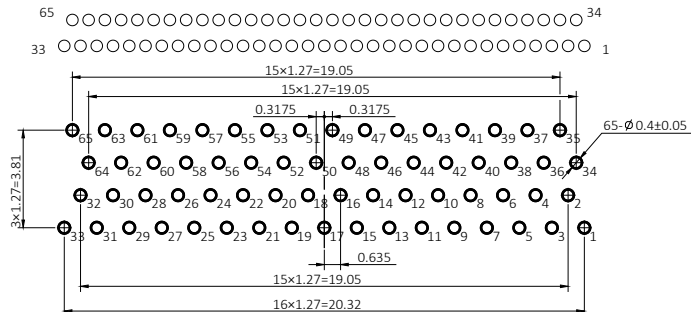
Note: All dimensions are in mm

MIL-DTL-32139 Nano D-Sub Space Connectors

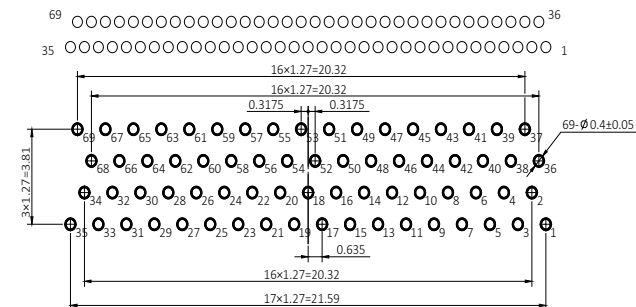
Suggested PCB Layout



N06S-221-F1/F2/F3-51PI-JC



N06S-221-F1/F2/F3-65PI-JC



N06S-221-F1/F2/F3-69PI-JC

Note: All dimensions are in mm

MIL-DTL-32139 Nano D-Sub Space Connectors

N06 Right Angle to PCB Receptacle Series

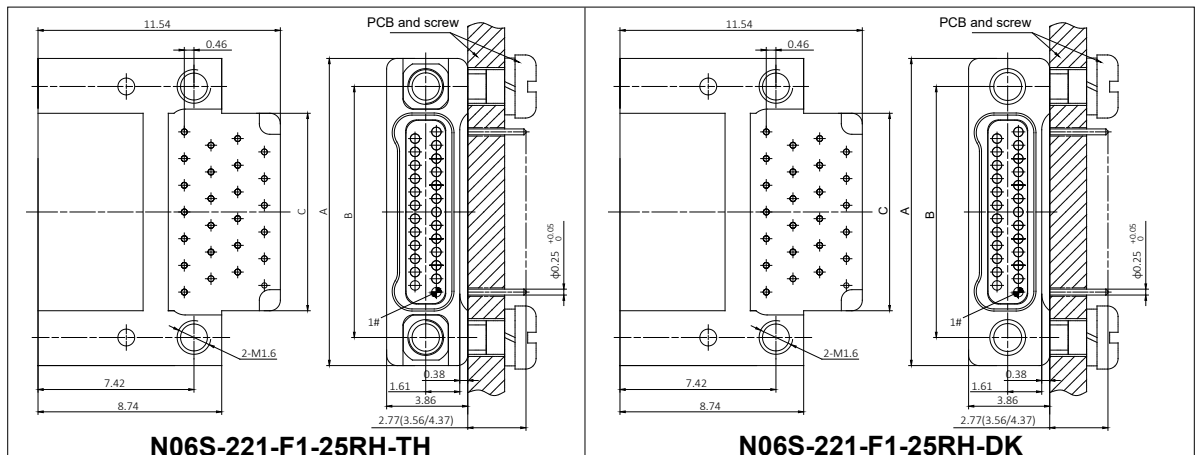
Order Code

Series	N06S	-2	2	1	-F	1	-25	RH	-DK	
Contact row:										
2 — two rows										
Shell plating:										
2 — nickel plating										
Contact plating:										N06S-221-F1-25RH-TH N06S-221-F1-25RH-DK
1 — gold plating										
Tail termination type:										
F — 90° right angle to PCB										
Tail length:										
1 — 2.77mm										
2 — 3.56mm										
3 — 4.37mm										
Contact number:										
9, 15, 21, 31, 37, 51, 65, 69										
Contact type:										
RH — socket in receptacle										
Locking type:										
DK — Guide Hole										
TH — Connect Nut										

Notes

- N06S-221-F*-**RH-TH is usually mated to a plug with a locking screw, N06S-221-F*-**RH-DK is usually mated to a plug with a guide pin
- 3 options of tail length, other customized lengths can be produced

Outline dimension

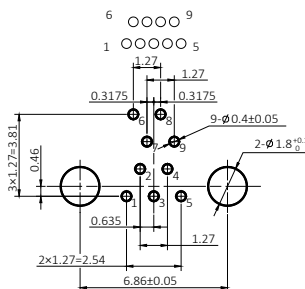
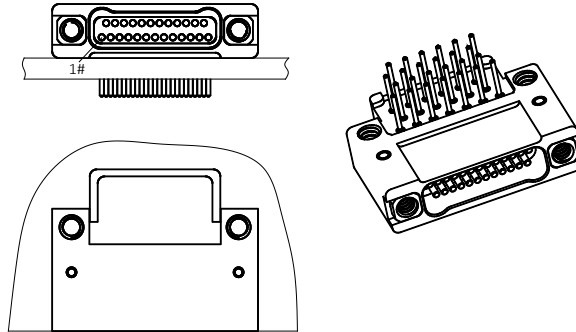


Pin count	Dimension			Pin count	Dimension			Pin count	Dimension		
	A	B	C		A	B	C		A	B	C
9 pins	9.63	6.86	4.25	15 pins	11.53	8.76	6.15	21 pins	13.44	10.67	8.06
25 pins	14.71	11.94	9.33	31 pins	16.61	13.84	11.23	37 pins	18.52	15.75	13.14
51 pins	22.96	20.19	17.58	65 pins	27.41	24.64	22.03	69 pins	28.68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

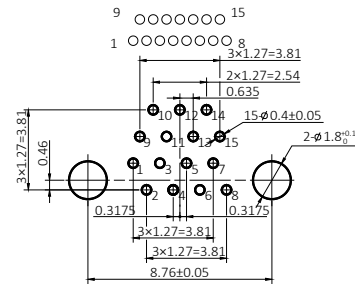
Note: All dimensions are in mm

MIL-DTL-32139 Nano D-Sub Space Connectors

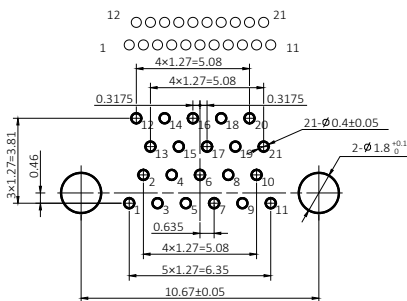
Suggested PCB Layout



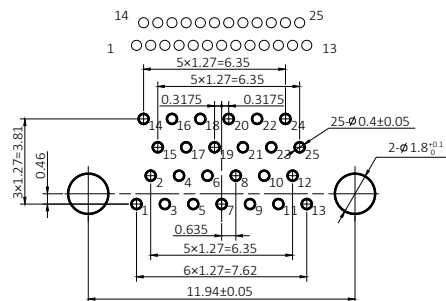
N06S-221-F1/F2/F3-9RH-TH



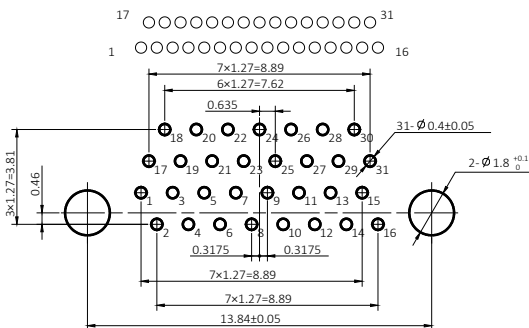
N06S-221-F1/F2/F3-15RH-TH



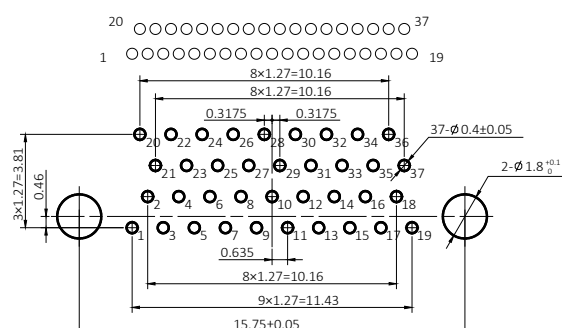
N06S-221-F1/F2/F3-21RH-TH



N06S-221-F1/F2/F3-25RH-TH



N06S-221-F1/F2/F3-31RH-TH

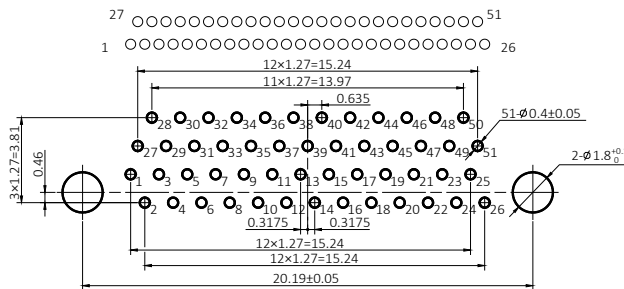
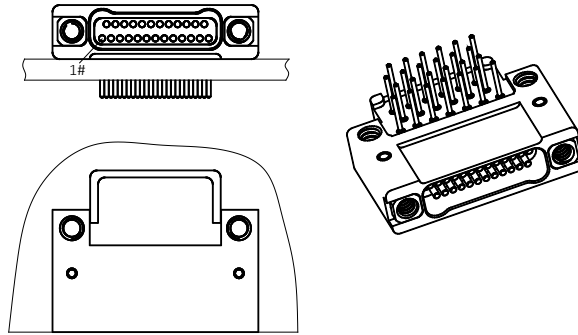


N06S-221-F1/F2/F3-37RH-TH

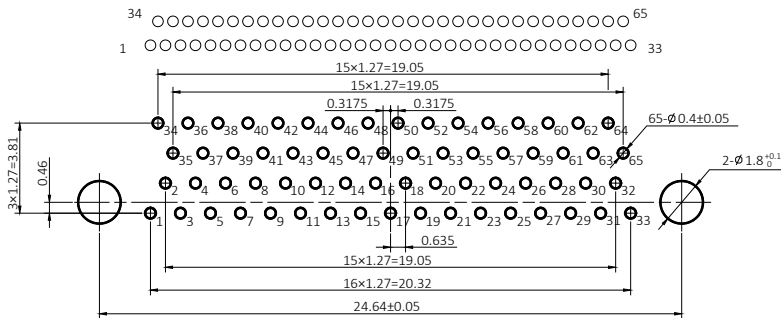
Note: All dimensions are in mm

MIL-DTL-32139 Nano D-Sub Space Connectors

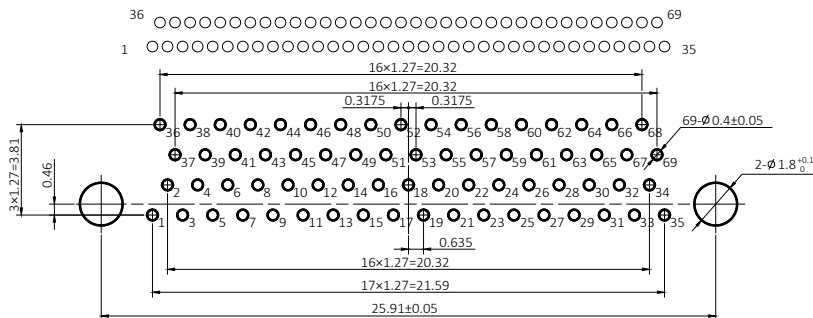
Suggested PCB Layout



N06S-221-F1/F2/F3-51RH-TH



N06S-221-F1/F2/F3-65RH-TH



N06S-221-F1/F2/F3-69RH-TH

Note: All dimensions are in mm