

# FILTERED MICRO-D CONNECTORS

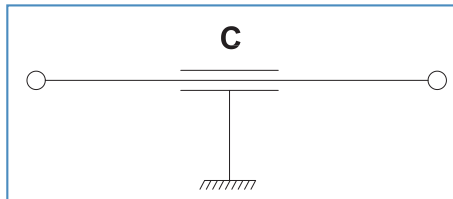
Integrated systems require more power with major current fluctuations, creating a “noisy” electromagnetic field. Filtered Micro-D connectors are designed to protect your equipment from this electromagnetic interference.

## ► General configuration

Axon’ filtered Micro-D connectors are available with two different types of filters: C filter and PI filter, both low-pass. High frequency signals are attenuated, whilst low frequency and DC signals pass through.

### ► C FILTER

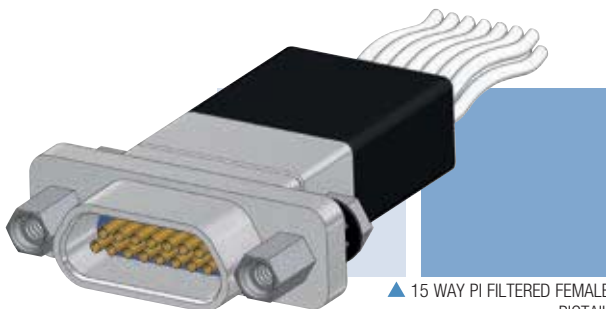
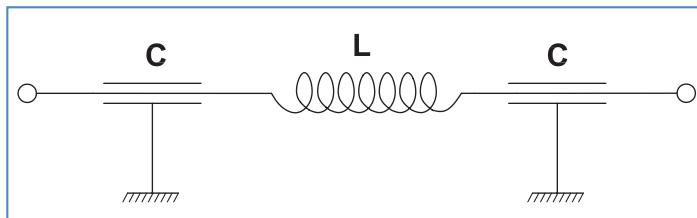
- One capacitor per filtered pin.
- Best suited for high input and output impedance and when a fast attenuation is not necessary.
- When small size is needed.



▲ 9 WAY PI FILTERED BS FEMALE CONNECTOR

### ► PI FILTER

- Two capacitors on either side of an inductor per filtered pin.
- Used for high impedance and a sharp attenuation.
- Performances at high frequency are excellent.



▲ 15 WAY PI FILTERED FEMALE PIGTAIL



▲ 37 WAY C FILTERED CBR FEMALE CONNECTOR

## ► Electrical & mechanical characteristics

CHARACTERISTIC	SPECIFICATION	TEST METHOD
CURRENT RATING	3 A max.	EIA-364-70
SIGNAL CONTACT RESISTANCE	8 mΩ max.	EIA-364-06
INSULATION RESISTANCE	5000 MΩ min. @ 500 V DC	EIA-364-21
DIELECTRIC WITHSTANDING VOLTAGE - SEA LEVEL 0 m	125V DC	EIA-364-20
CONTACT ENGAGING AND SEPARATION FORCE	170 g max. (6 oz) 14 g min. (0.5 oz)	EIA-364-37
CONNECTOR MATING AND DE-MATING FORCE	283 g (10 oz) x number of contacts max.	EIA-364-13
CONTACT RETENTION	2.26 kg (5 lbs) for 5 seconds min.	EIA-364-29
DURABILITY	500 mating cycles min.	EIA-364-09
TEMPERATURE RANGES - STANDARD	-55°C / +125°C	
VIBRATION	20 g's -No discontinuity >1μs	EIA-364-28 -TEST CONDITION IV
SHOCK	50 g's -No discontinuity >1μs	EIA-364-27 -TEST CONDITION E
SALT SPRAY	48 hours	EIA-364-26 -TEST CONDITION B
HUMIDITY	Insulation resistance > 1MΩ	EIA-364-31 - METHOD IV

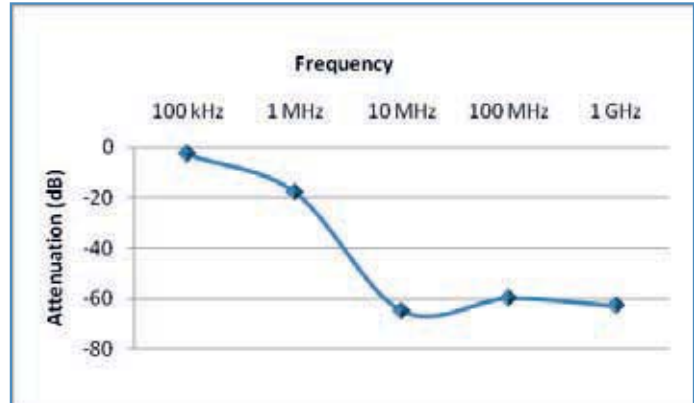
## ► Material & Finish

COMPONENT	MATERIAL	FINISH
MALE CONTACT (TWIST PIN)	COPPER AND BERYLLIUM COPPER.	GOLD PLATING IN ACCORDANCE WITH ASTM-B488, TYPE II, CLASS 1 (1.27μm (0.050") MIN.), CODE C OVER NICKEL UNDERPLATE IN ACCORDANCE WITH SAE-AMS-QQ-N-290 CLASS 2 (1.27μm (0.050") TO 3.81μm (0.150"))
FEMALE CONTACT	COPPER ALLOY	
CAPACITORS	PLANAR CERAMIC ARRAY	
INDUCTORS	FERRITE	
METAL SHELL	ALUMINIUM ALLOY, TYPE 6061 IN ACCORDANCE WITH SAE-AMS-QQ-A-250/11	YELLOW CHROMATE OVER CADMIUM : IN ACCORDANCE WITH SAE-AMS-QQ-P-416, TYPE II, CLASS 3 ELECTROLESS NICKEL PLATING IN ACCORDANCE WITH SAE-AMS2404, CLASS 3 OR 4, .0005 INCH MIN.
	STAINLESS STEEL, 300 SERIES	PASSIVATION IN ACCORDANCE WITH SAE-AMS2700
PLASTIC SHELL/ INSERT / PCB TRAY	LIQUID CRYSTAL POLYMER, 30% LOADED GLASS FIBRE POLYESTER, 94VO, IN ACCORDANCE WITH MIL-M-24519 (200°C)	
INTERFACIAL SEAL	FLUOROSILICONE RUBBER IN ACCORDANCE WITH A-A-59588	
HARDWARE	STAINLESS STEEL, 300 SERIES	PASSIVATION IN ACCORDANCE WITH SAE-AMS2700
ENCAPSULANT	EPOXY RESIN	
INSULATED WIRE	PTFE INSULATED SILVER PLATED COPPER IN ACCORDANCE WITH NEMA-HP3 PTFE INSULATED SILVER PLATED COPPER IN ACCORDANCE WITH SAE-AS22759/11 ETFE INSULATED SILVER PLATED COPPER IN ACCORDANCE WITH SAE-AS22759/33	
UNINSULATED WIRE	GOLD PLATED SOLID COPPER WIRE IN ACCORDANCE WITH A-A-59551 TIN PLATED SOLID COPPER WIRE IN ACCORDANCE WITH A-A-59551	

## ▶ Electrical characteristics of the filters



▲ 9 WAY PI FILTERED BS FEMALE CONNECTOR



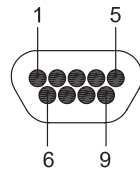
▲ ATTENUATION OF THE AXON® 9 WAY PI FILTER WITH A CAPACITANCE OF 66000 PF

## ▶ Contact arrangements

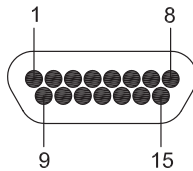
Axon® filtered Micro-D connectors are available in 7 sizes, from 9 to 51 contacts on 2 rows. They are fully intermateable with standard Micro-D connectors.

### ▶ MATING FACE OF MALE RECTANGULAR CONNECTOR

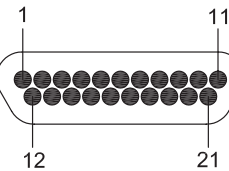
- 1.27 mm (.050") contact spacing.
- 1.09 mm (.043") spacing between rows.



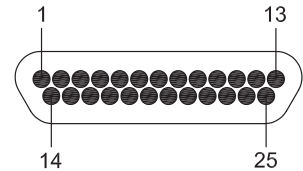
9 CONTACTS



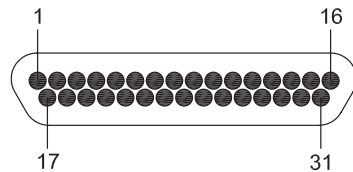
15 CONTACTS



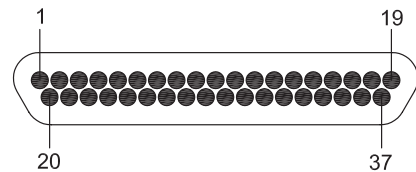
21 CONTACTS



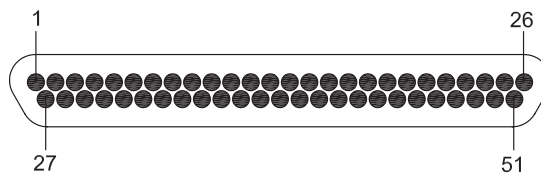
25 CONTACTS



31 CONTACTS



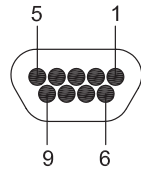
37 CONTACTS



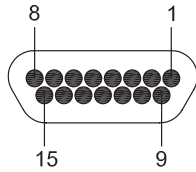
51 CONTACTS DUAL ROW

## ▶ MATING FACE OF FEMALE RECTANGULAR CONNECTOR

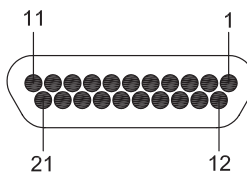
- 1.27 mm (.050") contact spacing.
- 1.09 mm (.043") spacing between rows.



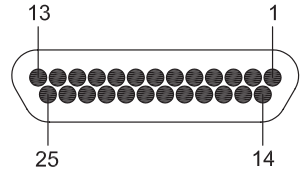
**9 CONTACTS**



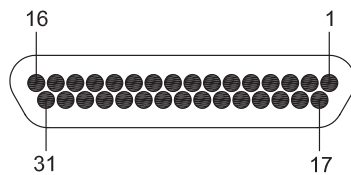
**15 CONTACTS**



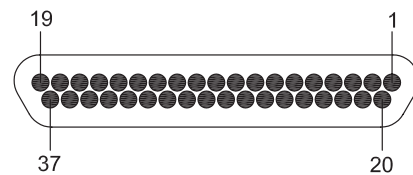
**21 CONTACTS**



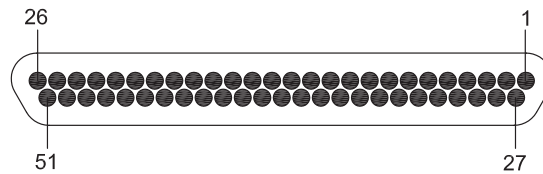
**25 CONTACTS**



**31 CONTACTS**

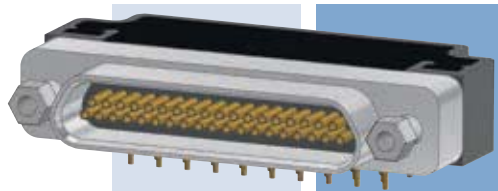


**37 CONTACTS**



**51 CONTACTS DUAL ROW**

## ▶ Axon' standard range of filtered Micro-D



▲ CBR 0.100" - CONDENSED RIGHT ANGLE MOUNT CONNECTORS



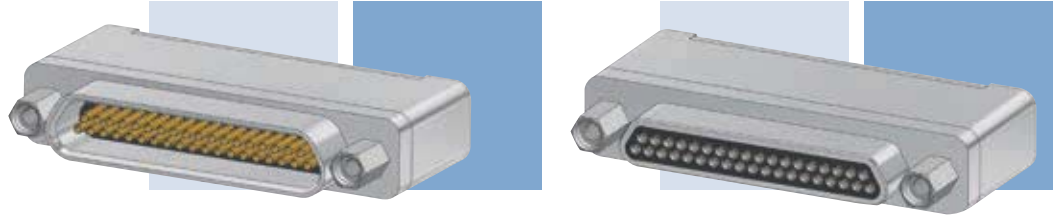
▲ BS 0.050" - VERTICAL MOUNT CONNECTORS



▲ PIGTAIL CONNECTORS

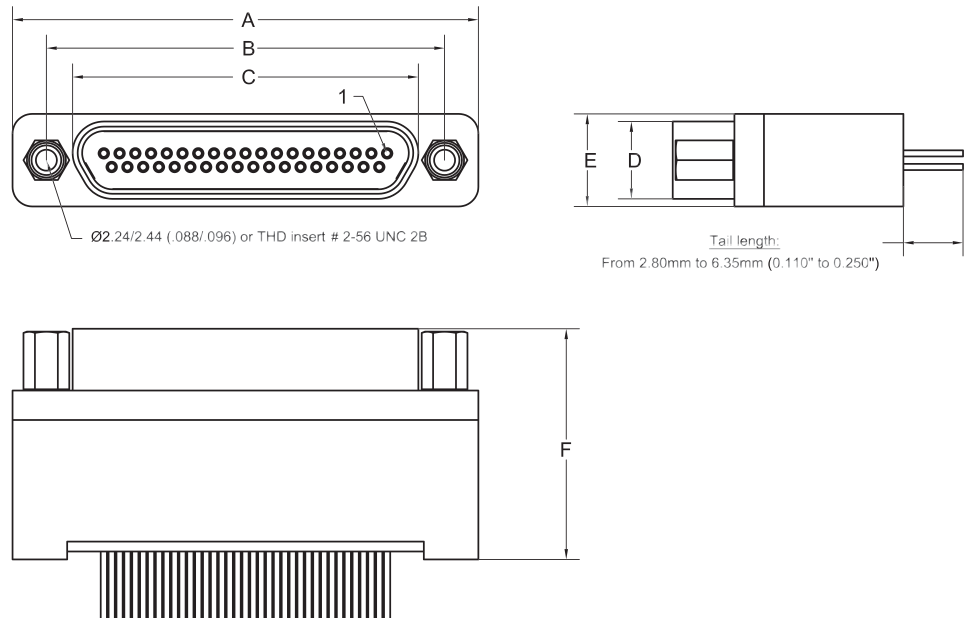
## ► PCB filtered connectors

### ► BS CONNECTORS TYPE 0.050" PITCH METAL SHELL



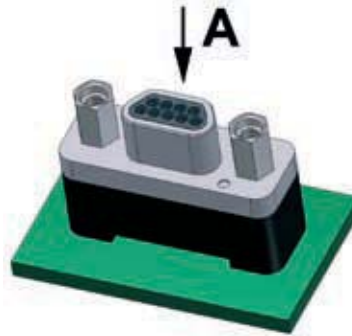
### DIMENSIONS

Dimensions are in millimetres (inches).

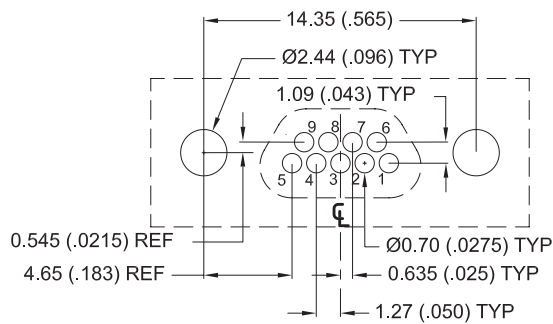


	A ± 0.25 (±.010)	B ± 0.13 (±.005)	C max		D max		E max	F max	
			Male	Female	Male	Female		C filter	PI filter
9P / 9S	19.94 .785	14.35 .565	8.48 .334	10.16 .400	4.69 .185	6.35 .250	7.87 .310	13.00 .512	20.00 .788
15P / 15S	23.75 .935	18.16 .715	12.29 .484	14.00 .551	4.69 .185	6.35 .250	7.87 .310	13.00 .512	20.00 .788
21P / 21S	27.56 1.085	21.97 0.865	16.10 .634	17.81 .701	4.69 .185	6.35 .250	7.87 .310	13.00 .512	20.00 .788
25P / 25S	30.10 1.185	24.51 0.965	18.64 .734	20.35 .801	4.69 .185	6.35 .250	7.87 .310	13.00 .512	20.00 .788
31P / 31S	33.91 1.335	28.32 1.115	22.45 .884	24.16 .951	4.69 .185	6.35 .250	7.87 .310	13.00 .512	20.00 .788
37P / 37S	37.72 1.485	32.13 1.265	26.26 1.034	27.96 1.101	4.69 .185	6.35 .250	7.87 .310	13.00 .512	20.00 .788

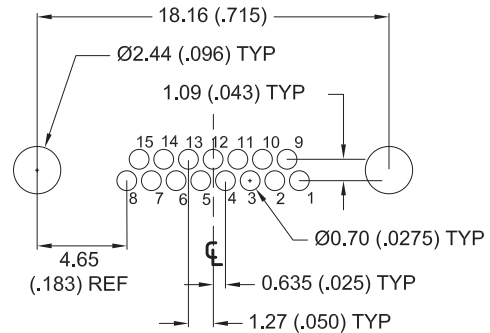
# PCB LAYOUT FOR FILTERED BS TYPE 0.050" PITCH MALE CONNECTORS



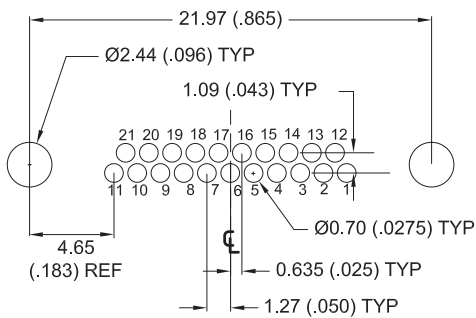
**9 CONTACTS - view A**



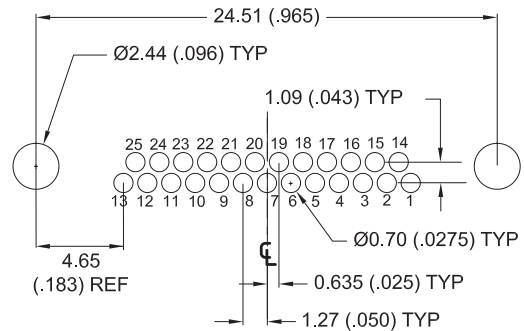
**15 CONTACTS - view A**



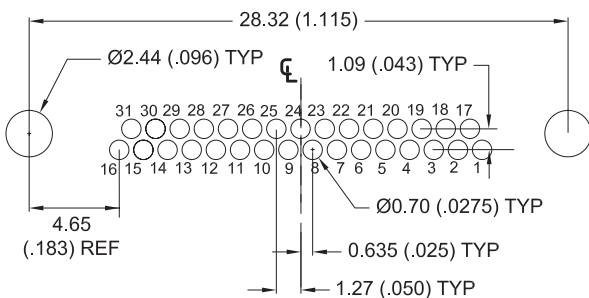
**21 CONTACTS - view A**



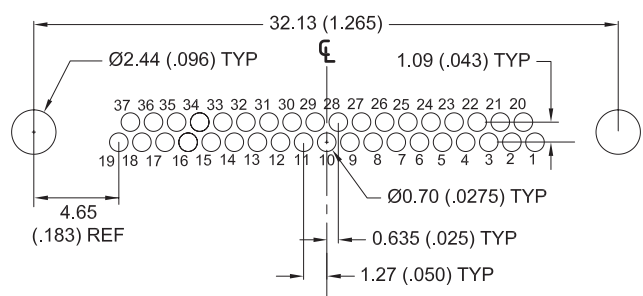
**25 CONTACTS - view A**



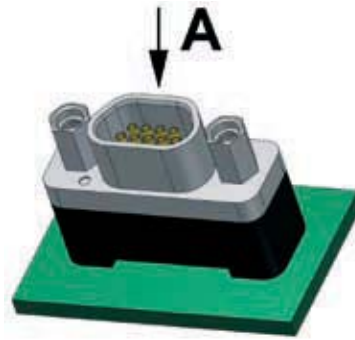
**31 CONTACTS - view A**



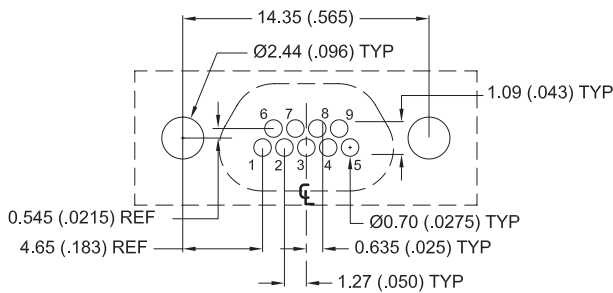
**37 CONTACTS - view A**



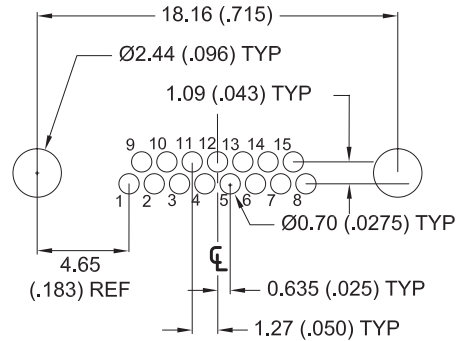
# PCB LAYOUT FOR FILTERED BS TYPE 0.050" PITCH FEMALE CONNECTORS



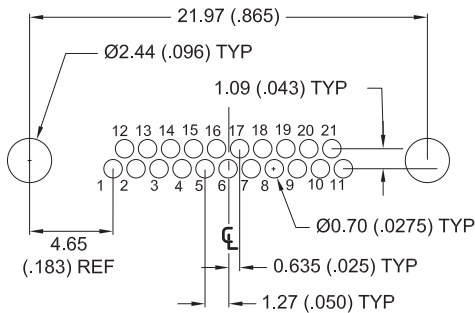
**9 CONTACTS - VIEW A**



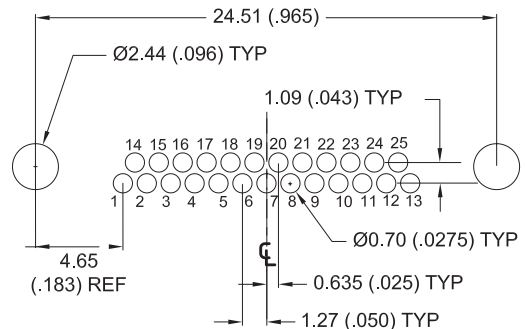
**15 CONTACTS - VIEW A**



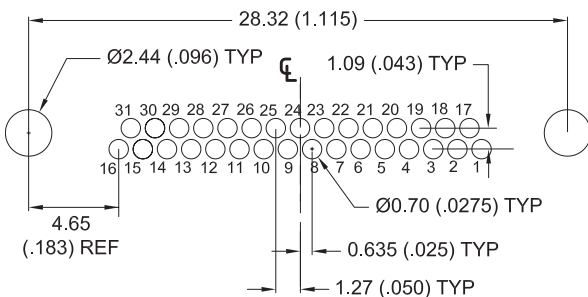
**21 CONTACTS - VIEW A**



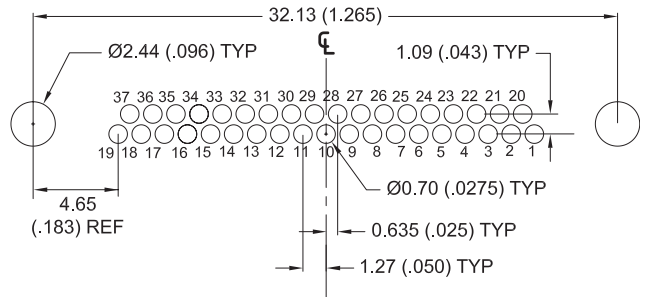
**25 CONTACTS - VIEW A**



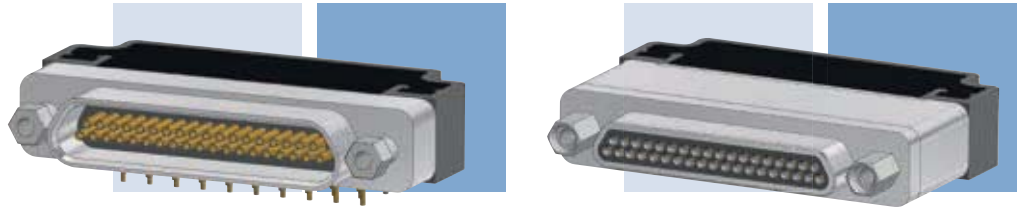
**31 CONTACTS - VIEW A**



**37 CONTACTS - VIEW A**

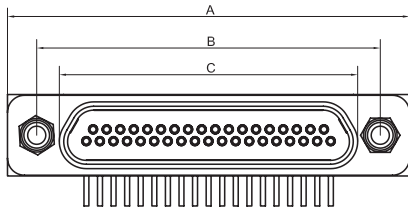


## ➔ CBR CONNECTORS 0.100" METAL SHELL

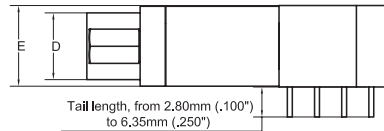


### DIMENSIONS

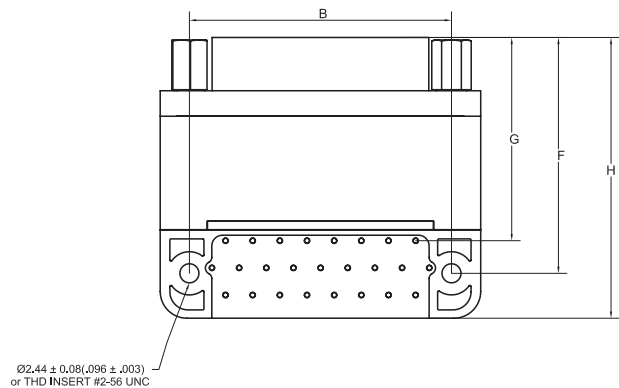
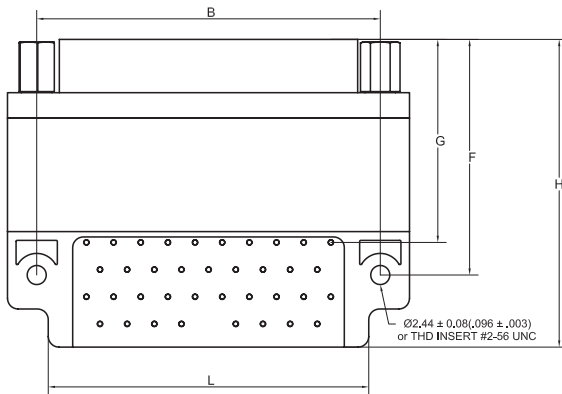
Dimensions are in millimetres (inches).



31-37 way connectors



9-25 way connectors

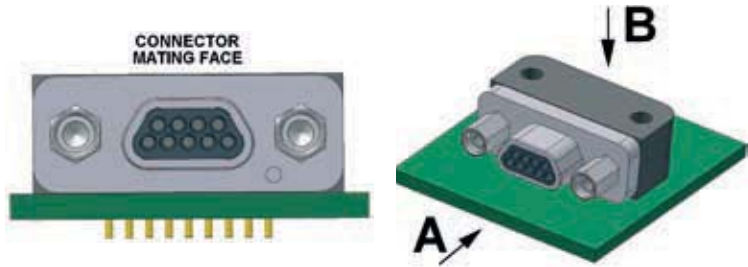


	A ± 0.25 (±.010)	B ± 0.13 (±.005)	C max		D max		E max	F max		G max		H max	
			Male	Female	Male	Female		C filter	PI filter	C filter	PI filter	C filter	PI filter
9P / 9S	19.94 .785	14.35 .565	8.48 .334	10.16 .400	4.69 .185	6.35 .250	7.82 .308	16.00 .630	22.50 .886	13.00 .512	20.00 .788	21.00 .827	29.00 1.142
15P / 15S	23.75 .935	18.16 .715	12.29 .484	14.00 .551	4.69 .185	6.35 .250	7.82 .308	16.00 .630	22.50 .886	13.00 .512	20.00 .788	21.00 .827	29.00 1.142
21P / 21S	27.56 1.085	21.97 0.865	16.10 .634	17.81 .701	4.69 .185	6.35 .250	7.82 .308	16.00 .630	22.50 .886	13.00 .512	20.00 .788	21.00 .827	29.00 1.142
25P / 25S	30.10 1.185	24.51 0.965	18.64 .734	20.35 .801	4.69 .185	6.35 .250	7.82 .308	16.00 .630	22.50 .886	13.00 .512	20.00 .788	21.00 .827	29.00 1.142
31P / 31S	33.91 1.335	28.32 1.115	22.45 .884	24.16 .951	4.69 .185	6.35 .250	7.82 .308	16.00 .630	22.50 .886	13.00 .512	20.00 .788	22.00 .866	29.00 1.142
37P / 37S	37.72 1.485	32.13 1.265	26.26 1.034	27.96 1.101	4.69 .185	6.35 .250	7.82 .308	16.00 .630	22.50 .886	13.00 .512	20.00 .788	22.00 .866	29.00 1.142



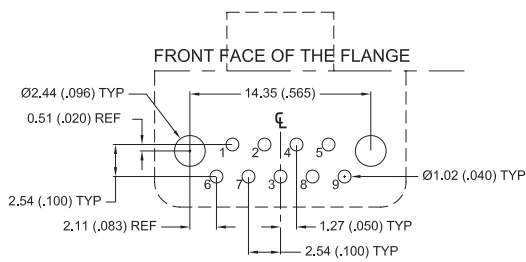
# PCB LAYOUT FOR FILTERED CBR TYPE 0.100" PITCH - MALE CONNECTORS

VIEW A



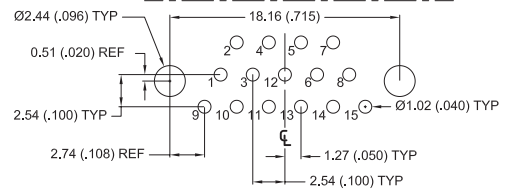
9 CONTACTS - VIEW B

PCB  
BOARD LAYOUT



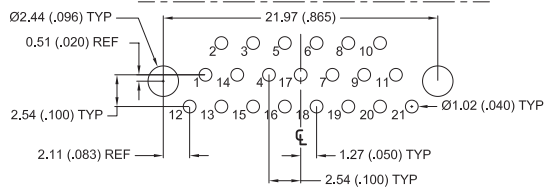
15 CONTACTS - VIEW B

FRONT FACE OF THE FLANGE



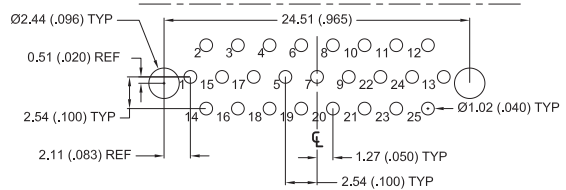
21 CONTACTS - VIEW B

FRONT FACE OF THE FLANGE



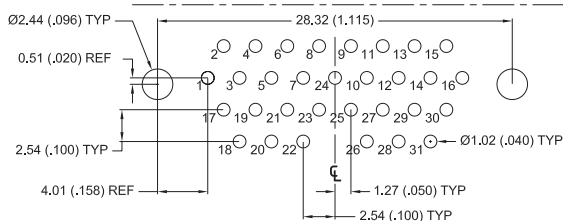
25 CONTACTS - VIEW B

FRONT FACE OF THE FLANGE



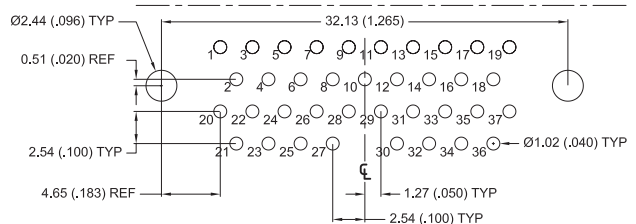
31 CONTACTS - VIEW B

FRONT FACE OF THE FLANGE



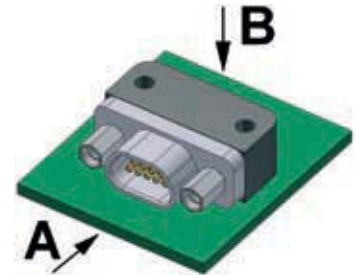
37 CONTACTS - VIEW B

FRONT FACE OF THE FLANGE



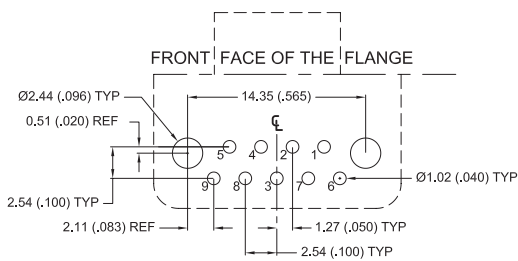
# PCB LAYOUT FOR FILTERED CBR TYPE 0.100" PITCH - FEMALE CONNECTORS

VIEW A



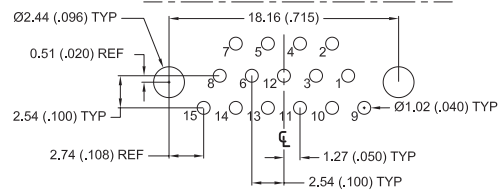
9 CONTACTS - VIEW B

PCB  
BOARD LAYOUT



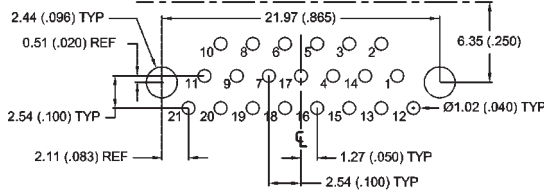
15 CONTACTS - VIEW B

FRONT FACE OF THE FLANGE



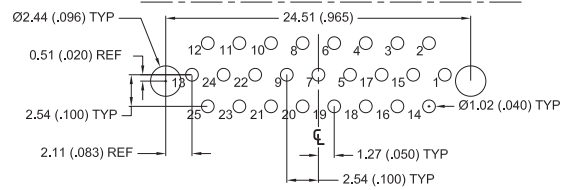
21 CONTACTS - VIEW B

FRONT FACE OF THE FLANGE



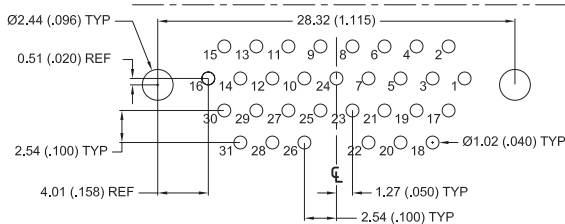
25 CONTACTS - VIEW B

FRONT FACE OF THE FLANGE



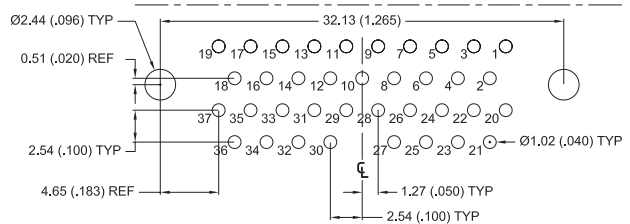
31 CONTACTS - VIEW B

FRONT FACE OF THE FLANGE

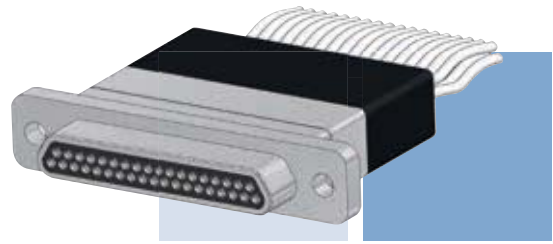


37 CONTACTS - VIEW B

FRONT FACE OF THE FLANGE



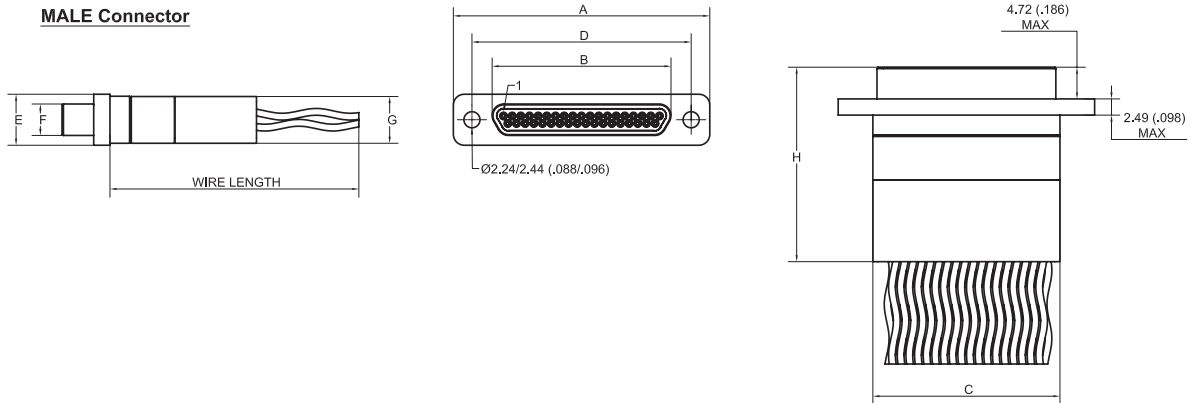
## ▶ Pigtail connectors



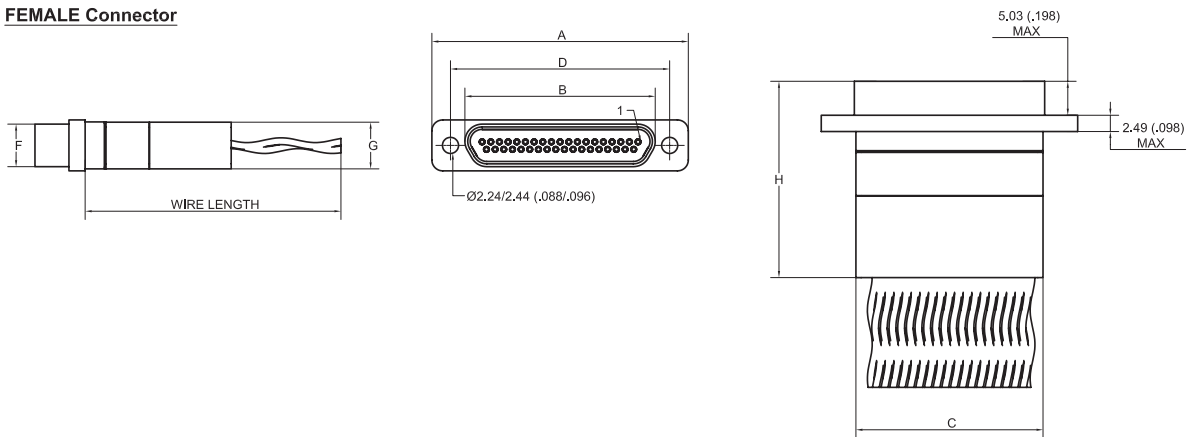
### DIMENSIONS

Dimensions are in millimetres (inches).

#### MALE Connector



#### FEMALE Connector



	A ± 0.25 (±.010)	B max		C -0.46/+0.25 (-.018/+ .010)	D ± 0.13 (±.005)	E ± 0.25 (±.010)	F max		G max	H max	
		Male	female				Male	female		C filter	PI filter
9P / 9S	19.69 .775	8.48 .334	10.16 .400	9.91 .390	14.35 .565	7.57 .298	4.69 .185	6.35 .250	6.86 .270	21.00 .827	25.00 .985
15P / 15S	23.50 .925	12.29 .484	14.00 .551	13.72 .540	18.16 .715	7.57 .298	4.69 .185	6.35 .250	6.86 .270	21.00 .827	25.00 .985
21P / 21S	27.31 1.075	16.10 .634	17.81 .701	17.53 .690	21.97 .865	7.57 .298	4.69 .185	6.35 .250	6.86 .270	21.00 .827	25.00 .985
25P / 25S	29.85 1.175	18.64 .734	20.35 .801	20.07 .790	24.51 .965	7.57 .298	4.69 .185	6.35 .250	6.86 .270	21.00 .827	25.00 .985
31P / 31S	33.66 1.325	22.45 .884	24.16 .951	23.88 .940	28.32 1.115	7.57 .298	4.69 .185	6.35 .250	6.86 .270	21.00 .827	25.00 .985
37P / 37S	37.47 1.475	26.26 1.034	27.96 1.101	27.69 1.090	32.13 1.265	7.57 .298	4.69 .185	6.35 .250	6.86 .270	21.00 .827	25.00 .985
51DR P / 51DR S	46.36 1.825	35.15 1.384	36.83 1.450	36.58 1.440	41.02 1.615	7.57 .298	4.69 .185	6.35 .250	6.86 .270	21.00 .827	25.00 .985

## ▶ Custom designs

Please contact Axon' to request special designs of filtered Micro-D connectors.

A few examples of custom-made connectors are illustrated below.

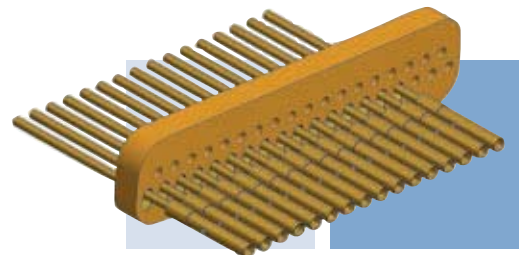
### ▶ 37 WAY PARTIALLY C-FILTERED CONNECTOR



▲ FILTERED CONNECTOR

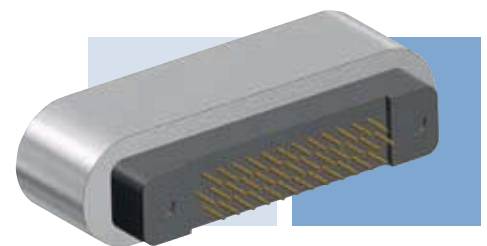


▲ 37 WAY FILTERED CONNECTOR



▲ "PLANAR FILTER" WITH SELECTIVE FILTERING

### ▶ 37 WAY C-FILTERED PANEL MOUNT CONNECTOR WITH EMI PROTECTION



▲ CUSTOM FILTERED BS CONNECTORS