

# **Right-Angle Posted Connectors**



Connector Density	Туре	Style and Shell Finish	No. of Contact Positions	Footprint	Mating Hardware	Board Mounting	Contact Plating (Mating Area/ Solder Tails)	Post Length
HD-22	Plug and	Front Metal-Shell,	15 26 44	.350	Threaded Inserts	Boardlocks	Duplex (0.000030 [0.00076] Gold/Tin)	.125
	Receptacle	Tin Plated (Pg. 52)	62 78	[8.89]	Female Screwlocks		Duplex (Gold Flash/Tin)	[3.18]
		Full Metal-Shell With and Without	9 15 25	<b>.454</b> [11.53]	Standard Screws	<b>.120</b> [3.05]	Duplex (.000030 [0.00076] Gold/Tin)	<b>.125</b> [3.18]
		Grounding Indents, Tin Plated (Pgs. 71, 139, 155)	37 50	<b>.545</b> [13.84]	Female Screwlocks	Dia. Holes	Duplex (Gold Flash/Tin)	<b>.220</b> [5.59]
	Plugs	Front Metal-Shell With Grounding Indents, Tin Plated (Pgs. 55-58,	9 15 25 37	.318 [8.08] .478 [12.14] .590	.120 [3.05] Dia. Holes Threaded Inserts	.125 [3.18] Dia. Holes Boardlocks	Duplex (.000030 [0.00076] Gold/Tin) Duplex	<b>.125</b> [3.18]
HD-20	and Receptacles	60-63, 65-67, 131, 134, 138, 143, 150)		[14.99]	Female Screwlocks		(Gold Flash/Tin)	
					<b>.125</b> [3.18] Dia. Holes		Duplex	
		All-Plastic (Pgs. 68-70, 132,	9 15	<b>.318</b> [8.08]	<b>.120</b> [3.05] Dia. Holes	<b>.125</b> [3.18] Dia. Holes	(.000030 [0.00076] Gold/Tin)	.125
		133, 135, 136)	25 37	<b>.590</b> [14.99]	Threaded Inserts	<b>.120</b> [3.05] Dia. Elliptical Holes	Duplex (Gold Flash/Tin)	[3.18]
					Female Screwlocks	Boardlocks		



# Right-Angle Posted Connectors (Continued)

# **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 receptacle versions; some versions available in 50 position, (Shell Size 5)
- HD-20 stacked connectors are available in 9/9, 15/15, 25/25, and 37/37 positions (Shell Sizes 1 thru 4) in receptacle over receptacle, plug over plug and combination versions
- HD-22 right-angle receptacle 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 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

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**Subminiature D Connectors for Cable Mounting** 

# Right-Angle Stacked Connectors (Centerline-to-centerline height .750 [19.05])

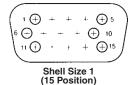
		,		•	-,			
Connector Density	Туре	Style and Shell Finish	No. of Contact Positions	Footprint	Mating Hardware	Board Mounting	Contact Plating (Mating Area/ Solder Tails)	Post Length
	Receptacle over Receptacle							
HD-20	Plug over Plug	Front Metal-Shell,	9/9 15/15 25/25	See Customer	Threaded Inserts	<b>.120</b> [3.05] Dia. Holes	Duplex (.000030 [0.00076] Gold/Tin) (.000010 [0.00025]	.125
110-20	Receptacle over Plug	Tin Plated (Pgs. 144-149, 151)	25/25 Customer	Female Screwlocks	Boardlocks	Gold/Tin)  Duplex (Gold Flash/Tin)	[3.18]	
	Plug over Receptacle						. ,	

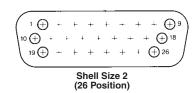


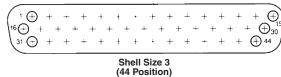
# HD-22 and HD-20 Commercial Connectors (AMPLIMITE)

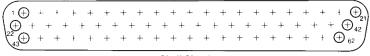
# **Contact Arrangements**

**HD-22 Inserts** 

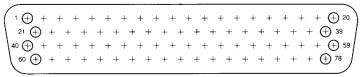






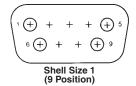


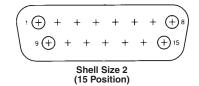
Shell Size 4 (62 Position)



Shell Size 5 (78 Position)

# **HD-20 Inserts**







Shell Size 3



Shell Size 4 (37 Position)



Shell Size 5 (50 Position)

Note: Mating face of plug is shown, receptacle is mirror-image.



# **HD-22 and HD-20 Connectors Performance Characteristics**

# **Cable Connectors**

_		Connector Type	
	HDP-22	HDE-20	HDP-20
Electrical Characteristics			
Contact Current Rating (One pair of contacts)	22 AWG [0.4mm²] Wire 5.0 amperes	20 AWG [0.6mm²] 3 amperes	20 AWG [0.6mm²] 7.5 amperes
Termination Resistance	15 milliohms (max.)	30 milliohms (max.)	15 milliohms (max.)
Dielectric Withstanding Voltage	1000 VAC min.	1000 VAC min.	1000 VAC min.
Insulation Resistance	5000 megohms min.	5000 megohms min.	5000 megohms min.
Mechanical Characteristics			
Contact Insertion Force	3 lb. max. [13.34 N max.]	N/A	3 lb. max. [13.34 N max.]
Contact Retention	5 lb. min. [22.24 N min.]	7 lb. min. [31.14 N min.]	10 lb. min. [44.48 N min.]
Contact Mating Force (Per contact circuit pair)	8 oz. max. [2.22 N max.]	8 oz. max. [2.22 N max.]	8 oz. max. [2.22 N max.]
Contact Unmating Force (Per contact circuit pair)	.75 oz. min. [0.209 N min.]	.75 oz. min. [0.209 N min.	.75 oz. min. [0.209 N min.]
Tensile Strength	22 AWG—12 lb. [0.4mm²—53.4 N] 24 AWG—8 lb. [0.2mm²—35.6 N] 26 AWG—4.5 lb. [0.15mm²—20.02 N] 28 AWG—2.7 lb. [0.08mm²—12.01 N]	20 AWG—9.5 lb. [0.6mm²—42.3 N] 22 AWG—6 lb. [0.4mm²—26.7 N] 24 AWG—4 lb. [0.2mm²—17.79 N] 26 AWG—2.5 lb. [0.15mm²—11.12 N] 28 AWG—2.5 lb. [0.08mm²—11.12 N] 30 AWG—1 lb. [0.05mm²—4.45 N]	20 AWG—20 lb. [0.6mm²—89 N] 22 AWG—12 lb. [0.4mm²—53.4 N] 24 AWG—8 lb. [0.2mm²—35.6 N] 26 AWG—4.5 lb. [0.15mm²—20.02 N] 28 AWG—2.7 lb. [0.08mm²—12.01 N]
.000030 [0.0007 Durability gold—500 cycle Gold Flash— 100 cycles		.000030 [0.00076] gold—500 cycles Gold Flash— 100 cycles	.000030 [0.00076] gold—500 cycles Gold Flash— 100 cycles
invironmental Characteristics			
Vibration	Random 20 G's rms max.	Random 20 G's rms max.	Random 20 G's rms max.
Physical Shock	50 G's Duration 11 ms	50 G's Duration 11 ms	50 G's Duration 11 ms

# **Board Mount Connectors**

	Connector Type
	HD-20
Electrical Characteristics	
Single Contact Current Rating (30°C Rise) Duration 11 ms	18 AWG 6.0 amperes 24 AWG 4.3 amperes 28 AWG 2.9 amperes
Termination Resistance	15 milliohms* (max.)
Dielectric Withstanding Voltage	1000 VAC min.**
Insulation Resistance	5000 megohms min.

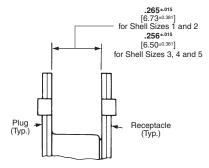
<sup>\*</sup>Stacked Connectors—30 milliohms (max.)
\*\*Stacked Connectors—500 VAC min.

		Connector Type HD-20				
Nechanical Characte	ristics					
Durability		.000030 [0.00076] gold—500 cycles Gold Flash—100 cycles				
	Size	HD-20 Without Grounding Indents	HD-20 With Grounding Indents			
	1	<b>4.5</b> [20.02]	<b>30.0</b> [133.5]			
Connector	2	<b>7.5</b> [33.4]	<b>33.0</b> [146.8]			
Mating and Unmating Force (lbs. max. over	3	<b>12.5</b> [55.6]	<b>37.0</b> [164.6]			
[N max.])	4	<b>18.5</b> [82.3]	<b>40.0</b> [177.9]			
	5	<b>25.0</b> [111.2]	<b>44.0</b> [195.7]			



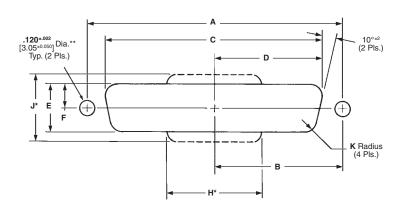
# Plug/Receptacle Mating and Panel Mounting Specifications

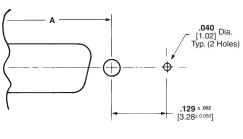
# **Plug/Receptacle Mating**



The .265 [6.73] dimension is required to assure full mating of connector halves. This dimension must be taken into consideration when determining the method of mounting, panel thickness, etc.

# **Panel Mounting**





Cutout for Rear Mount and Short Latching Block

Note: Cutouts are for either plug or receptacle, front or rear panel mount.

Shell Size	Mounting Method		Dimensions									
(Pos.)	Front/Rear Panel	Α	В	С	D	E	F	Н*	J*	K		
1	Front	<b>.984</b> 24.99	<b>.492</b> 12.50	<b>.874</b> 22.20	<b>.437</b> 11.10	<b>.513</b> 13.03	<b>.257</b> 6.53	_	_	<b>.083</b> 2.11		
(9)	Rear	<b>.984</b> 24.99	<b>.492</b> 12.50	<b>.806</b> 20.47	<b>.403</b> 10.24	<b>.449</b> 11.41	<b>.225</b> 5.72	<b>.550</b> 13.97	<b>.750</b> 19.05	<b>.132</b> 3.35		
2 (15)	Front	<b>1.312</b> 33.33	<b>.656</b> 16.66	<b>1.202</b> 30.53	<b>.601</b> 15.27	<b>.513</b> 13.03	<b>.257</b> 6.53	_	_	<b>.083</b> 2.11		
	Rear	<b>1.312</b> 33.33	<b>.656</b> 16.66	<b>1.134</b> 28.80	<b>.567</b> 14.40	<b>.449</b> 11.41	<b>.225</b> 5.72	<b>.730</b> 18.54	<b>.750</b> 19.05	<b>.132</b> 3.35		
3	Front	<b>1.852</b> 47.04	<b>.926</b> 23.52	<b>1.743</b> 44.27	<b>.872</b> 22.15	<b>.513</b> 13.03	<b>.257</b> 6.53	_	_	<b>.083</b> 2.11		
(25)	Rear	<b>1.852</b> 47.04	<b>.926</b> 23.52	<b>1.674</b> 42.52	<b>.837</b> 21.26	<b>.449</b> 11.41	<b>.225</b> 5.72	<b>1.275</b> 32.39	<b>.750</b> 19.05	<b>.132</b> 3.35		
4	Front	<b>2.500</b> 63.50	<b>1.250</b> 31.75	<b>2.391</b> 60.73	<b>1.196</b> 30.38	<b>.513</b> 13.03	<b>.257</b> 6.53	_	_	<b>.083</b> 2.11		
(37)	Rear	<b>2.500</b> 63.50	<b>1.250</b> 31.75	<b>2.326</b> 59.08	<b>1.163</b> 29.54	<b>.449</b> 11.41	<b>.225</b> 5.72	<b>1.920</b> 46.05	<b>.750</b> 16.13	<b>.132</b> 3.35		
5	Front	<b>2.406</b> 61.11	<b>1.203</b> 30.56	<b>2.297</b> 58.34	<b>1.149</b> 29.19	<b>.623</b> 15.82	<b>.312</b> 7.93	_	_	<b>.083</b> 2.11		
(50)	Rear	<b>2.406</b> 61.11	<b>1.203</b> 30.56	<b>2.218</b> 56.34	<b>1.109</b> 28.17	<b>.555</b> 14.10	<b>.278</b> 7.06	<b>1.753</b> 44.52	<b>.750</b> 19.05	<b>.132</b> 3.35		

<sup>\*</sup>Panel cutout configuration with H and J dimensions provides clearance for mounting connectors with cable clamps.

Most plugs and receptacles can be mounted to a panel from either the front or rear, using a variety of accessory hardware. Posted receptacles are rear panel mounted only. Typical examples are shown below.



Typical Front-Panel Mounted Subminiature D Plug



Typical Rear-Panel Mounted Subminiature D Receptacle

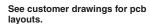
<sup>\*\*</sup>This dimension is .190<sup>±002</sup> [4.83<sup>±0.05</sup>] when posted connectors with fixed female screwlocks are rear-panel mounted.



# AMPLIMITE HD-20 Subminiature D Stacked PCB Connectors Hybrid and Mixed Styles

#### **Product Facts**

- Stacked pcb connectors save board real estate
- Wide choice of configurations available
- Front Metal-Shells for EMI/RFI shielding
- Housings made of UL 94V-0 rated thermoplastic
- Plug connectors have builtin grounding indents
- Choice of 4-40 threaded insert or female screwlock mating hardware
- Hybrid styles provide maximum selectivity and permit mixing of signal speeds
- Packaged in plastic trays for ease of handling
- Recognized under the Component Program of the Underwriters
  Laboratories, Inc.
  File No. 28476
- Certified by Canadian Standards Association, File No. LR 7189





AMPLIMITE HD-20 Subminiature D Stacked PCB Connectors are members of the complete line of AMPLIMITE Subminiature D Connector family which has been accepted by the electronic industry for their rugged design and ease of application.

Stacked connectors add the advantage of reducing overall board real estate normally consumed by individual pcb connectors. The versatility of the AMPLIMITE HD-20 line enables you to select the stacked connector best suited for your specific application.

AMPLIMITE HD-20 Stacked Connectors, Series II offer a high degree of performance and a reduced cost. The line consists of:

■ Receptacle over Receptacle in 9/9, 15/15, 25/25 and 37/37 contact positions

- Plug over Plug in 9/9, 15/15, 25/25 and 37/37 contact positions
- Receptacle over Plug in 9/9, 15/15, 25/25 and 37/37 contact positions
- Plug over Receptacle in a total of 9/9,15/15, 25/25 and 37/37 contact positions

Configurations are available with a choice of mounting hardware—4-40 threaded inserts and female screwlocks.

### **Hybrid and Mixed Styles**

AMPLIMITE Hybrid and Mixed Stacked Connectors combine a variety of subminiature D connector configurations into a single connector. This permits mixing signal speeds with a substantial reduction in pc board real estate.

All AMPLIMITE Stacked and Mixed PCB Connectors fea-

ture front metal-shells for EMI/RFI shielding, with housings made of UL 94V-0 approved material. The series offers gold plating in 30µ", 10µ" and gold flash on the mating end and tin plating on the termination end, with the entire contact nickel underplated.

Due to the versatility of the AMPLIMITE Hybrid and Mixed lines of connectors any combination with an AMPLIMITE HD-20 Connector as the top connector, HD-22 High Density, and AMPLIMITE .050 Series as the bottom connector can be provided based on your application requirements. Contact Tyco Electronics for additional information.



# AMPLIMITE HD-20 Subminiature D Stacked PCB Connectors Hybrid and Mixed Styles (Continued)

# **Material and Finish:**

**Housing**—94V-0 rated thermoplastic, black

Shell—Steel, tin plated

Contacts:

Pins—Brass

Sockets—Phosphor bronze

# **Contact Plating:**

**A**—Gold flash on mating end, tin on solder tails with overall nickel plating underneath

**B**—.000010 [0.00025] gold on mating end, tin on solder tails with overall nickel underplate

**C**—.000030 [0.00076] gold on mating end, tin on solder tails with overall nickel underplate

Boardlocks-Brass, tin plated

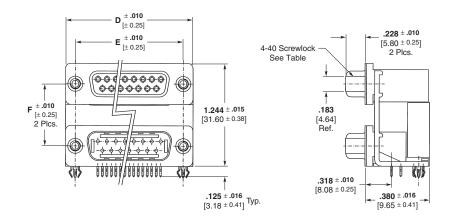
Female Screwlocks—Brass, nickel plated

Threaded Inserts—Brass, tin plated Brackets—Zinc

#### **Technical Documents:**

**Product Specification** 108-57517

See customer drawings for printed circuit board layouts.



Upper		Lower	Dimensions			Contact	Mounting	Part	
D-Sub		D-Sub	D	Е	F	Finish	Hardware	Number	
			<b>1.22</b> 30.95	<b>.984</b> 24.99	<b>.750</b> 19.05	А	4-40 inserts	1734279-1	
			<b>1.22</b> 30.95	<b>.984</b> 24.99	<b>.750</b> 19.05	В	4-40 inserts	1734279-2	
9p Plug	/	9p Plug	<b>1.22</b> 30.95	<b>.984</b> 24.99	<b>.750</b> 19.05	С	4-40 inserts	1734279-3	
ab Find	/	9p Plug	<b>1.22</b> 30.95	<b>.984</b> 24.99	<b>.750</b> 19.05	Α	4-40 fem s/l	1734280-1	
			<b>1.22</b> 30.95	<b>.984</b> 24.99	<b>.750</b> 19.05	С	4-40 fem s/l	1734280-3	
			<b>1.22</b> 30.95	<b>.984</b> 24.99	<b>.750</b> 19.05	А	4-40 inserts	1734282-1	
9p Plug	/	9p Rcpt.	<b>1.22</b> 30.95	<b>.984</b> 24.99	<b>.750</b> 19.05	В	4-40 inserts	1734282-2	
			<b>1.22</b> 30.95	<b>.984</b> 24.99	<b>.750</b> 19.05	С	4-40 inserts	1734282-3	
			<b>1.22</b> 30.95	<b>.984</b> 24.99	<b>.750</b> 19.05	А	4-40 inserts	1734285-1	
				<b>1.22</b> 30.95	<b>.984</b> 24.99	<b>.750</b> 19.05	В	4-40 inserts	1734285-2
	,	On Don't	<b>1.22</b> 30.95	<b>.984</b> 24.99	<b>.750</b> 19.05	С	4-40 inserts	1734285-3	
9p Rcpt.	/	/ 9p Rcpt.	<b>1.22</b> 30.95	<b>.984</b> 24.99	<b>.750</b> 19.05	А	4-40 fem s/l	1734286-1	
			<b>1.22</b> 30.95	<b>.984</b> 24.99	<b>.750</b> 19.05	В	4-40 fem s/l	1734286-2	
			<b>1.22</b> 30.95	<b>.984</b> 24.99	<b>.750</b> 19.05	С	4-40 fem s/l	1734286-3	
			<b>1.22</b> 30.95	<b>.984</b> 24.99	<b>.750</b> 19.05	А	4-40 inserts	1734207-1	
9p Rcpt.	/	9p Plug	<b>1.22</b> 30.95	<b>.984</b> 24.99	<b>.750</b> 19.05	В	4-40 inserts	1734207-2	
			<b>1.22</b> 30.95	<b>.984</b> 24.99	<b>.750</b> 19.05	С	4-40 inserts	1734207-3	
			<b>1.55</b> 39.30	<b>1.31</b> 33.30	<b>.750</b> 19.05	А	4-40 inserts	1-1734279-	
15p Plug	/	15p Plug	<b>1.55</b> 39.30	<b>1.31</b> 33.30	<b>.750</b> 19.05	В	4-40 inserts	1-1734279-	
			<b>1.55</b> 39.30	<b>1.31</b> 33.30	<b>.750</b> 19.05	С	4-40 inserts	1-1734279-	
			<b>1.55</b> 39.30	<b>1.31</b> 33.30	<b>.750</b> 19.05	А	4-40 inserts	1-1734282-	
15p Plug	/	15p Rcpt.	<b>1.55</b> 39.30	<b>1.31</b> 33.30	<b>.750</b> 19.05	В	4-40 inserts	1-1734282-	
			<b>1.55</b> 39.30	<b>1.31</b> 33.30	<b>.750</b> 19.05	С	4-40 inserts	1-1734282-	

Continued on next page

Note: All part numbers are RoHS compliant.



# AMPLIMITE HD-20 Subminiature D Stacked PCB Connectors Hybrid and Mixed Styles

Upper	Lower		Dimensions	<u> </u>	Contact	Mounting	Part
D-Sub	D-Sub	D	E	F	Finish	Hardware	Number
		<b>1.55</b> 39.30	<b>1.31</b> 33.30	<b>.750</b> 19.05	Α	4-40 inserts	1-1734285-1
		<b>1.55</b> 39.30	<b>1.31</b> 33.30	<b>.750</b> 19.05	В	4-40 inserts	1-1734285-2
45 D .	/ 45 D .	<b>1.55</b> 39.30	<b>1.31</b> 33.30	<b>.750</b> 19.05	С	4-40 inserts	1-1734285-3
15p Rcpt.	/ 15p Rcpt.	<b>1.55</b> 39.30	<b>1.31</b> 33.30	<b>.750</b> 19.05	А	4-40 fem s/l	1-1734286-1
		<b>1.55</b> 39.30	<b>1.31</b> 33.30	<b>.750</b> 19.05	В	4-40 fem s/l	1-1734286-2
		<b>1.55</b> 39.30	<b>1.31</b> 33.30	<b>.750</b> 19.05	С	4-40 fem s/l	1-1734286-3
		<b>1.55</b> 39.30	<b>1.31</b> 33.30	<b>.750</b> 19.05	А	4-40 inserts	1-1734207-1
15p Rcpt.	/ 15p Plug	<b>1.55</b> 39.30	<b>1.31</b> 33.30	<b>.750</b> 19.05	В	4-40 inserts	1-1734207-2
		<b>1.55</b> 39.30	<b>1.31</b> 33.30	<b>.750</b> 19.05	С	4-40 inserts	1-1734207-3
		<b>2.09</b> 53.10	<b>1.85</b> 47.04	<b>.750</b> 19.05	А	4-40 inserts	2-1734279-1
25p Plug	/ 25p Plug	<b>2.09</b> 53.10	<b>1.85</b> 47.04	<b>.750</b> 19.05	В	4-40 inserts	2-1734279-2
		<b>2.09</b> 53.10	<b>1.85</b> 47.04	<b>.750</b> 19.05	С	4-40 inserts	2-1734279-3
		<b>2.09</b> 53.10	<b>1.85</b> 47.04	<b>.750</b> 19.05	А	4-40 inserts	2-1734282-1
25p Plug	/ 25p Rcpt.	<b>2.09</b> 53.10	<b>1.85</b> 47.04	<b>.750</b> 19.05	В	4-40 inserts	2-1734282-2
		<b>2.09</b> 53.10	<b>1.85</b> 47.04	<b>.750</b> 19.05	С	4-40 inserts	2-1734282-3
		<b>2.09</b> 53.10	<b>1.85</b> 47.04	<b>.750</b> 19.05	А	4-40 inserts	2-1734285-1
		<b>2.09</b> 53.10	<b>1.85</b> 47.04	<b>.750</b> 19.05	В	4-40 inserts	2-1734285-2
		<b>2.09</b> 53.10	<b>1.85</b> 47.04	<b>.750</b> 19.05	С	4-40 inserts	2-1734285-3
25p Rcpt.	/ 25p Rcpt.	<b>2.09</b> 53.10	<b>1.85</b> 47.04	<b>.750</b> 19.05	Α	4-40 fem s/l	2-1734286-1
		<b>2.09</b> 53.10	<b>1.85</b> 47.04	<b>.750</b> 19.05	В	4-40 fem s/l	2-1734286-2
		<b>2.09</b> 53.10	<b>1.85</b> 47.04	<b>.750</b> 19.05	С	4-40 fem s/l	2-1734286-3
		<b>2.09</b> 53.10	<b>1.85</b> 47.04	<b>.750</b> 19.05	А	4-40 inserts	2-1734207-1
25p Rcpt.	/ 25p Plug	<b>2.09</b> 53.10	<b>1.85</b> 47.04	<b>.750</b> 19.05	В	4-40 inserts	2-1734207-2
		<b>2.09</b> 53.10	<b>1.85</b> 47.04	<b>.750</b> 19.05	С	4-40 inserts	2-1734207-3
		<b>2.73</b> 69.34	<b>2.500</b> 63.50	<b>.750</b> 19.05	Α	4-40 inserts	3-1734279-1
37p Plug	/ 37p Plug	<b>2.73</b> 69.34	<b>2.500</b> 63.50	<b>.750</b> 19.05	В	4-40 inserts	3-1734279-2
		<b>2.73</b> 69.34	<b>2.500</b> 63.50	<b>.750</b> 19.05	С	4-40 inserts	3-1734279-3
		<b>2.73</b> 69.34	<b>2.500</b> 63.50	<b>.750</b> 19.05	Α	4-40 inserts	3-1734282-1
37p Plug	/ 37p Rcpt.	<b>2.73</b> 69.34	<b>2.500</b> 63.50	<b>.750</b> 19.05	В	4-40 inserts	3-1734282-2
		<b>2.73</b> 69.34	<b>2.500</b> 63.50	. <b>750</b> 19.05	С	4-40 inserts	3-1734282-3
			00.00				

Continued on next page



# AMPLIMITE HD-20 Subminiature D Stacked PCB Connectors Hybrid and Mixed Styles (Continued)

Upper	Lower	Dimensions			Contact	Mounting	Part
D-Sub	D-Sub	D	E	F	Finish	Hardware	Number
		<b>2.73</b> 69.34	<b>2.500</b> 63.50	<b>.750</b> 19.05	А	4-40 inserts	3-1734285-1
		<b>2.73</b> 69.34	<b>2.500</b> 63.50	<b>.750</b> 19.05	В	4-40 inserts	3-1734285-2
07n Dent	/ 27n Dont	<b>2.73</b> 69.34	<b>2.500</b> 63.50	<b>.750</b> 19.05	С	4-40 inserts	3-1734285-3
37p Rcpt.	/ 37p Rcpt.	<b>2.73</b> 69.34	<b>2.500</b> 63.50	<b>.750</b> 19.05	А	4-40 fem s/l	3-1734286-1
		<b>2.73</b> 69.34	<b>2.500</b> 63.50	<b>.750</b> 19.05	В	4-40 fem s/l	3-1734286-2
		<b>2.73</b> 69.34	<b>2.500</b> 63.50	<b>.750</b> 19.05	С	4-40 fem s/l	3-1734286-3
		<b>2.73</b> 69.34	<b>2.500</b> 63.50	<b>.750</b> 19.05	А	4-40 inserts	3-1734207-1
37p Rcpt.	/ 37p Plug	<b>2.73</b> 69.34	<b>2.500</b> 63.50	<b>.750</b> 19.05	В	4-40 inserts	3-1734207-2
		<b>2.73</b> 69.34	<b>2.500</b> 63.50	<b>.750</b> 19.05	С	4-40 inserts	3-1734207-3



# AMPLIMITE HD-20 Subminiature D Stacked PCB Connectors Hybrid and Mixed Styles

# HD-20 Front Metal Shell, Right-Angle AMPLIMITE Connectors

# **Material and Finish:**

**Housings and Pin Spacer**—94V-0 rated thermoplastic, black

#### **Contacts:**

**Sockets**—Phosphor bronze or brass

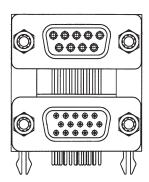
# Contact Plating-

Gold flash on mating end, tin on termination end, with entire contact nickel underplated

**Shell**—Steel, tin plated (1-1734870-1) Steel, nickel plated (1734870-1)

**Boardlocks**—Copper alloy, plated tin

Bracket—Steel



9 Position HD-20 Receptacle over 15 Position HD-22 Receptacle Part No. 1734870-1 (without Female Screwlocks) Part No. 1-1734870-1 (as shown, with Female Screwlocks)



# AMPLIMITE HD-20 Subminiature D Stacked PCB Connectors Hybrid and Mixed Styles (Continued)

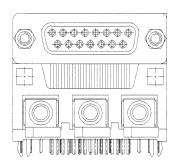
# HD-20 Front Metal Shell, Right-Angle Connectors

# **Material and Finish:**

Housing—94V-0 rated PBT, see table Contacts—Phosphor bronze or brass HD22 Receptacle Contact Plating—

Gold flash on contact area, tin on solder tail area, all over nickel underplated

**Audio Jack**—.000100 [.00254] min. tin over nickel underplate



15 Position HD-20 Receptacle over 3 Position Audio Plug

Description	Part Number
With female screwlocks & color-coded audio <sup>1</sup>	1734287-2
With color-coded audio <sup>1</sup>	1-1734287-2

¹ Color coded audio: Audio line in — light blue Audio line out — lime Microphone — pink

# **High-Rise Connectors**

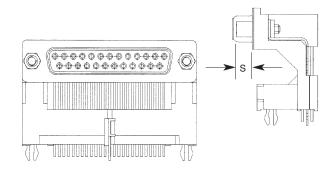
# **Material and Finish:**

**Housing**—94V-0 rated thermoplastic, burgundy

**Contacts**—Phosphor bronze

#### **Contact Plating:**

**A**—.000010 [.000254] gold on mating area, tin on solder tails, all over nickel



High-Rise 25 Position HD-20 Receptacle

Dimension S	Plating Code	Part Number	PC 99
<b>.236</b> 6.00	A	_	2-1734024-3

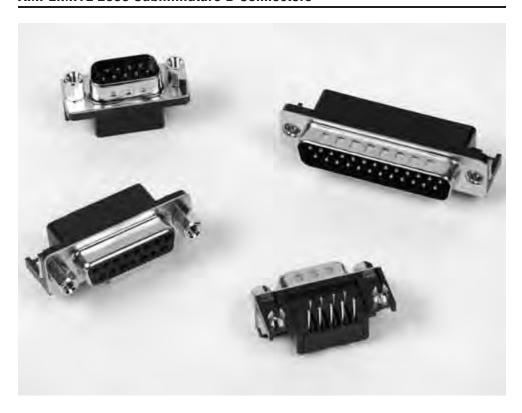


# **AMPLIMITE 2000 Subminiature D Connectors**

# **Product Facts**

- Flame retardant housings, rated up to 105°C
- Front metal-shell design
- Duplex plated gold flash or .000015 [0.00038] min. gold on mating end, tin on solder end, all over nickel underplate
- With boardlocks and 4-40 threads or female screwlocks
- Designed to Office Class II
- 9, 15 & 25 right-angle plugs and receptacles
- Recognized under the Component Program of the Underwriters Laboratories, Inc. File No. E28476

See customer drawings for circuit board layout.



# **AMPLIMITE 2000**

Subminiature D connectors represent the latest breakthrough in economical Subminiature D connector design.

Presently available in the more popular sizes -9-, 15- and 25-receptacles and plugs with a .318 [8.08] printed circuit board footprint, the AMPLIMITE 2000 connector line features front metal-shell RFI/EMI protection, flame retardant housings with integral 4-40 threads, boardlocks, and duplex plated gold-overnickel contacts.

South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013

UK: 44-8706-080-208



# **AMPLIMITE 2000 Subminiature Connectors** (Continued)

# **HD-20 Front Metal Shell Right-Angle Connectors**

# **Material and Finish:**

Housing—94V-0 rated thermoplastic, black

Shell—Steel, nickel plated

Contacts:

Pins—Brass

Sockets—Phosphor bronze

# **Contact Plating:**

A—Gold flash on mating end, tin on solder tails with overall nickel underplate

**B**—.000015 [0.00038] gold on mating end, tin on solder tails with overall nickel underplate

Boardlocks-Brass, tin plated

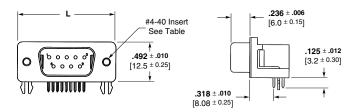
Female Screwlocks—Brass, nickel plated

Threaded Inserts—Brass, nickel plated

# **Technical Documents:**

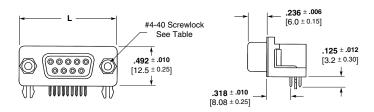
**Product Specification** 

108-57541



Typical Plug

Shell Size	Contact Finish	Dimension L Ref.	W ith Female Screwlocks	W ith 4—40 Threaded Inserts
9	Α	1.210	1734351-1	1734352-1
9	В	30.80	1734351-2	1734352-2
15	Α	1.540	_	1734360-1
15	В	39.20		1734360-2



Typical Receptacle

Shell Size	Contact Finish	Dimension L Ref.	W ith Female Screwlocks	W ith 4—40 Threaded Inserts
9	Α	1.210	1734354-1	1734348-1
9	В	30.80	1734354-2	1734348-2
15	. A		1734357-1	1734355-1
15	В	39.20	1734357-2	1734355-2
25	Α	2.090	1734349-1	1734350-1
25	В	53.10	1734349-2	1734350-2



# **HD-20 and HD-22 Slimline Connectors**

# 2 Rows of Soldertails

#### **Material and Finish:**

**Housing**—94V-0 rated thermoplastic, black

Shell—Low carbon steel, nickel plated

Contacts—Phosphor bronze or brass

Contact Plating—Gold flash on mating area; .000100 [0.00254] min. tin on solder tail area; overall .000050 [0.00127] min. nickel underplate

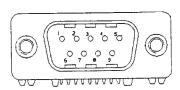
Boardlocks—Brass, tin plated over nickel underplate

Threaded Inserts—Brass, nickel plated

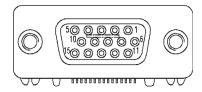
# **Technical Documents:**

**Product Specification** 

108-57541



9 Position Plug Part Number 1734340-1



15 Position VESA Receptacle HD-22 Part Number 1734341-1

# 1 Row of Soldertails

### **Material and Finish:**

**Housing**—94V-0 rated thermoplastic, black

Shell—Low carbon steel, nickel plated

Contacts—Brass

**Contact Plating**—.000015 [0.00038] min. gold on mating area; .000100 [0.00254] min. tin on solder tail area; overall .000050 [0.00127] min. nickel underplate

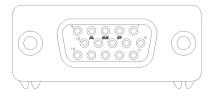
Boardlocks-Brass, tin plated over nickel underplate

Threaded Inserts—Brass, nickel plated

#### **Technical Documents:**

**Product Specification** 

108-57541



15 Position VESA Receptacle HD-22 Part Number 1734335-1



# **HD-22 Right-Angle Posted Subminiature D Connectors**

# **Product Facts**

- **■** Flame retardant thermoplastic housing material, UL94V-0 rated
- Low cost front metal shell design compatible with full metal-shell connectors
- Integral boardlock versions secure connectors to pc boards prior to soldering
- Contacts available in platings to satisfy different applications
- Integral threaded inserts and screwlocks available
- Recognized under the Component Program of Underwriters Laboratories, Inc., File No. E28476



HD-22 Front Metal Shell .350 [8.89] PCB Footprint



Plug



Receptacle



# HD-22 Right-Angle Posted Subminiature D Connectors (Continued)

# **Material and Finish:**

**Housing**—94V-0 rated thermoplastic, black

▲ VESA Std. 15-position Receptacle Housing Material—Thermoplastic 94V-0 blue per VESA Std.

Shell—Steel, nickel plated

Contacts

Pins—Brass

Sockets—Phosphor bronze

Contact Plating-

Gold flash, .000015 [0.00038] or .000030 [0.00076] on mating end, tin on solder tails with overall nickel underplate

Boardlocks—Brass, tin plated

Female Screwlocks—Brass, nickel plated

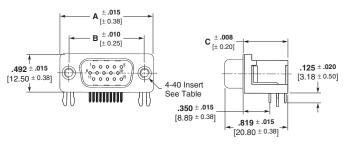
**Threaded Inserts**—Brass, nickel plated

#### **Technical Documents:**

Product Specification—108-1092 Application Specification— 114-13198

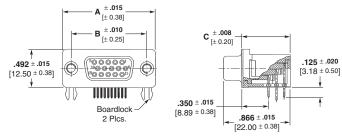
See customer drawings for printed circuit board layouts.

Recognized under the Component Program of Underwriters Laboratories, Inc., File No. E28476



Right-Angle Plug

No. of	D	imensio	ns	Mounting	PCB		Part Numbers	
Contact Positions	A	В	С	Hardware	Mounting Style	Gold Flash	15K" Goĺd	30K" Goĺd
15	<b>1.212</b> 30.81	<b>.984</b> 24.99	<b>.582</b> 14.80	4-40 inserts			5749767-2	5749767-1
15	<b>1.212</b> 30.81	<b>.984</b> 24.99	<b>.582</b> 14.80	4-40 screw locks	board locks	5749768-3	5749768-2	5749768-1
26	<b>1.543</b> 39.20	<b>1.312</b> 33.32	<b>.583</b> 14.81	4-40 inserts	board locks	5749769-3	5749769-2	5749769-1
44	<b>2.089</b> 53.05	<b>1.852</b> 47.04	<b>.593</b> 15.06	4-40 inserts	board locks	5749771-3	5749771-2	5749771-1
62	<b>2.732</b> 69.40	<b>2.500</b> 63.50	<b>.593</b> 15.06	4-40 inserts	board locks	5749639-3	5749639-2	5749639-1
78	<b>2.638</b> 67.00	<b>2.400</b> 61.00	<b>.693</b> 17.60	4-40 screw locks	board locks	5749234-3	5749234-2	_



Right-Angle Receptacle

No. of	D	imensio	ns	Mounting	PCB		Part Numbers			
Contact Positions	A	В	С	Hardware	Mounting Style	Gold Flash	15K" Gold	30K" Gold		
15	<b>1.212</b> 30.81	<b>.984</b> 25.00	<b>.630</b> 16.00	4-40 inserts	board locks	1-1734530-1	1-1734530-2	1-1734530-3		
15	<b>1.212</b> 30.81	<b>.984</b> 25.00	<b>.630</b> 16.00	4-40 screw locks	board locks	1734530-1	1734530-2	1734530-3		
	<b>1.212</b> 30.81	<b>.984</b> 25.00	<b>.630</b> 16.00	4-40 inserts			_	2-1734344-3		
15 VESA	<b>1.212</b> 30.80	<b>.984</b> 25.00	<b>.630</b> 16.00	4-40 screw locks	board locks	1-1734344-1	_	_		
26	<b>1.543</b> 39.20	<b>1.311</b> 44.32	<b>.593</b> 15.06	4-40 inserts	hoard locks		2-5748481-2	5748481-5		
20	<b>1.543</b> 39.20	<b>1.311</b> 44.32	<b>.593</b> 15.06	4-40 screw locks	board locks	2-5748481-5	2-5748481-4	5748481-6		
44	<b>2.089</b> 53.05	<b>1.852</b> 47.04	<b>.583</b> 14.81	4-40 inserts	board locks	2-5748482-4	2-5748482-3	5748482-5		
44	<b>2.089</b> 53.05	<b>1.852</b> 47.04	<b>.583</b> 14.81	4-40 screw locks	board locks	_	2-5748482-5	_		
62	<b>2.732</b> 69.40	<b>2.500</b> 63.50	<b>.583</b> 14.81	4-40 inserts	board locks	2-5748394-4	2-5748394-3	5748394-5		
02	<b>2.732</b> 69.40	<b>2.500</b> 63.50	<b>.583</b> 14.81	4-40 screw locks	board locks	2-5748394-6	2-5748394-5	5748394-6		
78	<b>2.638</b> 67.00	<b>2.400</b> 61.00	<b>.693</b> 17.60	4-40 inserts	board locks	2-5748483-1	2-5748483-0	5748483-5		
	<b>2.638</b> 67.00	<b>2.400</b> 61.00	<b>.693</b> 17.60	4-40 screw locks	board locks		2-5748483-2	5748483-6		



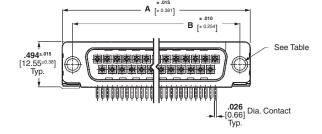
# HD-20 Front Metal-Shell Right-Angle Posted Connectors 318 Mount

# Post Size—.026 [0.66] Dia.

# Plug



With Grounding Indents and Grounding Straps

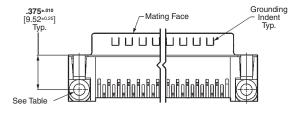


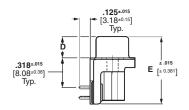


With Threaded Insert



With Fixed Female Screwlock





#### **Material and Finish:**

 $\textbf{Front Shell} \\ \textbf{--} \\ \textbf{Steel, tin plated}$ 

**Housing**—94V-0 rated thermoplastic,

Eyelets—Brass, tin plated

Threaded Inserts—Zinc

Female Screwlock—Zinc

Boardlocks—Copper alloy, tin plated

 $\label{eq:posted} \textbf{Pin Contacts (Posted)} \\ \textbf{--} \\ \textbf{Brass},$ 

duplex plated as follows:

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

**B**—Gold flash on mating end, tin on termination end, with entire contact nickel underplated

# **Technical Documents:**

Product Specification—108-40025

**Application Specification**—114-40010

See customer drawings for printed

circuit board layouts.

- Recognized under the Component Program of Underwriters
  Laboratories, Inc.,
  File No. E28476
- Certified by Canadian Standards Association, File No. LR 7189



									Plug Par	t Numbers			
01	No. of	Dimensions				Contact	Wi	Without Boardlocks			With Boardlocks		
Shell Size	Contact Positions	Α	В	D	E	Finish (Plating Code)	With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks	With Standard Mounting Holes	With Threaded Inserts	With Fixed Female Screwlocks	
	9	1.213	.984	.235	.733	Α	5747250-2	5747250-4	5747250-6	5747840-2	5747840-4	5747840-6	
'	9	30.81	24.99	5.97	18.62	В	_	5747250-3	_	_	5747840-3	5747840-5	
2	15	1.541	1.312	.235	.733	Α	5747236-2	5747236-4	5747236-6	5747841-2	5747841-4	5747841-6	
2	15	39.14	33.33	5.97	18.62	В	_	5747236-4	_	_	5747841-3	_	
3	25	2.088	1.852	.230	.738	Α	5747238-2	5747238-4	5747238-6	5747842-2	5747842-4	5747842-6	
3	25	53.04	47.04	5.84	18.75	В	5747238-2	5747238-3	_	_	5747842-3	5747842-5	
			.230	.740	Α	_	5747252-4	_	5747843-2	5747843-4	5747843-6		
4			63.50	5.84	18.80	В	_	_	_	_	5747843-3		

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 are used as mating hardware for connectors with 4-40 female screwlocks.



# HD-20 Front Metal-Shell Right-Angle Posted Connectors 318 Mount (Continued)

# Post Size—.026 [0.66] Dia.

# Receptacle



With Grounding Straps

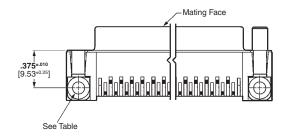


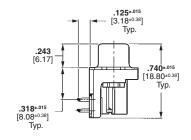
With Threaded Insert



With Fixed Female Screwlock

# A [ = 0.381] A [ = 0.284] B [ = 0.254] B [ = 0.254] See Table Occion [ Occion [ Typ. ] Dia.





#### **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 plated

# Socket Contacts (Posted)-

Phosphor bronze, duplex plated as follows:

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

**B**—Gold flash on mating end, tin on termination end, with entire contact nickel underplated

#### **Technical Documents:**

Product Specification—108-40025
Application Specification—
114-40010

					Receptacle Part Numbers								
	No. of	Dime	nsions	Contact	V	/ithout Boardlo	ocks	,	With Boardloc	ks			
Shell Size	Contact Positions	A	B	Finish (Plating Code)	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	.984	А	5745781-2	5745781-4	5745781-6	5747844-2	5747844-4	5747844-6			
'	9	30.81	24.99	В	_	5745781-3	_	_	5747844-3	5747844-5			
2	15	1.541	1.312	Α	5745782-2	5745782-4	5745782-6	_	5747845-4	5747845-6			
2	15	39.14	33.33	В	_	_	_	_	5747845-3	5747845-5			
0	O.F.	2.088	1.852	Α	5745783-2	5745783-4	5745783-6	5747846-2	5747846-4	5747846-6			
3	3 25 53.0		47.04	В	_	5745783-3	5745783-5	_	5747846-3	5747846-5			
4	37	<b>2.729</b> 69.32	<b>2.500</b> 63.50	Α	5745784-2	5745784-4	5745784-6	_	5747847-4	5747847-6			

Notes: 1. All receptacle connectors are preloaded with size 20 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. Male screw retainers are used as mating hardware for connectors with 4-40 female screwlocks.

Note: All part numbers are RoHS compliant.

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# HD-20 Front Metal-Shell Right-Angle Posted Connectors 318 Mount (Continued)

# Post Size—.026 [0.66] Dia.

# Plug



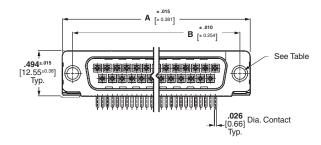
With Grounding Indents and Grounding Straps

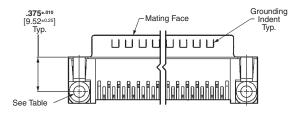


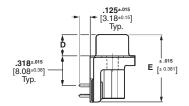
With Threaded Insert



With Fixed Female Screwlock







# **Material and Finish:**

Front Shell—Steel, tin plated

**Housing**—94V-0 rated thermoplastic, compatible with standard wave, vapor phase, and infra-red reflow (SMT) soldering, black

Eyelets-Brass, tin plated

Threaded Inserts—Zinc

Female Screwlock—Zinc

Boardlocks --- Copper alloy, tin plated

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

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

**B**—Gold flash on mating end, tin on termination end, with entire contact nickel underplated

#### **Technical Documents:**

Product Specification—108-40025 Application Specification— 114-40010

Shell		No. of		Dimen	sions		Contact Finish		t Numbers pardlocks
	Size	Contact Positions	Α	В			(Plating Code)	With Threaded Inserts	With Fixed Female Screwlocks
	1	9	1.213	.984	.235	.733	Α	5788792-1	5788793-1
	'	9	30.81	24.99	9 5.97 18.62		В	5788792-2	5788793-2
	3	2 05 2	2.088	1.852	.230	.738	Α	5788794-1	5788795-1
	3	25	53.04	47.04	5.84	18.75	В	5788794-2	_

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

- Recommended pc board thickness is .062 [1.58] for connectors with boardlocks and .093 [2.36] max. for all others.
- 3. Male screw retainers are used as mating hardware for connectors with 4-40 female screwlocks.



# HD-20 Front Metal-Shell Right-Angle Posted Connectors 318 Mount (Continued)

# Post Size—.026 [0.66] Dia.

# Receptacle



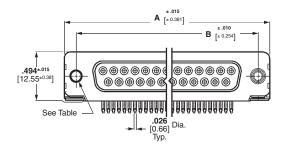
With Grounding Straps

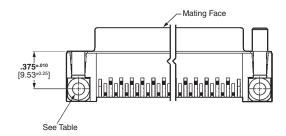


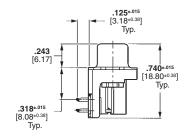
With Threaded Insert



With Fixed Female Screwlock







#### **Material and Finish:**

Front Shell—Steel, tin plated

**Housing**—94V-0 rated thermoplastic, compatible with standard wave, vapor phase, and infra-red reflow (SMT) soldering, black

Eyelets-Brass, tin plated

Threaded Inserts—Zinc

Female Screwlock—Zinc

Boardlocks—Copper alloy, tin plated Socket Contacts (Posted)-

Phosphor bronze, duplex plated as fol-

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

**B**—Gold flash on mating end, tin on termination end, with entire contact nickel underplated

# **Technical Documents:** Product Specification—108-40025

Application Specification-114-40010

					Receptacle Part Numbers			
Shell	No. of	Dime	nsions	Contact Finish	Without Boardlocks	With Boardlocks		
Size Contact Positions		A B		(Plating Code)	With Fixed Female Screwlocks	With Threaded Inserts	With Fixed Female Screwlocks	
-1	9	1.213	.984	Α	5788803-1	5788796-1	5788797-1	
'	1 9	30.81	24.99	В	_	5788796-2	5788797-2	
0	15	1.541	1.312	А	_	5788798-1	5788799-1	
2	15	39.14	33.33	В	_	5788798-1	_	
0	0.5	2.088	1.852	А	_	5788800-1	5788801-1	
3	3 25	53.04	47.04	В	_	5788800-2	5788801-2	
4	37	<b>2.729</b> 69.32	<b>2.500</b> 63.50	А	_	5788802-1	_	

Notes: 1. All receptacle connectors are preloaded with size 20 DF posted socket contacts.

- $2. \ Recommended \ pc \ board \ thickness \ is \ .062 \ [1.58] \ for \ connectors \ with \ boardlocks \ and \ .093 \ [2.36] \ max. \ for \ boardlocks \ and \ .093 \ [2.36] \ max.$
- 3. Male screw retainers are used as mating hardware for connectors with 4-40 female screwlocks.

Note: All part numbers are RoHS compliant.

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# HD-20 Full Metal-Shell Right-Angle Posted Connectors 454 Mount

# Post Size—.025 [0.64] Sq.

# Receptacle



# **Material and Finish:**

Shell—Steel, tin plated

**Insert**—94V-0 rated thermoplastic, black

# Contacts (Posted):

Pin—Brass

Socket—Phosphor bronze

# **Contact Plating:**

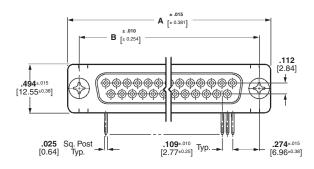
**A**—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact nickel underplated

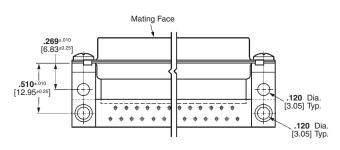
**B**—Gold flash on mating end, tin on termination end, with entire contact nickel underplated

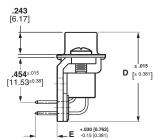
#### **Technical Documents:**

Product Specification—108-40025 Application Specification— 114-40013

See customer drawings for printed circuit board layouts.







01-11-01	No. of		Dime	Contact Finish	Part		
Shell Size	Contact Positions	Α	В	D	E	(Plating Code)	Number
					.125	Α	5745438-4
4	9	1.213	.984	.915	3.18	В	5745438-3
'	9	30.81	24.99	23.24	<b>.220</b> 5.59	В	5745438-1
2	15	1.541	1.312	915	<b>.125</b> 3.18	А	5745439-4
2	15	39.14	33.33	23.24	<b>.220</b> 5.59	А	5745439-2
3	25	2.088	1.852	.919	<b>.125</b> 3.18	А	5745440-4
3	25	53.04	47.04	23.34	<b>.220</b> 5.59	В	5745440-1
4	4 07 2.729 2.500 .919		<b>.125</b> 3.18	А	5745441-4		
4	37	69.32	63.50	23.34	<b>.220</b> 5.59	В	_

Notes: 1. All connectors are preloaded with size 20 DF posted contacts; plugs with pin contacts and receptacles with

2. .125 [3.18] post length is recommended for pc board thickness of .093 [2.36] max.; .220 [5.59] post length is recommended for pc board thickness of .125 [3.18] max.



# HD-20 Full Metal-Shell Right-Angle Posted Connectors 454 Mount (Continued)

# Post Size—.025 [0.64] Sq.

# Plug



Without Grounding Indents



With Grounding Indents

#### **Material and Finish:**

**Shell**—Steel, tin plated

**Insert**—94V-0 rated thermoplastic, black

# Contacts (Posted):

Pin—Brass

Socket—Phosphor bronze

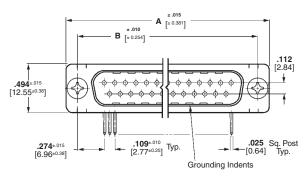
# **Contact Plating:**

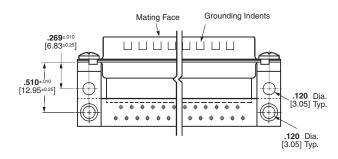
**A**—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact nickel underplated

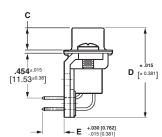
**B**—Gold flash on mating end, tin on termination end, with entire contact nickel underplated

### **Technical Documents:**

Product Specification—108-40025 Application Specification— 114-40013







No. of				Contact	Part Numbers				
Shell Size	Contact			Dimension	s		Finish	With	
Sileli Size	Positions	Α	В	С	D	E	(Plating Code)	Grounding Indents	
						.125	Α	5745434-8	
1	9	1.213	.984	.235	<b>.915</b> 23.24	.915	3.18	В	_
'	9	30.81	24.99	5.97		<b>.220</b> 5.59	В	_	
2	15	1.541	1.312	.235	.915	<b>.125</b> 3.18	Α	5745435-8	
2	15	39.14	33.33	5.97	23.24	<b>.220</b> 5.59	Α	_	
3	25	2.088	1.852	.230	.919	<b>.125</b> 3.18	Α	_	
3	25	53.04	47.04	5.84	23.34	<b>.220</b> 5.59	В	5745436-3	
4	4 37 2.729 2.500 .230 .919	<b>.125</b> 3.18	Α	5745437-8					
4	37	69.32	63.50	5.84	23.34	. <b>220</b>	В	5745437-3	

**Notes:** 1. All connectors are preloaded with size 20 DF posted contacts; plugs with pin contacts and receptacles with socket contacts.

2. .125 [3.18] post length is recommended for pc board thickness of .093 [2.36] max.; .220 [5.59] post length is recommended for pc board thickness of .125 [3.18] max.



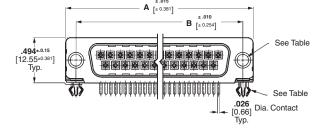
# HD-20 Front Metal-Shell Right-Angle Posted Connectors 478 Mount

# Post Size—.026 [0.66] Dia.

# Plug



With Grounding Indents and Grounding Straps







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 plated

 $\label{eq:posted} \textbf{Pin Contacts (Posted)} \\ \textbf{--} \\ \textbf{Brass},$ 

duplex plated as follows:

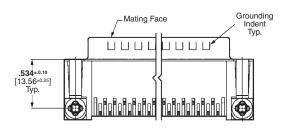
**A**—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact nickel underplated

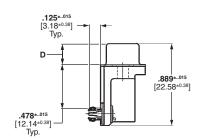
**B**—Gold flash on mating end, tin on termination end, with entire contact nickel underplated

#### **Technical Documents:**

**Product Specification**—108-40025 **Application Specification**— 114-40010

See customer drawings for printed circuit board layouts.





						Plug Part Number		
Shell No. of		Г	Dimension	ıs	Contact Finish	With Boardlocks		
Size	Contact Positions	Α	В	(5)		With Threaded Inserts	With Fixed Female Screwlocks	
1	9	<b>1.213</b> 30.81	<b>.984</b> 24.99	<b>.235</b> 5.97	А	5747848-4	_	
3	25	<b>2.088</b> 53.04	<b>1.852</b> 47.04	. <b>230</b> 5.84	Α	_	5747850-6	

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

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

Male screw retainers are used as mating hardware for connectors with 4-40 female screwlocks.



# HD-20 Front Metal-Shell Right-Angle Posted Connectors 478 Mount (Continued)

# Post Size—.026 [0.66] Dia.

# Receptacle



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 plated

# Socket Contacts (Posted)—

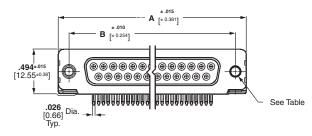
Phosphor bronze, duplex plated as follows:

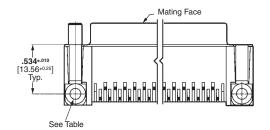
**A**—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact nickel underplated

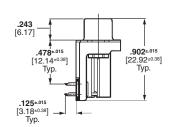
**B**—Gold flash on mating end, tin on termination end, with entire contact nickel underplated

# **Technical Documents:**

**Product Specification**—108-40025 **Application Specification**— 114-40010







					Receptacle Pa	rt Numbers
Shell	No. of Contact	Dimen	Contact rinish		Without Boardlocks	With Boardlocks
Size	Positions	Α	В	(Plating Code)	With Threaded Inserts	With Threaded Inserts
1	9	<b>1.213</b> 30.81	<b>.984</b> 24.99	A	5747418-4	5747852-4

Notes: 1. All receptacle connectors are preloaded with size 20 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.
- Male screw retainers are used as mating hardware for connectors with 4-40 female screwlocks.



# HD-20 Full Metal-Shell Right-Angle Posted Connectors 545 Mount

# Post Size—.025 [0.64] Sq.

# Plug



Without Grounding Indents



With Grounding Indents



With 4-40 Female Screwlocks

# Material and Finish:

**Shell**—Steel, tin plated **Insert**—94V-0 rated thermoplastic, black

Female Screwlock—Steel, zinc plated

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

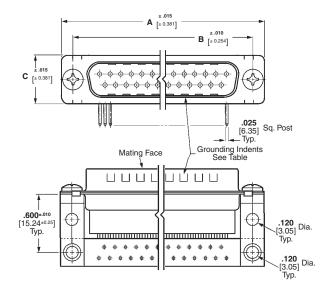
**A**—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact nickel underplated

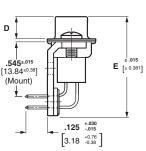
**B**—Gold flash on mating end, tin on termination end, with entire contact nickel underplated

#### **Technical Documents:**

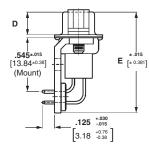
Product Specification—108-40025 Application Specification— 114-40013

See customer drawings for printed circuit board layouts.





With Standard Mounting Screws



With 4-40 Female Screwlocks

								Plug Part Numbers			
Shell Size	No. of Contact		Dir	nensio	ns		Contact Without Finish Grounding (Plating Indents		With Grounding Inden		
	Pos.	Α	В	С	D	E (Flating		With Standard Mounting Screws*	With Standard Mounting Screws	With Female Screwlocks	
1	9	<b>1.213</b> 30.81	<b>.984</b> 24.99	<b>.494</b> 12.55	<b>.235</b> 5.99	<b>1.025</b> 26.04	Α	5745351-2	5745351-4	5747197-4	
2	15	1.541	1.312	.494	.235	1.025	Α	_	5745352-4	_	
2	15	39.14	33.33	12.55	5.99	26.04	В	5745352-1	_	_	
3	25	<b>2.088</b> 53.04		<b>.494</b> 12.55	<b>.230</b> 5.84	<b>1.029</b> 26.14	Α	_	_	5747022-2	
4	37	<b>2.729</b> 69.32		<b>.494</b> 12.55	<b>.230</b> 5.84	<b>1.029</b> 26.14	Α	_	5745354-4	_	
5	50		<b>2.406</b> 61.11	<b>.605</b> 15.37	<b>.230</b> 5.84	<b>1.149</b> 29.19	Α	_	5745355-4	5747497-4	

<sup>\*</sup>These plugs can be made available with female screwlocks, consult Tyco Electronics.

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

2. Recommended pc board thickness is .093 [2.36] max.

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



# HD-20 Full Metal-Shell Right-Angle Posted Connectors 545 Mount (Continued)

# Post Size—.025 [0.64] Sq.

# Receptacle





With 4-40 **Female Screwlocks** 

#### **Material and Finish:**

Shell—Steel, tin plated

Insert—94V-0 rated thermoplastic,

Female Screwlock—Steel, zinc plated

# Socket Contacts (Posted)-

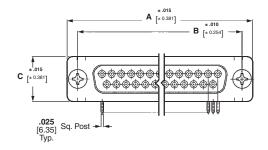
Phosphor bronze, duplex plated as

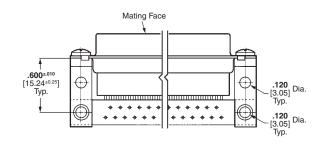
**A**—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact nickel underplated

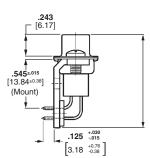
**B**—Gold flash on mating end, tin on termination end, with entire contact nickel underplated

#### **Technical Documents:**

Product Specification—108-40025 Application Specification-114-40013







Shell	No. of Contact		Dimer	nsions		Contact Finish	Receptacle Pa	Receptacle Part Numbers	
Size	Positions	Α	В	С	E	(Plating Code)	With Standard Mounting Screws	With Female Screwlocks	
	0	1.213	.984	.494	1.033	Α	5745112-2	5747020-2	
ı	9	30.81	24.99	12.55	26.24	В	_	5747020-1	
2	15	<b>1.541</b> 39.14	<b>1.312</b> 33.33	<b>.494</b> 12.55	<b>1.033</b> 26.24	Α	5745113-2	5747021-2	
3	25	<b>2.088</b> 53.04	<b>1.852</b> 47.04	<b>.494</b> 12.55	<b>1.033</b> 26.24	Α	5745114-2	5745536-2	
4	37	<b>2.729</b> 69.32	<b>2.500</b> 63.50	<b>.494</b> 12.55	<b>1.033</b> 26.24	Α	5745115-2	_	
5	50	2.635	2.406	.605	1.153	Α	5745116-2	5747193-2	
5	50	66.93	61.11	15.37	29.29	B	5745116-1	5747193-1	

Notes: 1. All receptacles are preloaded with size 20 DF posted socket contacts.

2. Recommended pc board thickness is .093 [2.36] max.
3. Male screw retainers are used as mating hardware for connectors with 4-40 female screwlocks.

Note: All part numbers are RoHS compliant.

South America: 55-11-2103-6000

Hong Kong: 852-2735-1628 Japan: 81-44-844-8013

UK: 44-8706-080-208



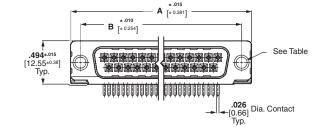
# HD-20 Front Metal-Shell Right-Angle Posted Connectors 590 Mount

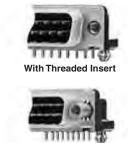
# Post Size—.026 [0.66] Dia.

# Plug

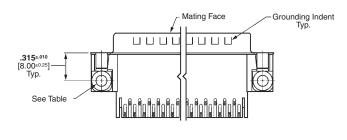


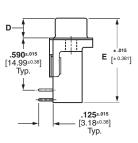
With Grounding Indents and Grounding Straps





With Fixed Female Screwlock





# **Material and Finish:**

**Front Shell**—Steel, tin plated **Housing**—94V-0 rated thermoplastic,

**Eyelets**—Brass, tin plated

black

Threaded Inserts—Zinc

Female Screwlock—Zinc

Boardlocks—Copper alloy, tin plated

Pin Contacts (Posted)—Brass,

duplex plated as follows:

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

**B**—Gold flash on mating end, tin on termination end, with entire contact nickel underplated

#### **Technical Documents:**

Product Specification—108-40025

Application Specification—

114-40010

					Plug Part Numbers			
Shell No. of		Dimens	sions		Contact	Without Boardlocks	With Boardlocks	
Contact Positions	Α	В	D	Е	(Plating Code)	With Threaded Inserts	With Threaded Inserts	With Fixed Female Screwlocks
0	1.213	.984	.235	.965	Α	5745990-4	5747832-4	5747832-6
9	30.81	24.99	5.97	24.51	В	5745990-3	5747832-3	_
15	<b>1.541</b> 39.14	<b>1.312</b> 33.33	<b>.235</b> 5.97	<b>.965</b> 24.51	Α	_	5747833-4	5747833-6
25	<b>2.088</b> 53.04	<b>1.852</b> 47.04	<b>.230</b> 5.84	<b>.970</b> 24.64	Α	5745994-4	5747834-4	5747834-6
37	<b>2.729</b> 69.32	<b>2.500</b> 63.50	<b>.230</b> 5.84	<b>.972</b> 24.69	Α	_	5747835-4	5747835-6
	Contact Positions  9  15  25	Contact Positions         A           9         1.213 30.81           15         1.541 39.14           25         2.088 53.04           27         2.729	Contact Positions         A         B           9         1.213 30.81         .984 24.99           15         1.541 39.14         1.312 39.14           25         2.088 53.04         1.852 47.04           27         2.729         2.500	Contact Positions         A         B         D           9         1.213 30.81         .984 24.99         .235 5.97           15         1.541 39.14         1.312 33.33         .235 5.97           25         2.088 53.04         1.852 47.04         .230 5.84           27         2.729         2.500         .230	Contact Positions         A         B         D         E           9         1.213 30.81         .984 24.99         .235 5.97         .965 24.51           15         1.541 39.14         1.312 33.33         .235 5.97         .24.51           25         2.088 53.04         1.852 47.04         .230 58.4         .970 24.64           27         2.729         2.500         .230         .972	Contact Positions   A   B   D   E     Finish (Plating Code)	No. of Contact Positions         Dimensions         E         Contact Finish (Plating Code)         Without Boardlocks         With Threaded Inserts           9         1.213         .984         .235         .965         A         5745990-4           30.81         24.99         5.97         24.51         B         5745990-3           15         1.541         1.312         .235         .965         A         —           25         2.088         1.852         .230         .970         A         5745994-4           25         2.304         47.04         5.84         24.64         A         5745994-4           27         2.729         2.500         .230         .972         A	No. of Contact Positions  A B D E Contact Finish (Plating Code)  9 1.213

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 are used as mating hardware for connectors with 4-40 female screwlocks.

Note: All part numbers are RoHS compliant.

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Catalog 82068 Revised 1-08 Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 01-800-733-8926 C. America: 52-55-1106-0803 South America: 55-11-2103-6000 Hong Kong: 852-2735-1628 Japan: 81-44-844-8013 UK: 44-8706-080-208



# HD-20 Front Metal-Shell Right-Angle Posted Connectors 590 Mount (Continued)

# Post Size—.026 [0.66] Dia.

# Receptacle



With Grounding Straps



With Threaded Insert



With Fixed Female Screwlock

#### **Material and Finish:**

Front Shell—Steel, tin plated Housing—94V-0 rated thermoplastic,

Eyelets-Brass, tin plated

Threaded Inserts—Zinc

Female Screwlock—Zinc

Boardlocks—Copper alloy, tin plated

# Socket Contacts (Posted)-

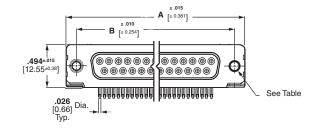
Phosphor bronze, duplex plated as follows:

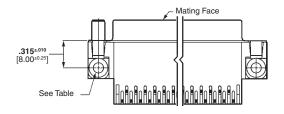
**A**—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact nickel underplated

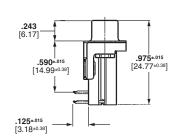
**B**—Gold flash on mating end, tin on termination end, with entire contact nickel underplated

#### **Technical Documents:**

Product Specification—108-40025 Application Specification-114-40010







					Receptacle Part Numbers				
Shell	Chall No. of		nsions	Contact	Without I	Boardlocks	With Boardlocks		
Size	Contact Positions	Α	В	Finish (Plating Code)	With Threaded Inserts	With Fixed Female Screwlocks	With Threaded Inserts	With Fixed Female Screwlocks	
1	9	<b>1.213</b> 30.81	<b>.984</b> 24.99	Α	5745988-4	5745988-6	5747836-4	5747836-6	
2	15	<b>1.541</b> 39.14	<b>1.312</b> 33.33	Α	5745984-4	_	5747837-4	_	
0	0.5	2.088	1.852	Α	_	5745992-6	5747838-4	5747838-6	
3	25	53.04	47.04	В	5745992-3	_	5747838-3	_	
4	37	<b>2.729</b> 69.32	<b>2.500</b> 63.50	Α	5745996-4	_	5747839-4	_	

Notes: 1. All receptacle connectors are preloaded with size 20 DF posted socket contacts.

- 2. Recommended pc board thickness is .062 [1.58] for connectors with boardlocks and .093 [2.36] max. for
- 3. Male screw retainers are used as mating hardware for connectors with 4-40 female screwlocks.



# **HD-20 All-Plastic Right-Angle Posted Connectors 318 Mount**

# Receptacle—With Boardlocks



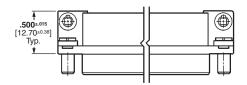
With Threaded Insert

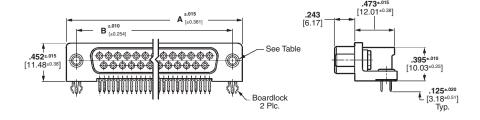


With Threaded Insert



With Fixed Female Screwlock





Mating Face

# **Material and Finish:**

Housing—94V-0 rated thermoplastic, black

Eyelets—Brass, tin plated

Threaded Inserts—Zinc

Female Screwlock—Zinc

as follows:

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

# Тур. **Boardlock**—Copper alloy, tin plated Socket Contacts (Posted)-Phosphor bronze, duplex plated

#### **Technical Documents:**

Product Specification—108-1226 Application Specification-114-40027

See customer drawings for printed circuit board layouts.

				Contact	Part N	umbers
Shell Size	No. of Contact Positions	Dimer	nsions B	Finish (Plating Code)	With Threaded Inserts	With Fixed Female Screwlocks
1	9	<b>1.222</b> 31.04	<b>.984</b> 24.99	А	_	5748979-1
3	25	<b>2.090</b> 53.09	<b>1.852</b> 47.04	А	5748901-1	5748981-1

Consult Tyco Electronics for availability.

Notes: 1. All receptacle connectors are preloaded with size 20 DF posted socket contacts.

2. Recommended pc board thickness is .062 [1.58].

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

# HD-20 All-Plastic Right-Angle Posted Connectors 318 Mount (Continued) Plug





With Threaded Insert

#### **Material and Finish:**

**Housing**—94V-0 rated thermoplastic. black

Eyelets-Brass, tin plated Threaded Inserts—Zinc

Boardlock—Copper alloy, tin plated

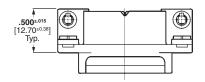
Pin Contacts (Posted)—Copper alloy, duplex plated as follows: **A**—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact nickel underplated

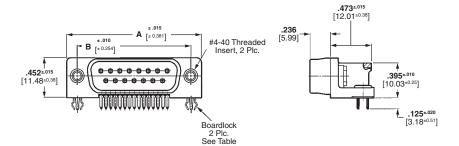
**B**—.000010 [0.00025] min. gold on mating end, tin on termination end, with entire contact nickel underplated

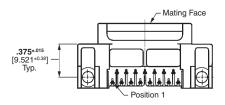
#### **Technical Documents:**

Product Specification—108-1226 Application Specification-114-40027

See customer drawings for printed circuit board layouts.







Shell	No. of Contact	Dimensions		Contact Finish	Part Numbers With Threaded Inserts	
Size	Positions	Α	В	(Plating Code)	With Boardlocks	Without Boardlocks
2	15	<b>1.550</b> 39.37	<b>1.312</b> 33.32	Α	5748904-1	_
3	25	<b>2.090</b> 53.09	<b>1.852</b> 47.04	В	_	5748865-3

Consult Tyco Electronics for availability.

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

2. Recommended pc board thickness is .062 [1.58].

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

Note: All part numbers are RoHS compliant.

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# HD-20 All-Plastic Right-Angle Posted Connectors 318 Mount (Continued)

# Post Size—.026 [0.66] Dia.

# Receptacle—Without Boardlocks



With Standard Mounting Holes



With Threaded Insert



With Fixed Female Screwlock

#### **Material and Finish:**

**Housing**—94V-0 rated thermoplastic, black

**Threaded Inserts**—Zinc, chromate coated

Female Screwlocks—Zinc, chromate

#### Socket Contacts (Posted)-

Phosphor bronze, duplex plated as follows:

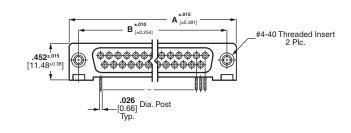
**A**—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact nickel underplated

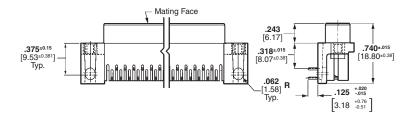
**B**—Gold flash on mating end, tin on termination end, with entire contact nickel underplated

#### **Technical Documents:**

Product Specification—108-40025 Application Specification— 114-40015

See customer drawings for printed circuit board layouts.





				Contact		Part Numbers			
Shell Size	No. of Contact Positions	A Dimer	B B	Contact Finish (Plating Code)	With Threaded Inserts	With Fixed Female Screwlocks	With .125 [3.18] Mounting Holes		
	9	1.213	.984	Α	5745394-2	5745395-2			
	9	30.81	24.99	В	_	_	5745131-1		
2	15	1.541	1.312	Α	_	5745396-2	5745396-2		
2	15	39.14	33.32	В	_	_	_		
3	25	2.088	1.852	Α	5745392-2	5745397-2	5745132-2		
	25	53.04	47.04	В	_	_	_		

Notes: 1. All receptacle connectors are preloaded with size 20 DF posted socket contacts.

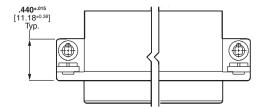
2. Recommended pc board thickness is .093 [2.36].

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

# HD-20 All-Plastic Right-Angle Posted Connectors 590 Mount

# Receptacle—With Boardlocks



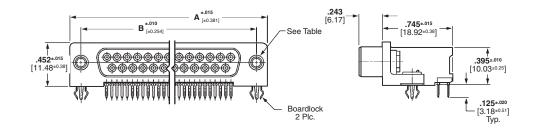




With Threaded Insert



With Fixed Female Screwlock



#### **Material and Finish:**

**Housing**—94V-0 rated thermoplastic,

**Evelets**—Brass, tin plated

Threaded Inserts—Zinc

Female Screwlock—Zinc

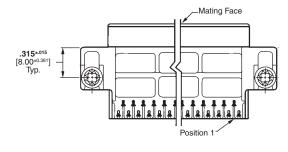
Boardlock—Copper alloy, tin plated

# Socket Contacts (Posted)-

Phosphor bronze, duplex plated as follows:

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

**B**—Gold flash on mating end, tin on termination end, with entire contact nickel underplated



# **Technical Documents:**

Product Specification—108-1226 Application Specification— 114-40027

See customer drawings for printed circuit board layouts.

	No. of Dimensions Contact Shell Contact			Contact	Part N	umbers
				With	With Fixed	
Size	Positions	Α	В	(Plating Code)	Threaded Inserts	Female Screwlocks
1	9	<b>1.213</b> 30.81	<b>.984</b> 24.99	В	5748907-2	_
3	25	<b>2.088</b> 53.04	<b>1.852</b> 47.04	А	5748909-1	5748989-1

Notes: 1. All receptacle connectors are preloaded with size 20 DF posted socket contacts.

2. Recommended pc board thickness is .062 [1.58].

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

Note: All part numbers are RoHS compliant.

.590 [14.99] Board Mount Footprint



# HD-20 All-Plastic Right-Angle Posted Connectors 590 Mount (Continued)

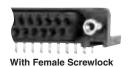
# Post Size—.026 [0.66] Dia.

# Receptacle—Without Boardlocks





With Threaded Insert



#### **Material and Finish:**

**Housing**—94V-0 rated thermoplastic, black

**Threaded Inserts**—Zinc, chromate coated

Female Screwlocks—Zinc, chromate

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

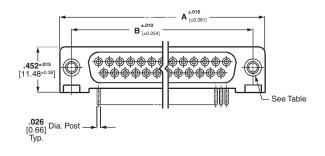
**A**—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact nickel underplated

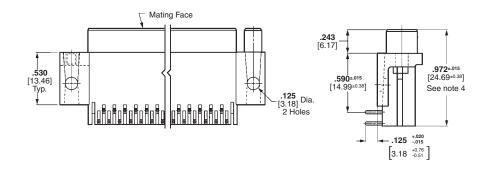
**B**—Gold flash on mating end, tin on termination end, with entire contact nickel underplated

#### **Technical Documents:**

**Product Specification**—108-40025 **Application Specification**— 114-40015

See customer drawings for printed circuit board layouts.





				Contact		Part Numbers	
Shell Size	No. of Contact Positions	A Dimer	B B	Finish (Plating Code)	With Threaded Inserts	With Fixed Female Screwlocks	With .125 [3.18] Mounting Holes
		1.213	.984	Α	5747459-4	5747459-6	5747459-2
1	9	30.81	24.99	В	5747459-3	5747459-5	5747459-1
2	15	1.541	<b>1.312</b> 33.32	Α	5747460-4	5748948-1	5747460-2
2	15	39.14		В	5747460-3	5747460-5	5747460-1
	0.5	2.088	1.852	Α	5747461-4	5747461-6	5747461-2
3	25	53.04	47.04	В	5747461-3	5747461-5	5747461-1
4	37	<b>2.729</b> 69.32	<b>2.500</b> 63.50	А	5747462-4	5747462-6	5747462-2
	50	2.635	2.406	Α	_	_	5206973-1
5	50	66.93	61.11	В	_	_	5206973-2

- Notes: 1. All receptacle connectors are preloaded with size 20 DF posted socket contacts.
  - 2. Recommended pc board thickness is .093 [2.36] max.
  - 3. Male screw retainers are used as mating hardware for connectors with 4-40 female screwlocks.
  - 4. Dimension is 1.120 [28.45] for size 5 d-subs.

# HD-20 All-Plastic Right-Angle Posted Connectors 590 Mount (Continued)

# Post Size—.026 [0.66] Dia.

# Plug—Without Boardlocks







With Female Screwlocks

# **Material and Finish:**

**Housing**—94V-0 rated thermoplastic,

Threaded Inserts—Zinc, chromate coated

Female Screwlocks—Zinc, chromate coated

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

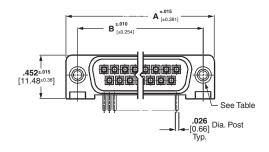
**A**—.000030 [0.00076] gold on mating end, tin on termination end, with entire contact nickel underplated

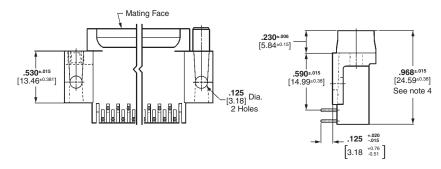
**B**—Gold flash on mating end, tin on termination end, with entire contact nickel underplated

#### **Technical Documents:**

Product Specification—108-40025 Application Specification-114-40015

See customer drawings for printed circuit board layouts.





C					Part Numbers			
No. of Contact Positions	Dimer	B B	Finish (Plating Code)	With Threaded Inserts	With Fixed Female Screwlocks	With .125 [3.18] Mounting Holes		
0	1.213	.984	Α	5747467-4	_	5747467-2		
9	30.81	24.99	В	_	_	5747467-1		
15	<b>1.541</b> 39.14	<b>1.312</b> 33.32	Α	5748872-1	5748952-1	5747468-2		
O.F.	2.090	1.852	Α	5748873-1	5748953-1	5748826-1		
25	53.09	47.04	В	_	_	5748826-2		
37	<b>2.729</b> 69.32	<b>2.500</b> 63.50	Α	_	_	5747470-2		
FO	2.635	2.406	Α	_	_	5206971-1		
50	66.93	61.11	В	_	_	5206971-2		
	Contact Positions  9  15  25	Contact Positions         Differ           9         1.213 30.81           15         1.541 39.14           25         53.09 53.09           37         2.729 69.32           50         2.635	Contact Positions         A         B           9         1.213	Contact Positions         A         B         Finish (Plating Code)           9         1.213         .984         A           30.81         24.99         B           15         1.541         1.312         A           39.14         33.32         A           25         2.090         1.852         A           53.09         47.04         B           37         2.729         2.500         A           69.32         63.50         A           50         2.635         2.406         A	No. of Contact Positions         Dimensions         Finish (Plating Code)         With Threaded Inserts           9         1.213         .984         A         5747467-4           9         1.541         1.312         B         —           15         1.541         1.312         A         5748872-1           25         2.090         1.852         A         5748873-1           37         2.729         2.500         A         —           30         2.635         2.406         A         —	No. of Contact Positions   A		

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

- 2. Recommended pc board thickness is .093 [2.36] max.
- 3. Male screw retainers are used as mating hardware for connectors with 4-40 female screwlocks.
- 4. Dimension is 1.115 [28.32] for size 5 d-subs, GPL244.



# Right-Angle Mounting Connectors — European Standard Footprint



See customer drawings for latest dimensional details

#### **Material and Finish:**

Front Shell—Steel, tin plated Housing—Black glass-filled polyester Flammability—UL 94V-0 Contact Material—

Pin—Phosphor bronze

Socket—Phosphor bronze
Contact Area Plating—0.76µm Gold

Current Rating—6A max. Insulation Resistance—  $5000 \text{ M}\Omega$  min.

**Dielectric Strength**—1000V AC min. **Temperature Rating**— -55°C to +105°C

# Plug with Boardlocks — Solder Termination

No of Contact Positions	3mm Hole	4-40 Inserts	4-40 Screwlocks	M3 Inserts	M3 Screwlocks
9	338168-2	1-338168-2	3-338168-2	2-338168-2	4-338168-2
15	338169-2	1-338169-2	3-338169-2	2-338169-2	4-338169-2
25	338170-2	1-338170-2	3-338170-2	2-338170-2	4-338170-2
37	338171-2	1-338171-2	3-338171-2	2-338171-2	4-338171-2

#### Socket with Boardlocks — Solder Termination

No of Contact Positions	3mm Hole	4-40 Inserts	4-40 Screwlocks	M3 Inserts	M3 Screwlocks
9	106505-2	1-106505-2	3-106505-2	2-106505-2	4-106505-2
15	106506-2	1-106506-2	3-106506-2	2-106506-2	4-106506-2
25	106507-2	1-106507-2	3-106507-2	2-106507-2	4-106507-2
37	106508-2	1-106508-2	3-106508-2	2-106508-2	4-106508-2

# Plug without Boardlocks — Solder Termination

No of Contact Positions	3mm Hole	4-40 Inserts	4-40 Screwlocks	M3 Inserts	M3 Screwlocks
9	5-338168-2	6-338168-2	8-338168-2	7-338168-2	9-338168-2
15	5-338169-2	6-338169-2	8-338169-2	7-338169-2	9-338169-2
25	5-338170-2	6-338170-2	8-338170-2	7-338170-2	9-338170-2
37	5-338171-2	6-338171-2	8-338171-2	7-338171-2	9-338171-2

# Socket without Boardlocks — Solder Termination

No of Contact Positions	3mm Hole	4-40 Inserts	4-40 Screwlocks	M3 Inserts	M3 Screwlocks
9	5-106505-2	6-106505-2	8-106505-2	7-106505-2	9-106505-2
15	5-106506-2	6-106506-2	8-106506-2	7-106506-2	9-106506-2
25	5-106507-2	6-106507-2	8-106507-2	7-106507-2	9-106507-2
37	5-106508-2	6-106508-2	8-106508-2	7-106508-2	9-106508-2

# Right-Angle Mounting Connectors — Eurostyle Footprint



See customer drawings for latest dimensional details

#### **Material and Finish:**

Front Shell—Steel, tin plated
Housing—Grey thermoplastic PBTP
Flammability—UL 94V-0
Contact Material—

Contact Material— Pin—Copper alloy Socket—Copper alloy

**Contact Area Plating**—Nickel/Gold (>250 mating cycles)

Current Rating—2.2A Insulation Resistance—  $5000~\text{M}\Omega$  min.

**Dielectric Strength**—1000V AC **Temperature Rating**— -55°C to +125°C

# Plug with Boardlocks — Solder Termination

No of Contact Positions	3mm Hole	4-40 Inserts	4-40 Screwlocks	M3 Inserts	M3 Screwlocks
9	5-1393480-9	8-1393480-5	1393481-5	7-1393480-4	9-1393480-4
15	6-1393480-0	8-1393480-6	3-1392010-3	7-1393480-5	9-1393480-5
25	On Enquiry	8-1393480-7	1393481-6	7-1393480-6	9-1393480-6
37	On Enquiry	8-1393480-8	3-1392010-4	7-1393480-7	On Enquiry

#### Socket with Boardlocks — Solder Termination

No of Contact Positions	3mm Hole	4-40 Inserts	4-40 Screwlocks	M3 Inserts	M3 Screwlocks
9	5-1393480-5	8-1393480-1	9-1393480-9	6-1393480-7	9-1393480-0
15	5-1393480-6	8-1393480-2	1393481-1	6-1393480-8	9-1393480-1
25	5-1393480-7	8-1393480-3	1393481-2	6-1393480-9	9-1393480-2
37	On Enquiry	8-1393480-4	3-1392010-7	7-1393480-0	On Enquiry

# Plug without Boardlocks — Solder Termination

No of Contact Positions	3mm Hole	4-40 Inserts	4-40 Screwlocks	M3 Inserts	M3 Screwlocks
9	2-1393480-1	4-1393480-0	5-1393480-2	3-1393480-2	On Enquiry
15	2-1393480-2	4-1393480-1	5-1393480-3	3-1393480-3	On Enquiry
25	2-1393480-3	4-1393480-2	5-1393480-4	2-1392010-8	On Enquiry
37	2-1393480-4	4-1393480-3	3-1392010-5	3-1392010-6	On Enquiry

# Socket without Boardlocks — Solder Termination

No of Contact Positions	3mm Hole	4-40 Inserts	4-40 Screwlocks	M3 Inserts	M3 Screwlocks
9	1-1393480-7	3-1393480-6	4-1393480-7	2-1393480-8	On Enquiry
15	1-1393480-8	3-1393480-7	4-1393480-8	2-1393480-9	On Enquiry
25	1-1393480-9	3-1393480-8	4-1393480-9	3-1393480-0	On Enquiry
37	2-1393480-0	3-1393480-9	5-1393480-0	3-1392010-8	On Enquiry

Note: All part numbers are RoHS compliant.

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# Press Fit Termination, Right-Angle Mounting — European Standard Footprint



#### **Material and Finish:**

**Front Shell**—Steel, tin plated **Housing**—Black thermoplastic PBTP/PPS

Flammability—UL 94V-0

Contact Material-

Pin—Copper alloy

Socket—Copper alloy

**Contact Area Plating**—Nickel/Gold (>250 mating cycles)

Current Rating—2.2A

Insulation Resistance— $5000 \text{ M}\Omega \text{ min.}$ 

Dielectric Strength—1000V AC

Temperature Rating-

-55°C to +125°C

#### Plug with Boardlocks — Press Fit Termination

No of Ways	3mm Hole	4-40 Inserts	4-40 Screwlocks	M3 Inserts	M3 Screwlocks
9	_	3-1393481-2	3-1393481-8	2-1393481-5	On Enquiry
15	_	3-1393481-3	3-1393481-9	2-1393481-6	On Enquiry
25	_	3-1393481-4	2-1393497-7	2-1393481-7	On Enquiry
37	_	2-1392010-7	4-1393481-0	2-1393481-8	On Enquiry

#### Socket with Boardlocks — Press Fit Termination

No of Ways	3mm Hole	4-40 Inserts	4-40 Screwlocks	M3 Inserts	M3 Screwlocks
9	_	2-1393481-9	3-1393481-6	2-1393481-1	On Enquiry
15	_	3-1393481-0	2-1393497-4	2-1393481-2	On Enquiry
25	_	3-1393481-1	2-1393497-5	2-1393481-3	On Enquiry
37	_	2-1392010-6	2-1393497-6	2-1393481-4	On Enquiry

# Press Fit Termination, Right-Angle Mounting — Eurostyle Footprint



# **Material and Finish:**

**Front Shell**—Steel, tin plated **Housing**—Black thermoplastic PBTP/PPS

Flammability—UL 94V-0

Contact Material-

**Pin**—Copper alloy

Socket—Copper alloy

**Contact Area Plating**—Nickel/Gold (>250 mating cycles)

Current Rating—2.2A

Insulation Resistance-

5000  $\text{M}\Omega$  min.

Dielectric Strength—1000V AC

Temperature Rating-

−55°C to +125°C

# Plug with Boardlocks — Press Fit Termination

No of Ways	3mm Hole	4-40 Inserts	4-40 Screwlocks	M3 Inserts	M3 Screwlocks
9	_	On Enquiry	3-1393482-0	1-1393482-4	2-1393482-1
15	_	On Enquiry	3-1393482-2	3-1393497-0	4-1483489-2
25	_	On Enquiry	3-1393482-4	1-1393482-5	On Enquiry
37	_	On Enquiry	3-1393482-5	3-1393497-1	On Enquiry

#### Socket with Boardlocks — Press Fit Termination

No of Ways	3mm Hole	4-40 Inserts	4-40 Screwlocks	M3 Inserts	M3 Screwlocks
9	_	1-1393482-6	2-1393482-2	1-1393482-2	2-1393482-0
15	_	1-1393482-8	2-1393482-4	1-1393482-3	On Enquiry
25	_	3-1392010-9	2-1393482-6	9-1393487-2	On Enquiry
37	_	4-1392010-0	2-1393482-8	2-1393497-9	On Enquiry

Note: All part numbers are RoHS compliant.