

MIL-C-24308 Style (D-Sub) Filter Connectors

Amphenol offers a variety of filtered D-Sub connectors to address aerospace and commercial EMI requirements. There are two products in particular which are designed for aerospace applications where high reliability and superior environmental and electrical performance are required. The 481 series of filtered D-Sub connectors has been in production for over 20 years using tubular capacitor filter technology. In the late 1980's, Amphenol developed a planar filter



capacitor version of the same connector, the 308 series. As a result, Amphenol has the widest product offering in the industry and can provide either technology as the application and production requirements dictate.

308 Series – Planar Capacitor Technology

- superior pin-pin cross talk isolation
- cost effective for small quantities
- can accommodate a wider range of capacitance values than planar designs
- fully tooled in medium density pin and selected socket and high density arrangements
- short production leadtimes
- solderless stress-isolated construction (see page 23 for details)

Quality Conformance Inspection

The 308 series connectors have been extensively qualified per the requirements of MIL-C-24308. All products shipped receive the following inspection tests:

- 100% visual and mechanical inspection
- 100% capacitance, dielectric withstanding voltage, insulation resistance and dissipation factor testing
- sample insertion loss testing (AQL 1.0%)

For high reliability applications, the following inspection tests or certifications are also available:

- thermal shock
- elevated temperature voltage conditioning
- elevated temperature insulation resistance and capacitance
- outgassing per JSC-SPR-0022 for space borne applications
- baseline and single lot date code manufacturing
- other tests as required (consult the factory)

308 Special



Filtered D-Sub programmable



EMI Grounded Special

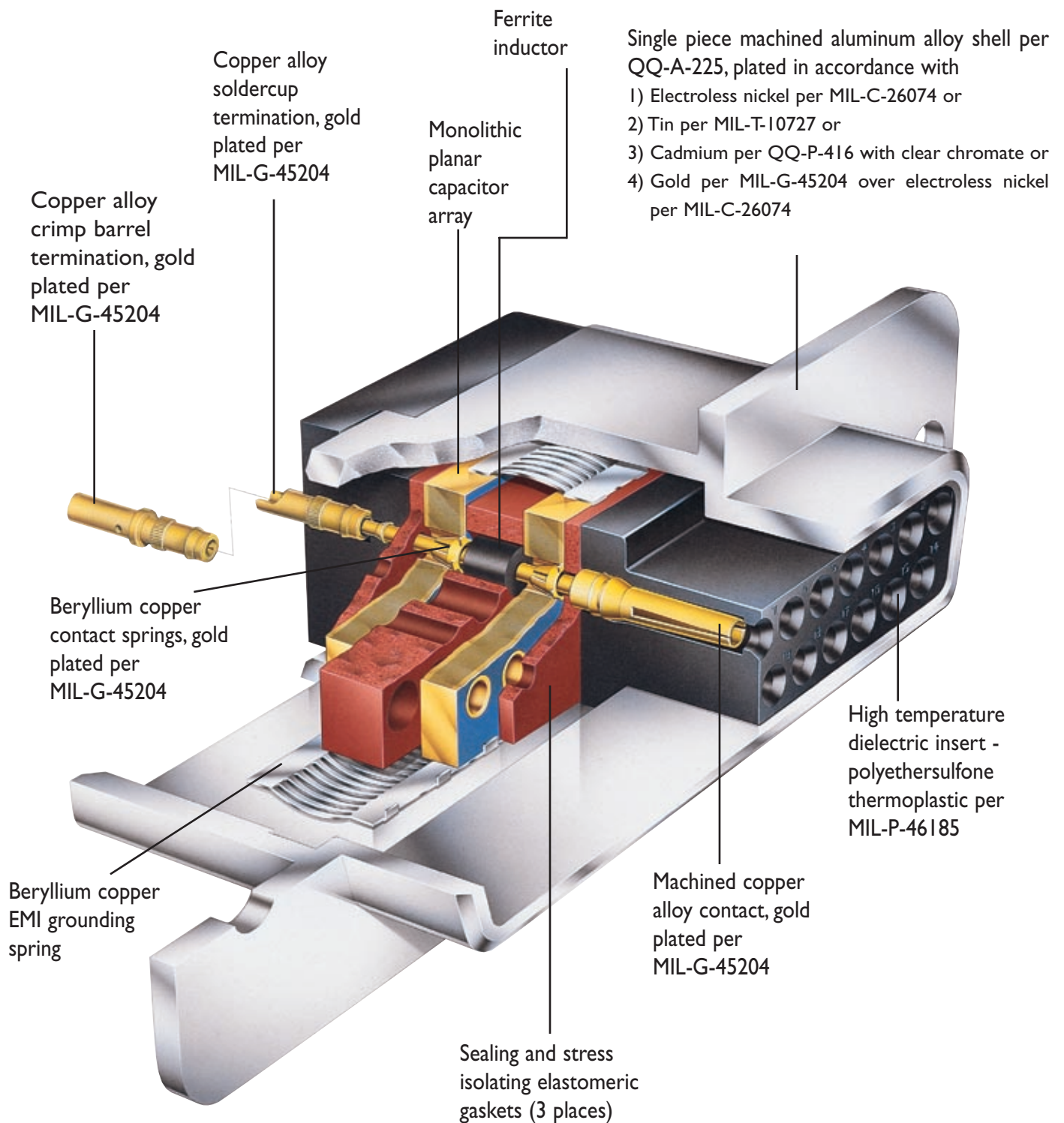


Zinc Nickel Plating

Environmentally friendly, conductive and able to withstand up to 2000 hours of salt spray per ASTM-B117

Please consult factory for any custom arrangements

Planar D-Sub Filter Connector Construction and Material Specifications



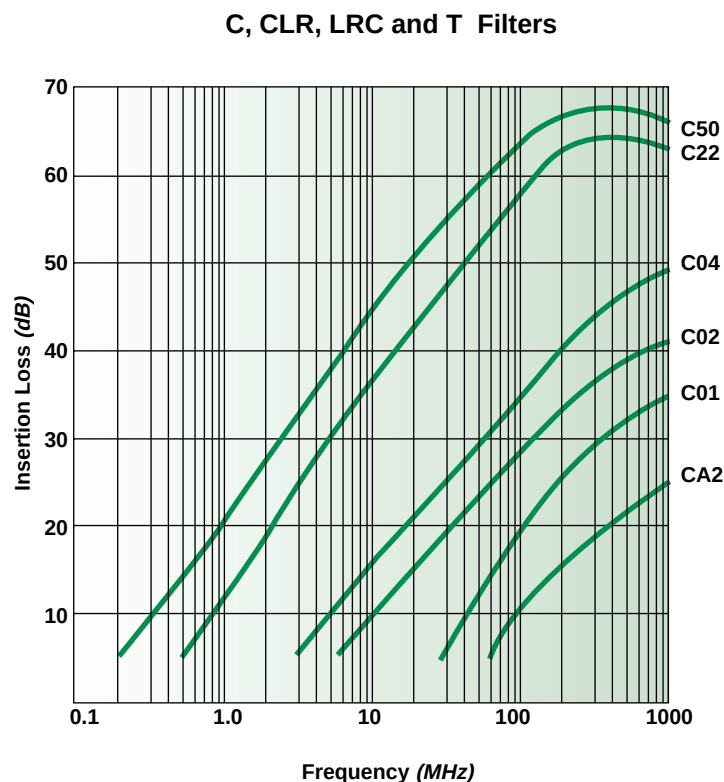
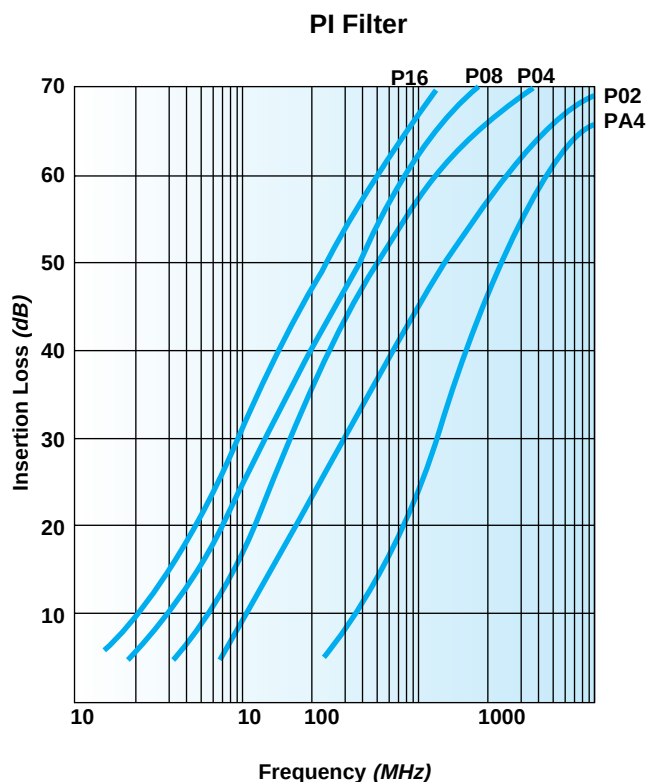
308 Series Electrical Characteristics

Filter Circuit	PI					C,CLR,LRC,T					
Filter Type	PA4	P02	P04	P08	P16	CA2	C01	C02	C04	C22†	C50†
Capacitance (pF) (@ 25°C, 1kHz & 1.0 VRMS)	400 to 800	1800 to 3600	4000 to 8000	8000 to 16000	16000 to 32000	200 to 400	900 to 1800	1800 to 3600	4000 to 8000	22000 to 40000	50000 to 100000
Insertion Loss (dB min.) (per MIL-STD-220 at 25°C & no load)	.1 MHz	—	—	—	—	—	—	—	—	—	3
	1 MHz	—	—	2	5	8	—	—	—	10	15
	10 MHz	2	10	15	18	28	4	8	13	26	35
	100 MHz	20	38	50	55	62	10	20	25	33	45
	1000 MHz	58	60	60	63	68	25	35	40	50	52
Working Voltage (VDC) (@ 25°C & sea level)	200									100	
Dielectric Withstanding Voltage (VDC) (@ 25°C & 50 mA max. charging current)	500									300	
Insulation Resistance (Gohms) (@ 25°C & working voltage)	10										
Contact Current Rating (continuous max., DC amperes)	5										
Filter RF Current Rating (amperes) (max. @ any frequency)	3										

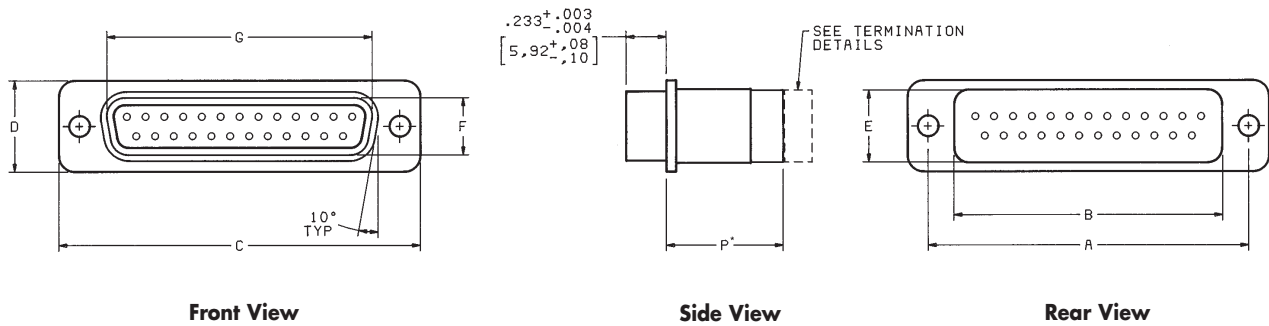
Note: Other capacitance values, mixed capacitance arrangements, ground and insulated contacts are available.
Consult the factory for your particular application.

[†] Not available in high density arrangements

Typical Insertion Loss Performance



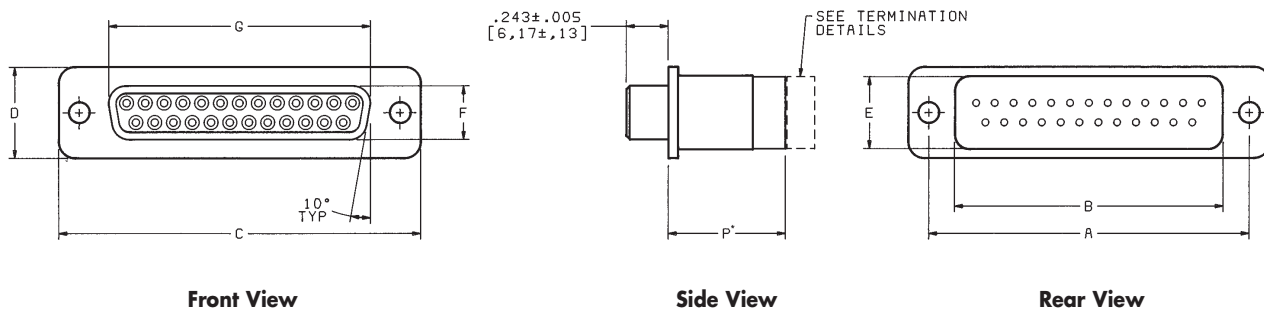
308 Series Plug Dimensions



Shell Size	Number of Contacts	Dimension													
		A		B Max		C		D Max		E Max		F		G	
		±.005"	±.13mm	inches	mm	±.015"	±.38mm	inches	mm	inches	mm	±.005"	±.13mm	±.005"	±.13mm
E	9 or 15	0.984	24,99	0.685	17,34	1.213	30,81	0.534	13,56	0.434	11,02	0.329	8,36	0.666	16,92
A	15 or 26	1.312	33,32	1.009	25,63	1.541	39,14	0.534	13,56	0.434	11,02	0.329	8,36	0.994	25,25
B	25 or 44	1.852	47,04	1.557	39,55	2.088	53,04	0.534	13,56	0.434	11,02	0.329	8,36	1.534	38,96
C	37 or 62	2.500	63,50	2.205	56,01	2.729	69,32	0.534	13,56	0.434	11,02	0.329	8,36	2.182	55,42
D	50 or 78	2.406	61,11	2.110	53,59	2.635	66,93	0.641	16,28	0.541	13,74	0.441	11,20	2.079	52,81
6	104	2.500	63,50	2.255	57,28	2.729	69,32	0.680	17,27	0.640	16,26	0.503	12,77	2.212	56,18

* For Dimension P, see page 21

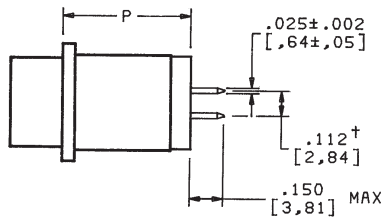
308 Series Receptacle Dimensions



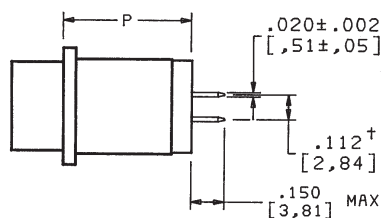
Shell Size	Number of Contacts	Dimension													
		A		B Max		C		D Max		E Max		F		G	
		±.005"	±.13mm	inches	mm	±.015"	±.38mm	inches	mm	inches	mm	±.005"	±.13mm	±.005"	±.13mm
E	9 or 15	0.984	24,99	0.685	17,34	1.213	30,81	0.534	13,56	0.434	11,02	0.311	7,90	0.643	16,33
A	15 or 26	1.312	33,32	1.009	25,63	1.541	39,14	0.534	13,56	0.434	11,02	0.311	7,90	0.971	24,66
B	25 or 44	1.852	47,04	1.557	39,55	2.088	53,04	0.534	13,56	0.434	11,02	0.311	7,90	1.511	38,38
C	37 or 62	2.500	63,50	2.205	56,01	2.729	69,32	0.534	13,56	0.434	11,02	0.311	7,90	2.159	54,84
D	50 or 78	2.406	61,11	2.110	53,59	2.635	66,93	0.641	16,28	0.541	13,74	0.423	10,74	2.064	52,43
6	104	2.500	63,50	2.255	57,28	2.729	69,32	0.680	17,27	0.640	16,26	0.485	12,32	2.189	55,60

* For Dimension P, see page 21

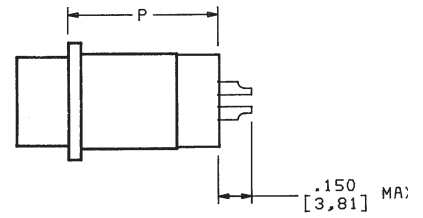
308 Series Termination Styles



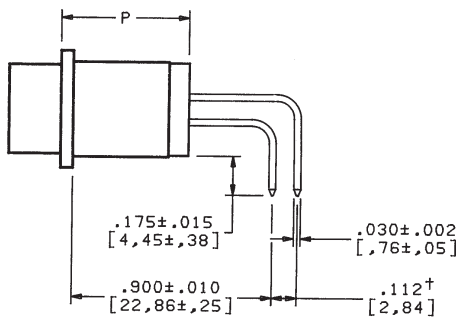
Termination Style 1



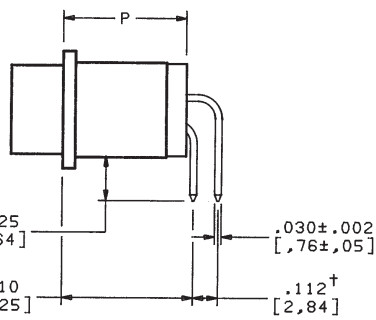
Termination Style 2



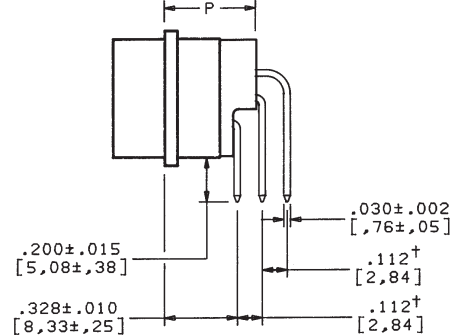
Termination Style 3



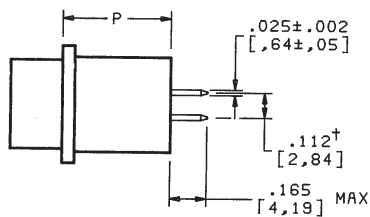
Termination Style 4



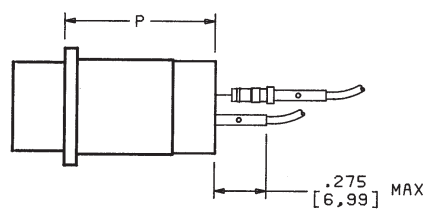
Termination Style 6



Termination Style 7



Termination Style 8

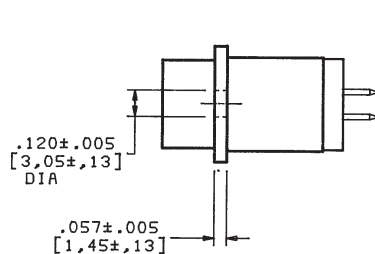


Termination Style 9

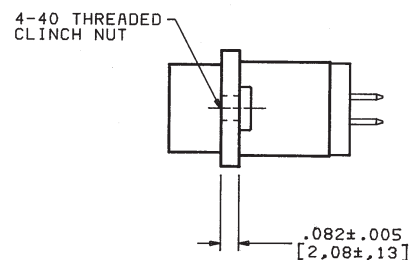
† This dimension is 0.078" (1.98) for high density arrangements

Filter Circuit	Termination Style and Shell Length (P Max dimension)													
	1 and 2		3		4		6		7		8		9	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
PI,LRC,CLR,T	0.575	14,61	0.695	17,65	0.575	14,61	0.575	14,61	N/A	N/A	0.470	11,94	0.695	17,65
C	0.450	11,43	0.570	14,48	0.450	11,43	0.450	11,43	0.400	10,16	0.370	9,40	0.570	14,48

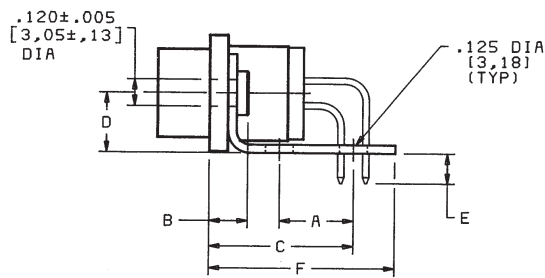
308 Series Mounting Styles



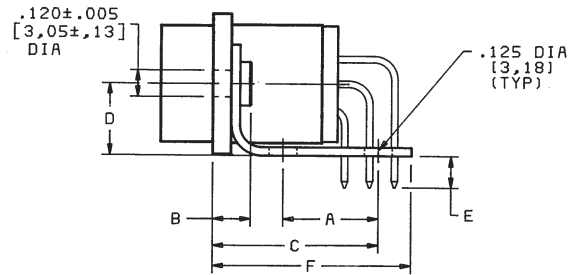
Mounting Style 1



Mounting Style 2



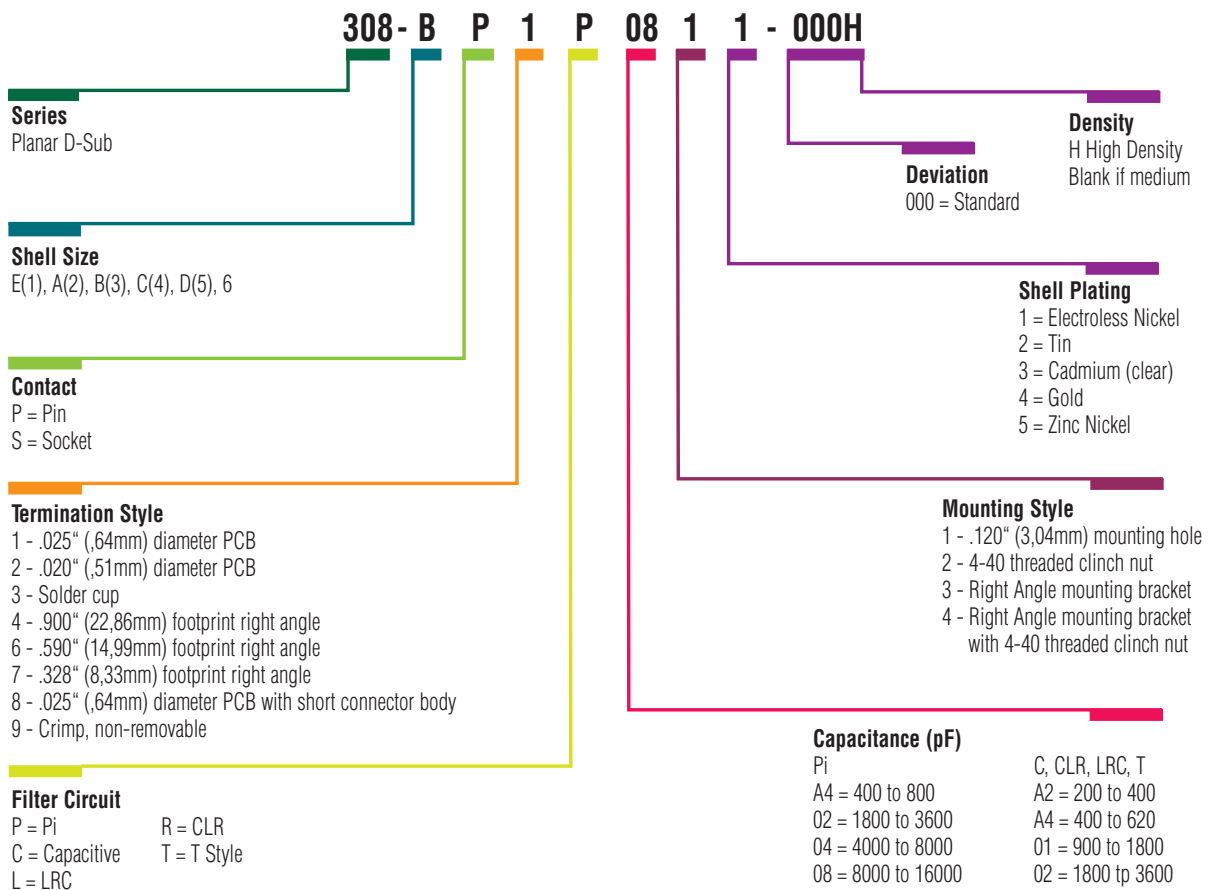
Mounting Style 3 (two row)



Mounting Style 3 (three row)

Shell Size	Number of Contacts	Dimension											
		A		B Max		C		D		E		F Max	
		±.004"	±.11mm	inches	mm	±.015"	±.39mm	±.008"	±.21mm	±.020"	±.51mm	inches	mm
E	9 or 15	0.331	8,41	0.250	6,35	0.647	16,43	0.270	6,86	0.149	3,79	0.855	21,72
A	15 or 26	0.331	8,41	0.250	6,35	0.647	16,43	0.270	6,86	0.149	3,79	0.855	21,72
B	25 or 44	0.331	8,41	0.250	6,35	0.647	16,43	0.270	6,86	0.149	3,79	0.855	21,72
C	37 or 62	0.331	8,41	0.250	6,35	0.647	16,43	0.270	6,86	0.149	3,79	0.855	21,72
D	50 or 78	0.387	9,83	0.250	6,35	0.703	17,86	0.324	8,23	0.149	3,79	0.910	23,12

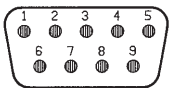
308 Series Part Numbering Information



308 Series Insert Arrangements

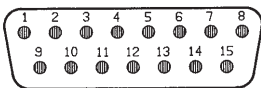
Pin Engaging Face Shown

Shell Size 1 (E)



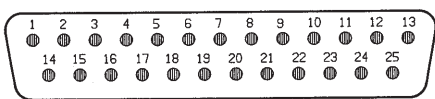
9 #20 Contacts

Shell Size 2 (A)

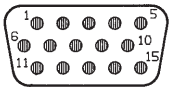


15 #20 Contacts

Shell Size 3 (B)



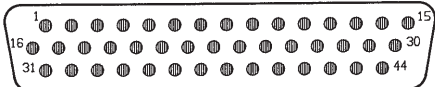
25 #20 Contacts



15 #22 Contacts

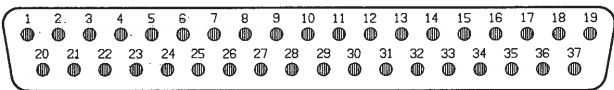


26 #22 Contacts



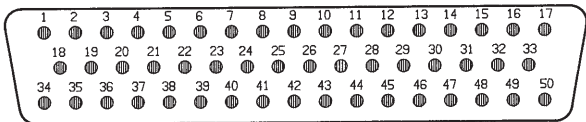
44 #22 Contacts

Shell Size 4 (C)

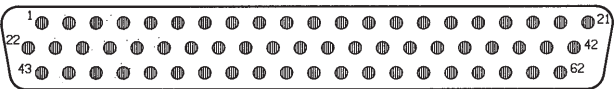


37 #20 Contacts

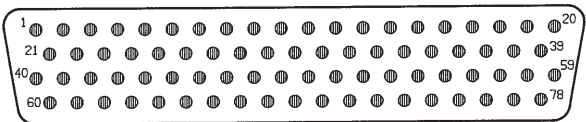
Shell Size 5 (D)



50 #20 Contacts

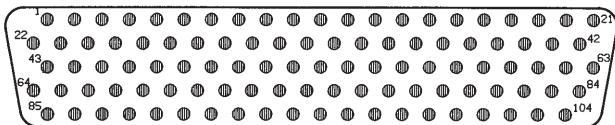


62 #22 Contacts



78 #22 Contacts

Shell Size 6

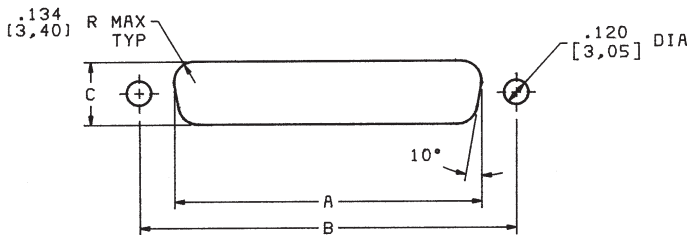


104 #22 Contacts

Note: Consult the factory for other insert patterns.

Recommended Panel Cutout

Front and Rear Mounting



Shell Size	Dimension					
	A min		B		C min	
	inches	mm	±.005"	±.13mm	inches	mm
1 (E)	0.801	20,35	0.984	24,99	0.449	11,40
2 (A)	1.129	28,68	1.312	33,32	0.449	11,40
3 (B)	1.669	42,39	1.852	47,04	0.449	11,40
4 (C)	2.321	58,95	2.500	63,50	0.449	11,40
5 (D)*	2.213	56,21	2.406	61,11	0.555	14,09
5 (D) ⁺	2.250	57,15	2.406	61,11	0.585	14,86
6 *	2.360	59,94	2.500	63,50	0.630	16,00

* Rear mounting dimensions

⁺ Front mounting dimensions