



Right-Angle Posted PCB Connectors

Product Facts:

- Flame retardant thermoplastic housing material, UL 94V-0 rated
- HD-20 right-angle connectors are available in 9, 15, 25 and 37 positions (Shell Sizes 1 thru 4) in both plug and socket versions
- HD-22 right angle socket connectors are available in 15, 26, 44, 62 and 78 positions (Shell Sizes 1 thru 5)
- Low cost front metal-shell design compatible with full metal-shell connectors
- Integral boardlock versions secure posted connectors to pc boards prior to soldering
- HD-20 and HD-22 connector contacts are available in plating types to satisfy different applications
- HD-22 right-angle posted connectors are designed for robotic and high temperature applications
- Integral fixed 4-40 threaded inserts and screwlocks are available in both HD-20 and HD-22 connectors
- Connectors are intermateable with any size 20 or 22 subminiature D connectors dimensionally complying with MIL-C-24308 and DIN 41652
- Recognised under the Component Program of Underwriters Laboratories Inc.,  File No. E28476
- Certified by Canadian Standards Association, File Nos. LR 16455 /  LR 164196



HD-22 Front Metal-Shell Right-Angle Posted PCB Connectors 350 Mount

Plug

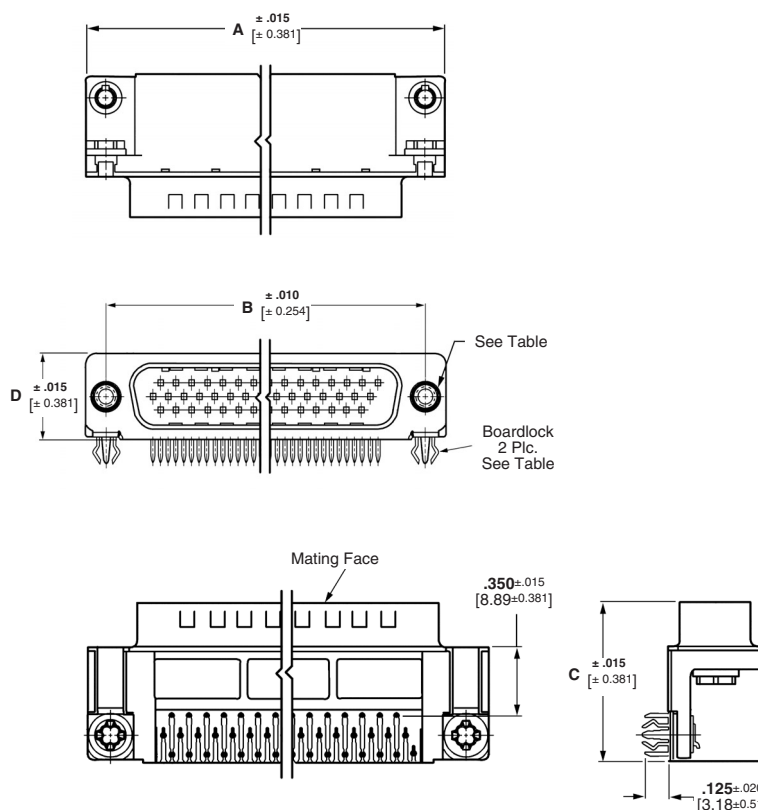


With Boardlock and Threaded Insert



With Boardlock and Female Screwlock

Material and Finish:

Front Shell—Steel, tin plated**Housing**—94V-0 rated thermoplastic, black**Eyelets**—Brass, tin or tin-lead plated**Threaded Inserts**—Zinc**Female Screwlocks**—Zinc**Pin Contacts (Posted)**—Copper alloy**Contact Finish**—Duplex plated:**A**—.000030 [0.00076] gold on mating end, tin-lead on termination end, with entire contact nickel underplated**B**—Gold flash on mating end, tin-lead on termination end, with the entire contact nickel underplated

Technical Documents:

Product Specification
108-1092**Application Specification**
114-40021

Shell Size	No. of Contact Positions	Dimensions				Contacts Finish (Plating Code)	Part Numbers	
		A	B	C	D		Boardlocks	
							Threaded Inserts	Female Screwlocks
1	15	1.222 31.04	.984 24.99	.836 21.23	.494 12.55	A	749767-1	749768-1
2	26	1.550 39.37	1.312 33.33	.836 21.23	.494 12.55	A	749769-1	—
3	44	2.090 53.09	1.852 47.04	.836 21.23	.494 12.55	A	749771-1	—
4	62	2.738 69.55	2.500 63.50	.836 21.23	.494 12.55	A	749639-1	—

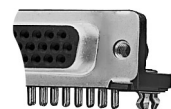
Notes: 1. All plug connectors are preloaded with size 22 DF posted pin contacts
 2. Recommended pc board thickness is .062 [1.58] for connectors with boardlocks and .093 [2.36] max. for all others.

HD-22 Front Metal-Shell Right-Angle Posted PCB Connectors 350 Mount

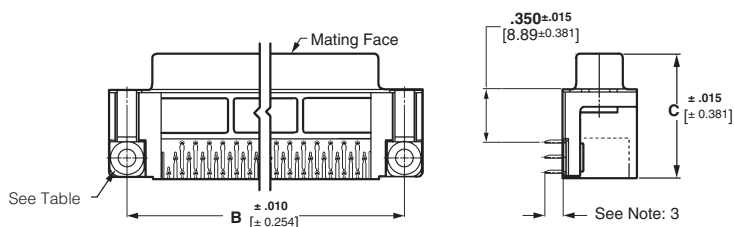
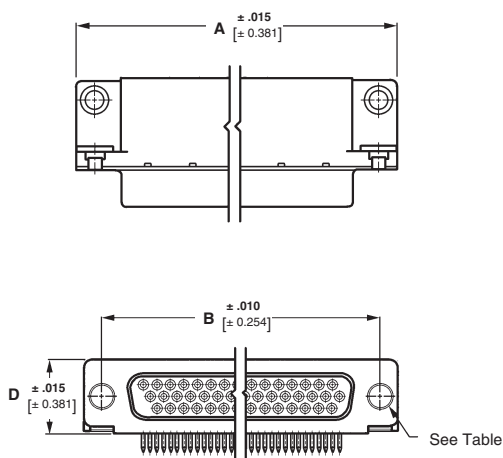
Socket



With Boardlock and Threaded Insert



With Female Screwlock



Material and Finish:

Front Shell—Steel, tin plated**Housing**—94V-0 rated thermoplastic, black**Eyelets**—Brass, tin or tin-lead plated**Threaded Inserts**—Zinc**Female Screwlocks**—Zinc**Socket Contacts (Posted)**—Phosphor bronze**Contact Finish**—Duplex plated:**A**—.000030 [0.00076] gold on mating end, tin-lead on termination end, with entire contact nickel underplated**B**—Gold flash on mating end, tin-lead on termination end, with the entire contact nickel underplated

Technical Documents:

Product Specification

108-1092

Application Specification

114-40021

Shell Size	No. of Contact Positions	Dimensions				Contacts Finish (Plating Code)	Part Numbers		
		A	B	C	D		Boardlocks		.125 [3.18] Dia. Holes Threaded Inserts
							Threaded Inserts	Female Screwlocks	
1	15	1.222	.984	.836	.494	A	1-1470250-3	1470250-3	—
		31.04	24.99	21.23	12.55	B	1-1470250-1	1470250-1	—
2	26	1.550	1.312	.836	.494	A	748481-5	748481-6	1-748481-9
		39.37	33.33	21.23	12.55				
3	44	2.090	1.852	.836	.494	A	748482-5	—	—
		53.09	47.04	21.23	12.55				
4	62	2.738	2.500	.836	.494	A	748394-5	748394-6	—
		69.55	63.50	21.23	12.55				
5	78	2.644	2.406	.936	.605	A	748483-5	748483-6	—
		67.16	61.11	23.77	15.37				

- Notes:**
1. All socket connectors are preloaded with size 22 DF posted socket contacts
 2. Recommended pc board thickness is .062 [1.58] for connectors with boardlocks and .093 [2.36] max. for all others.
 3. Tail Length .125±.020 [3.18±0.51] except Part Nos. 3-748390-8, 4-748390-1 and 4-748390-2 tail length .085±.010 [2.16±2.54]

HD-20 Front Metal-Shell Right-Angle Posted PCB Connectors 318 Mount - Industrial

Plug

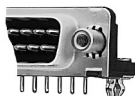
Post Size—.026 [0.66] Dia.



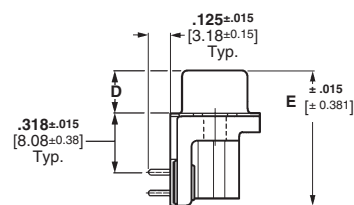
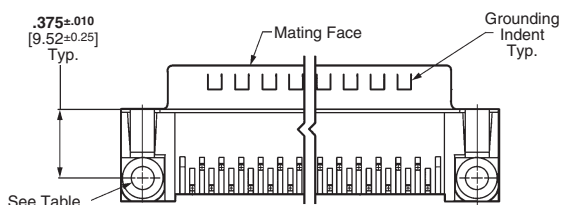
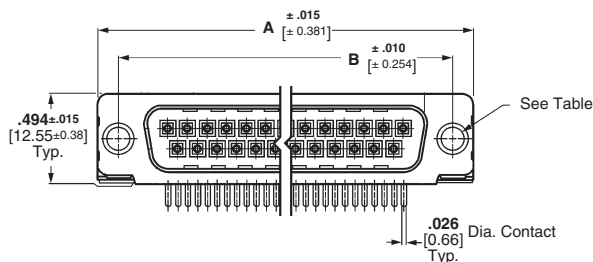
With Grounding Indents and Grounding Straps



With Threaded Insert



With Fixed Female Screwlock



Material and Finish:

Front Shell—Steel, tin plated

Housing—94V-0 rated thermoplastic, black

Eyelets—Brass, tin plated

Threaded Inserts—Zinc

Female Screwlock—Zinc

Boardlocks—Copper alloy, tin-lead plated

Pin Contacts (Posted)—Brass, duplex plated as follows:

A—.000030 [0.00076] gold on mating end, tin-lead on termination end, with entire contact nickel underplated

Technical Documents:

Product Specification

108-40025

Application Specification

114-40010

Shell Size	No. of Contact Positions	Part Numbers									
		Dimensions				Contact Finish (Plating Code)	Without Boardlocks			With Boardlocks	
		A	B	D	E		With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks	With Standard Mounting Holes	With Fixed Female Screwlocks
1	9	1.213 30.81	.984 24.99	.235 5.97	.733 18.62	A	747250-2	747250-4	747250-6	747840-2	747840-6 788792-1*
2	15	1.541 39.14	1.312 33.33	.235 5.97	.733 18.62	A	747236-2	747236-4	747236-6	747841-2	747841-4 747841-6
3	25	2.088 53.04	1.852 47.04	.230 5.84	.738 18.75	A	747238-2	747238-4	747238-6	747842-2	747842-4 788794-1* 788795-1*
4	37	2.729 69.32	2.500 63.50	.230 5.84	.740 18.80	A	747252-2	747252-4	—	747843-2	747843-4 747843-6

Notes: 1. All plug connectors are preloaded with size 20 DF posted pin contacts.

2. Recommended pc board thickness is .062 [1.58] for connectors with boardlocks and .093 [2.36] max. for all others.

3. Male screw retainers (page 1064) are used as mating hardware for connectors with 4-40 female screwlocks.

*SMT Process Compatible Version—Housings are 94V-0 rated, compatible with standard wave, vapour phase, infrared reflow, and convection ovens used in surface mount processing (SMT).

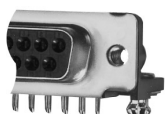
HD-20 Front Metal-Shell Right-Angle Posted PCB Connectors 318 Mount - Industrial

Socket

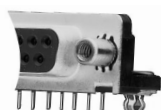
Post Size—.026 [0.66] Dia.



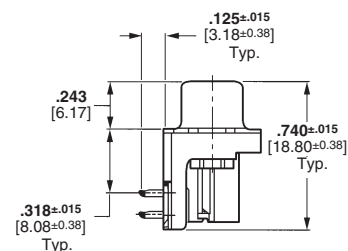
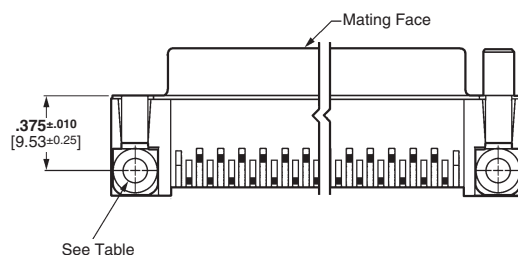
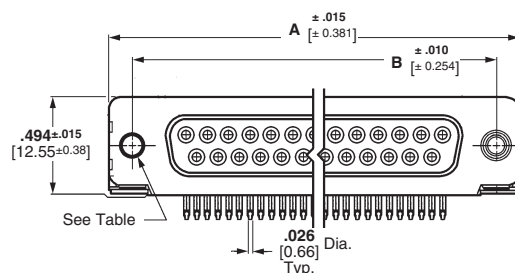
With Grounding Straps



With Threaded Insert



With Fixed Female Screwlock



Material and Finish:

Front Shell—Steel, tin plated

Housing—94V-0 rated thermoplastic, black

Eyelets—Brass, tin plated

Threaded Inserts—Zinc

Female Screwlock—Zinc

Boardlocks—Copper alloy, tin-lead plated

Socket Contacts (Posted)—Phosphor bronze, duplex plated as follows:

A—.000030 [0.00076] gold on mating end, tin-lead on termination end, with entire contact nickel underplated

Technical Documents:

Product Specification

108-40025

Application Specification

114-40010

Shell Size	No. of Contact Positions	Dimensions		Contact Finish (Plating Code)	Part Numbers					
					Without Boardlocks			With Boardlocks		
		A	B		With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks	With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks
1	9	1.213 30.81	.984 24.99	A	745781-2	745781-4	745781-6 788803-1	747844-2	747844-4 788796-1*	747844-6 788797-1*
2	15	1.541 39.14	1.312 33.33	A	745782-2	745782-4	745782-6	747845-2	747845-4 788798-1*	747845-6 788799-1*
3	25	2.088 53.04	1.852 47.04	A	745783-2	745783-4	745783-6	747846-2	747846-4 788800-1*	747846-6 788801-1*
4	37	2.729 69.32	2.500 63.50	A	—	745784-4	745784-6	—	747847-4 788802-1*	747847-6

Notes: 1. All plug connectors are preloaded with size 20 DF posted pin contacts.

2. Recommended pc board thickness is .062 [1.58] for connectors with boardlocks and .093 [2.36] max. for all others.

3. Male screw retainers (page 1064) are used as mating hardware for connectors with 4-40 female screwlocks.

*SMT Process Compatible Version—Housings are 94V-0 rated, compatible with standard wave, vapour phase, infrared reflow, and convection ovens used in surface mount processing (SMT).

HD-20 Front Metal-Shell Right-Angle Posted PCB Connectors 318 Mount - Commercial

Plug

Post Size—.026 [0.66] Dia.



Material and Finish:

Front Shell—Steel, nickel plated

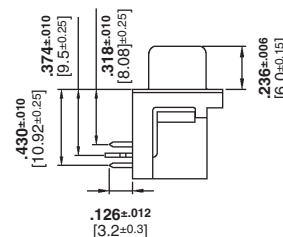
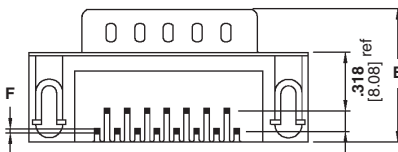
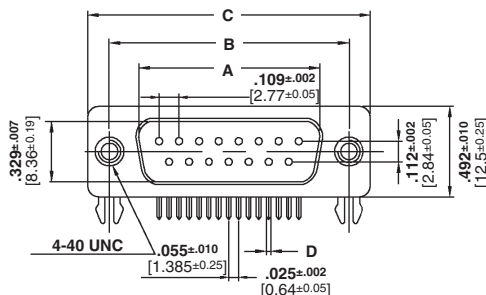
Housing—PBT, UL 94V-0 Rated

Colour—Black

Contacts—Brass, .000015 [0.00038] gold plated on mating end, 2.54µm [.000100in] min tin-lead on solder tails all over 1.27µm [.000050in] min nickel on entire contact

Boardlocks—Brass, tin or lead plated 2.54µm [.000100in]

Threaded inserts—Brass, nickel plated

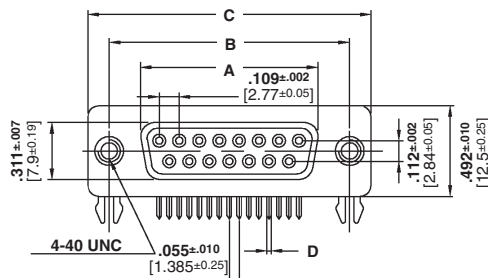


Shell Size	No. of Contact Positions	Dimensions						Part Numbers	
								With Boardlocks	
		A	B	C	D	E	F	With 4-40 Inserts	With 4-40 Screwlocks
1	9	.666±.007 16.92±0.19	.984±.010 24.99±0.25	1.213±.015 30.80±0.38	.024±.002 0.60±0.05	.724±.015 18.4±0.38	.025±.002 0.64±0.06	788754-2	788753-2
2	15	.994±.007 25.25±0.19	1.312±.010 33.32±0.25	1.543±.015 39.20±0.38	.025±.002 0.64±0.05	.724±.015 18.5±0.38	.024±.002 0.60±0.06	1364027-2	—
3	25	1.534±.007 38.96±0.19	1.852±.010 47.04±0.25	2.091±.015 53.10±0.38	.024±.002 0.60±0.05	.724±.015 18.5±0.38	.025±.002 0.64±0.06	788755-2	788782-2

HD-20 Front Metal-Shell Right-Angle Posted PCB Connectors 318 Mount - Commercial

Socket

Post Size—.026 [0.66] Dia.



Material and Finish:

Front Shell—Steel, nickel plated

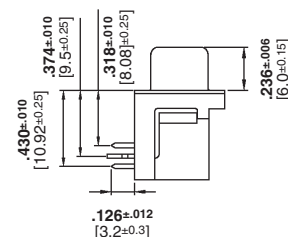
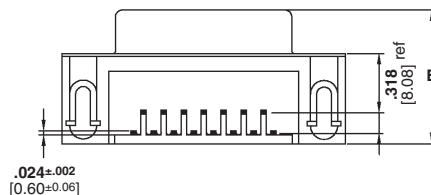
Housing—PBT, UL 94V-0 Rated

Colour—Black

Contacts—Phosphor Bronze, 000015 [0.00038] gold plated on mating end, 2.54µm [.000100in] min tin-lead on solder tails all over 1.27µm [.000050in] min nickel on entire contact

Boardlocks—Brass, tin or lead plated 2.54µm [.000100in]

Threaded inserts—Brass, nickel plated



Shell Size	No. of Contact Positions	Dimensions				Part Numbers With Boardlocks	
		A	B	C	E	With 4-40 Inserts	With 4-40 Screwlocks
1	9	.643±.007 16.33±0.19	.984±.010 24.99±0.25	1.213±.015 30.80±0.38	.724±.015 18.4±0.38	788750-2	788756-2
2	15	.969±.007 24.62±0.19	1.312±.010 33.32±0.25	1.543±.015 39.20±0.38	.724±.015 18.5±0.38	788757-2	788781-2
3	25	1.512±.007 38.40±0.19	1.852±.010 47.04±0.25	2.091±.015 53.10±0.38	.724±.015 18.5±0.38	788752-2	788751-2

HD20 Metal Shell Right Angle PCB Solder Connectors, European Standard Footprint, 7.3mm Installation Height, According DIN 41652

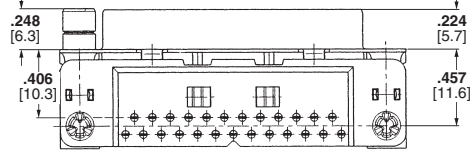
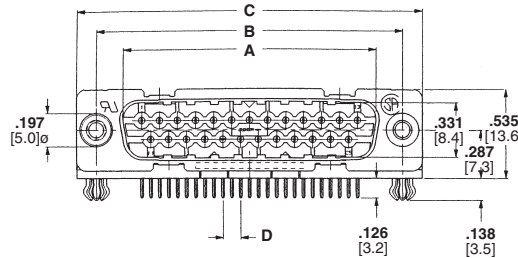
Plug Connector



Material and Finish:

Front Shell—Steel, tin plated
Housing—Black glass filled polyester
Flammability—UL 94V-0
Contact Material-pin—Phosphor bronze
Contact Material-socket—Phosphor bronze
Contact area plating—0.76µm Au
Current rating—6A max
Insulation resistance—5000 MΩ min
Dielectric strength—1000V ac min
Temperature rating—-55 to +105°C

Plug Connector



No. of Contact Positions	Dimensions					With 3mm Hole	With 4-40 Inserts	With 4-40 Screwlocks	With M3 Inserts	With M3 Screwlocks
	A	B	C	D	E					
9	.665	.984	1.217	.108	.276	0-338168-2	1-338168-2	3-338168-2	2-338168-2	4-338168-2
	16.90	25.00	30.90	2.74	7.01	5-338168-2	6-338168-2	8-338168-2	7-338168-2	9-338168-2
15	.996	1.311	1.543	.108	.278	0-338169-2	1-338169-2	3-338169-2	2-338169-2	4-338169-2
	25.30	33.30	39.20	2.74	7.06	5-338169-2	6-338169-2	8-338169-2	7-338169-2	9-338169-2
25	1.535	1.850	2.091	.019	.274	0-338170-2	1-338170-2	3-338170-2	2-338170-2	4-338170-2
	39.00	47.00	53.10	2.76	6.95	5-338170-2	6-338170-2	8-338170-2	7-338170-2	9-338170-2
37	2.181	2.500	2.732	.019	.272	0-338171-2	1-338171-2	3-338171-2	2-338171-2	4-338171-2
	55.40	63.5	69.4	2.76	6.90	5-338171-2	6-338171-2	8-338171-2	7-338171-2	9-338171-2

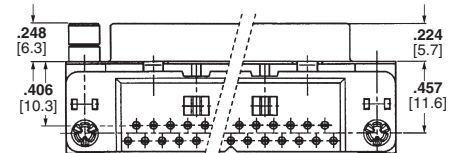
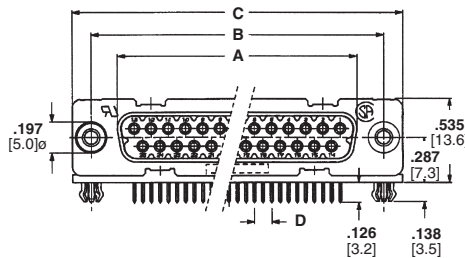
Grey box indicates Plug without Boardlock

Technical Documents:

Product Specification
108-40025

Application Specification
114-40013

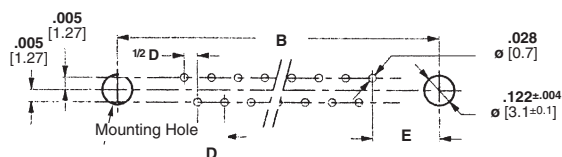
Socket Connector



No. of Contact Positions	Dimensions					With 3mm Hole	With 4-40 Inserts	With 4-40 Screwlocks	With M3 Inserts	With M3 Screwlocks
	A	B	C	D	E					
9	.642	.984	1.217	.108	.276	0-106505-2	1-106505-2	3-106505-2	2-106505-2	4-106505-2
	16.30	25.00	30.90	2.74	7.01	5-106505-2	6-106505-2	8-106505-2	7-106505-2	9-106505-2
15	.972	1.311	1.543	.108	.278	0-106506-2	1-106506-2	3-106506-2	2-106506-2	4-106506-2
	24.70	33.30	39.20	2.74	7.06	5-106506-2	6-106506-2	8-106506-2	7-106506-2	9-106506-2
25	1.512	1.850	2.091	.019	.274	0-106507-2	1-106507-2	3-106507-2	2-106507-2	4-106507-2
	38.40	47.00	53.10	2.76	6.95	5-106507-2	6-106507-2	8-106507-2	7-106507-2	9-106507-2
37	2.157	2.500	2.732	.019	.272	0-106508-2	1-106508-2	3-106508-2	2-106508-2	4-106508-2
	54.8	63.5	69.4	2.76	6.90	5-106508-2	6-106508-2	8-106508-2	7-106508-2	9-106508-2

Grey box indicates Socket without Boardlock

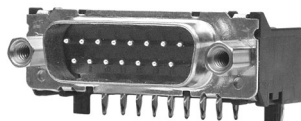
Recommended PC Board Layout



www.tvcoelectronics.com

HD20 Front Metal Shell Right Angle PCB Press Fit Connectors, European Standard Footprint, 7.3mm Installation Height, According DIN 41652

Plug Connector



Material and Finish:

Front Shell—Steel, tin plated

Housing—Black Thermoplastic PBTP/PPS

Flammability—UL 94V-0

Contact Material-pin—Copper alloy

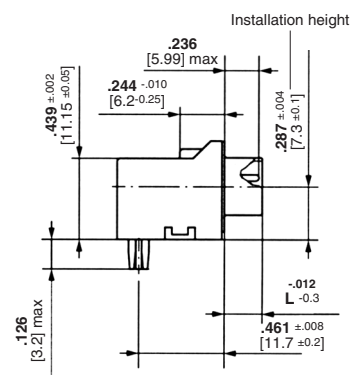
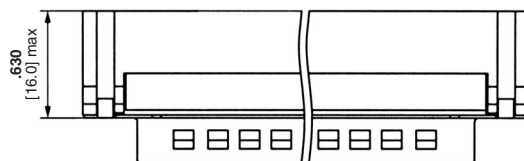
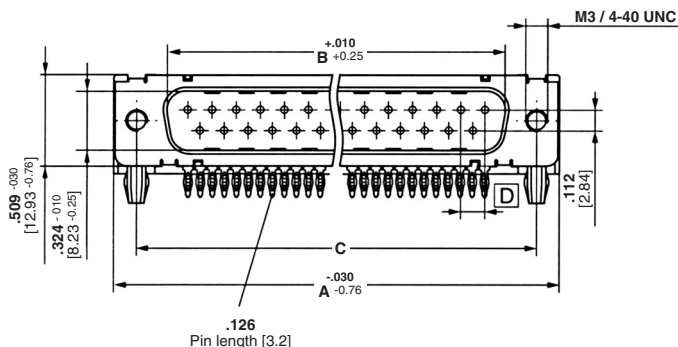
Contact area plating—Ni/Au (>250 mating cycles)

Current rating—2.2 A

Insulation resistance—5000 MΩ min

Dielectric strength—1000V ac

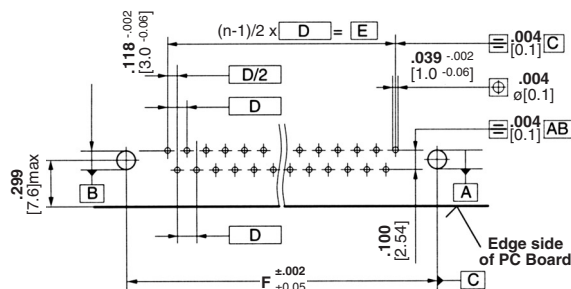
Temperature rating—-55 to +125°C



No. of Contact Positions	Dimensions								With 4-40 Inserts	With 4-40 Screwlocks	With M3 Inserts	With M3 Screwlocks
	n	A	B	C	D	E	F	L				
9	.354 9.0	1.228 31.19	.661 16.79	.984 25.00	.108 2.74	.431 10.96	.241 6.12	-	3-1393481-2	3-1393481-8	2-1393481-5	On Enquiry
15	.591 15.0	1.556 39.52	.989 25.12	1.311 33.30	.108 2.74	.755 19.18	1.311 33.30	.241 6.12	3-1393481-3	3-1393481-9	2-1393481-6	On Enquiry
25	.984 25.0	2.103 53.42	1.529 38.84	1.852 47.04	.109 2.76	1.304 33.12	1.852 47.04	.236 5.99	3-1393481-4	2-1393497-7	2-1393481-7	On Enquiry
37	1.457 37.0	2.744 69.70	2.177 55.30	2.50 63.50	.109 2.76	1.956 49.68	2.50 63.50	.236 5.99	2-1392010-7	4-1393481-0	2-1393481-8	On Enquiry

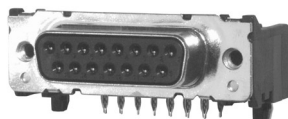
Press Fit connectors require dedicated tooling and procedures for PCB assembly. Please refer to the applicable application specification for full details

Mounting holes (component side) for printed circuits



HD20 Front Metal Shell Right Angle PCB Press Fit Connectors, European Standard Footprint, 7.3mm Installation Height, According DIN 41652

Socket Connector



Material and Finish:

Front Shell—Steel, tin plated

Housing—Black Thermoplastic PBTP/PPS

Flammability—UL 94V-0

Contact Material-socket—Copper alloy

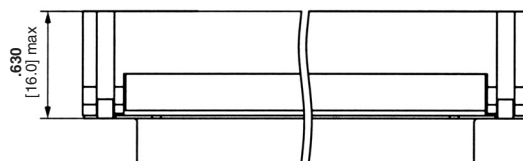
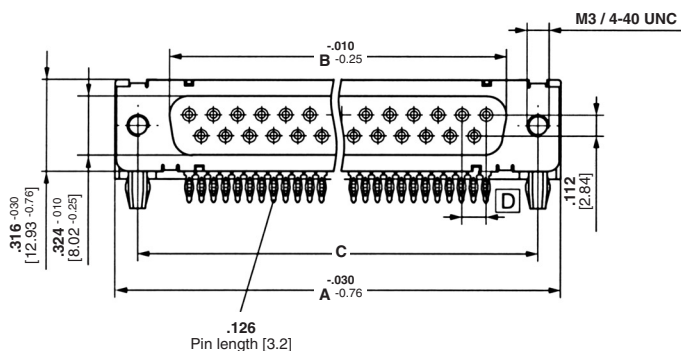
Contact area plating—Ni/Au (>250 mating cycles)

Current rating—2.2 A

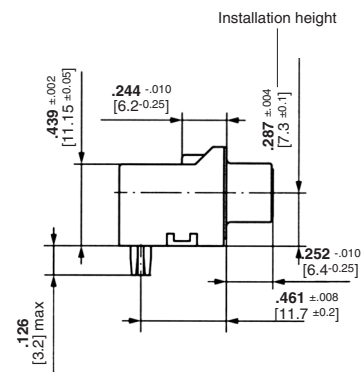
Insulation resistance—5000 MΩ min

Dielectric strength—1000V ac

Temperature rating—-55 to +125°C



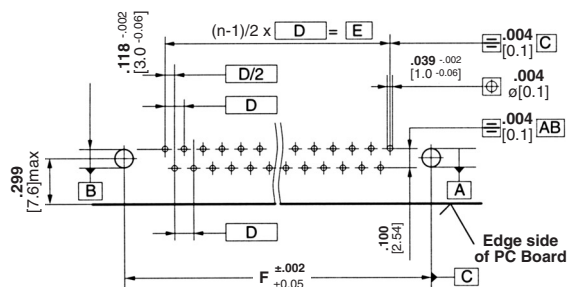
Press-in zone in accordance with IEC 352-2 (currently in preparation)



No. of Contact Positions	Dimensions							With 4-40 Inserts	With 4-40 Screwlocks	With M3 Inserts	With M3 Screwlocks
	n	A	B	C	D	E	F				
9	.354 9.0	1.228 31.19	.648 16.46	.984 25.00	.108 2.74	.431 10.96	.984 25.0	2-1393481-9	3-1393481-6	2-1393481-1	On Enquiry
15	.591 15.0	1.556 39.52	.976 24.79	1.311 33.30	.108 2.74	.755 19.18	1.311 33.30	3-1393481-0	2-1393497-4	2-1393481-2	On Enquiry
25	.984 25.0	2.103 53.42	1.516 38.50	1.852 47.04	.109 2.76	1.304 33.12	1.852 47.04	3-1393481-1	2-1393497-5	2-1393481-3	On Enquiry
37	1.457 37.0	2.744 69.70	2.164 54.96	2.50 63.50	.109 2.76	1.956 49.68	2.50 63.50	2-1392010-6	2-1393497-6	2-1393481-4	On Enquiry

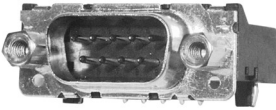
Press Fit connectors require dedicated tooling and procedures for PCB assembly. Please refer to the applicable application specification for full details

Mounting holes (component side) for printed circuits



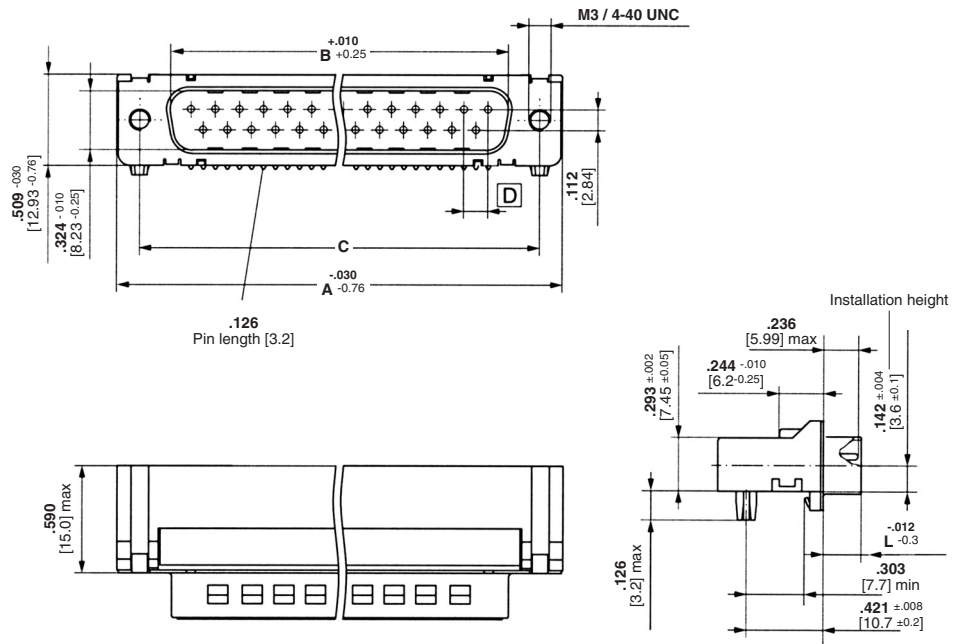
HD20 Front Metal Shell Right Angle Press Fit Connectors, Eurostyle Footprint, 3.6mm Installation Height, According DIN 41652

Plug Connector



Material and Finish:

Front Shell—Steel, tin plated
Housing—Black Thermoplastic PBTP
Flammability—UL 94V-0
Contact Material—pin—Copper alloy
Contact area plating—Ni/Au
 (>250 mating cycles)
Current rating—2.2 A
Insulation resistance—
 5000 MΩ min
Dielectric strength—1000V ac
Temperature rating—-55 to +125°C



No. of Contact Positions	Dimensions							With 4-40 Inserts	With 4-40 Screwlocks	With M3 Inserts	With M3 Screwlocks
	n	A	B	C	D	F	L				
9	.354 9.0	1.228 31.19	.661 16.79	.984 25.00	.108 2.74	.984 25.00	.241 6.12	On Enquiry	3-1393482-0	1-1393482-4	2-1393482-1
15	.591 15.0	1.556 39.52	.989 25.12	1.311 33.30	.108 2.74	1.311 33.30	.241 6.12	On Enquiry	3-1393482-2	3-1393497-0	4-1483489-2
25	.984 25.0	2.103 53.42	1.529 38.84	1.852 47.04	.109 2.76	1.852 47.04	.236 5.99	On Enquiry	3-1393482-4	1-1393482-5	On Enquiry
37	1.457 37.0	2.744 69.70	2.177 55.30	2.50 63.50	.109 2.76	2.50 63.50	.236 5.99	On Enquiry	3-1393482-5	3-1393497-1	On Enquiry

Mounting holes (component side) for printed circuits

