

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	.454 [11.53]	Standard Screws	.120 [3.05]	Duplex (.000030 [0.00076] Gold/Tin)	.125 [3.18]		
		Grounding Indents, Tin Plated (Pgs. 71, 139, 155)	37 50	.545 [13.84]	Female Screwlocks	Dia. Holes	Duplex (Gold Flash/Tin)	.220 [5.59]		
	Plugs	Front Metal-Shell With Grounding Indents, Tin Plated (Pgs 55-58	Metal-Shell With Grounding Indents, Tin Plated	Metal-Shell With Grounding Indents,	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	.125 [3.18]
HD-20	and Receptacles	60-63, 65-67, 131, 134, 138, 143, 150)		[14.99]	Female Screwlocks		(Gold Flash/Tin)			
		All-Plastic	9 15	.318 [8.08]	.125 [3.18] Dia. Holes .120 [3.05] Dia. Holes	.125 [3.18] Dia. Holes	Duplex (.000030 [0.00076] Gold/Tin)	.125		
		(Pgs. 68-70, 132, 25 133, 135, 136) 37	25	.590 [14.99]	Threaded Inserts	.120 [3.05] Dia. Elliptical Holes	Duplex (Gold Flash/Tin)	[3.18]		
					Female Screwlocks	Boardlocks				

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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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Standard Density Press Fit Termination, Right-Angle Mounting	
Subminiature D Connectors for Cable Mounting	
Cabininatare 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
HD-20	Receptacle over Receptacle Plug over Plug Receptacle over Plug Plug over Receptacle	Front Metal-Shell, Tin Plated (Pgs. 144-149, 151)	9/9 15/15 25/25 37/37 (Std.)	See Customer Drawings	Threaded Inserts Female Screwlocks	. 120 [3.05] Dia. Holes Boardlocks	Duplex (.000030 [0.00076] Gold/Tin) (.000010 [0.00025] Gold/Tin) Duplex (Gold Flash/Tin)	. 125 [3.18]

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

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to change.

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HD-22 and HD-20 Connectors Performance Characteristics

Cable Connectors

		Connector Type	
	HDP-22	HDE-20	HDP-20
ectrical 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.
echanical 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. [0.4mm ² —53.4 N] 24 AWG—8 lb. [0.2mm ² —35.6 N] 26 AWG—4.5 lb. [0.15mm ² —20.02 N] 28 AWG—2.7 lb. [0.08mm ² —12.01 N]	20 AWG—9.5 lb. [0.6mm ² —42.3 N] 22 AWG—6 lb. [0.4mm ² —26.7 N] 24 AWG—4 lb. [0.2mm ² —17.79 N] 26 AWG—2.5 lb. [0.15mm ² —11.12 N] 28 AWG—2.5 lb. [0.08mm ² —11.12 N] 30 AWG—1 lb. [0.05mm ² —4.45 N]	20 AWG—20 lb. [0.6mm ² —89 N] 22 AWG—12 lb. [0.4mm ² —53.4 N] 24 AWG—8 lb. [0.2mm ² —35.6 N] 26 AWG—4.5 lb. [0.15mm ² —20.02 N] 28 AWG—2.7 lb. [0.08mm ² —12.01 N]
Durability	.000030 [0.00076] gold—500 cycles Gold Flash— 100 cycles	.000030 [0.00076] gold—500 cycles Gold Flash— 100 cycles	.000030 [0.00076] gold—500 cycles Gold Flash— 100 cycles
vironmental 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	
lectrical 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.	

**Stacked Connectors—500 VAC min.

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

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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.

С

.874

.806

20.47

1.202

30.53

1.134

28.80

1.743

44.27

1.674

42.52

2.391

60.73

2.326

59.08

2.297

58.34

2.218

56.34

22.20

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

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Mounting

Method Front/Rear

Panel

Front

Rear

Front

Rear

Front

Rear

Front

Rear

Front

Rear

Α

.984

.984

24.99

1.312

33.33

1.312

33.33

1.852

47.04

1.852

47.04

2.500

63.50

2.500

63.50

2.406

61.11

2.406

61.11

24.99

в

.492

.492

.656

16.66

.656

16.66

.926

.926

23.52

1.250

31.75

1.250

31.75

1.203

30.56

1.203

30.56

23.52

12.50

12.50

Shell

Size

(Pos.)

(9)

2

(15)

3

(25)

4 (37)

5 (50)

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Dimensions

Е

.513

.449

11.41

.513

13.03

.449

11.41

.513

13.03

.449

.513

13.03

.449

11.41

.623

.555

14.10

15.82

11.41

13.03

F

.257

6.53

.225

5.72

.257

6.53

.225

5.72

.257

6.53

.225

5.72

.257

6.53

.225

5.72

.312

7.93

.278

7.06

H*

.550

13.97

_

.730

18.54

1.275

32.39

_

1.920

46.05

1.753

44.52

J*

.750

19.05

.750

19.05

.750

19.05

_

.750

16.13

.750

19.05

Κ

.083

2.11

.132

3.35

.083

2.11

.132

3.35

.083

2.11

.132

3.35

.083

2.11

.132

3.35

.083

2.11

.132

3.35

D

.437

11.10

.403 10.24

.601

15.27

.567

14.40

.872

22.15

.837

21.26

1.196

30.38

1.163

29.54

1.149

29.19

1.109

28.17

*Panel cutout configuration with H and J dimensions provides clearance for mounting connectors with cable clamps. **This dimension is .190^{±002} [4.83^{±0.05}] when posted connectors with fixed female screwlocks are rear-panel mounted.

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Right-Angle Posted Connectors



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

See customer drawings for pcb layouts.

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 $30\mu^{"}$, $10\mu^{"}$ 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 TE for additional information.

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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
		1.22 30.95	.984 24.99	.750 19.05	А	4-40 inserts	1734279-1
		1.22 30.95	.984 24.99	.750 19.05	В	4-40 inserts	1734279-2
9p Plug	/ 9p Plug	1.22 30.95	.984 24.99	.750 19.05	С	4-40 inserts	1734279-3
op i lug	op i lug	1.22 30.95	.984 24.99	.750 19.05	А	4-40 fem s/l	1734280-
		1.22 30.95	.984 24.99	.750 19.05	С	4-40 fem s/l	1734280-3
		1.22 30.95	.984 24.99	. 750 19.05	А	4-40 inserts	1734282-
9p Plug	/ 9p Rcpt.	1.22 30.95	.984 24.99	.750 19.05	В	4-40 inserts	1734282-2
		1.22 30.95	.984 24.99	.750 19.05	С	4-40 inserts	1734282-3
		1.22 30.95	.984 24.99	.750 19.05	А	4-40 inserts	1734285-
		1.22 30.95	.984 24.99	.750 19.05	В	4-40 inserts	1734285-2
On Pont	/ On Ront	1.22 30.95	.984 24.99	.750 19.05	С	4-40 inserts	1734285-3
9p Rcpt.	/ 9p Rcpt.	1.22 30.95	.984 24.99	.750 19.05	А	4-40 fem s/l	1734286-
		1.22 30.95	.984 24.99	.750 19.05	В	4-40 fem s/l	1734286-2
		1.22 30.95	.984 24.99	.750 19.05	С	4-40 fem s/l	1734286-3
		1.22 30.95	.984 24.99	.750 19.05	А	4-40 inserts	1734207-
9p Rcpt.	/ 9p Plug	1.22 30.95	.984 24.99	.750 19.05	В	4-40 inserts	1734207-2
		1.22 30.95	.984 24.99	.750 19.05	С	4-40 inserts	1734207-3
		1.55 39.30	1.31 33.30	.750 19.05	А	4-40 inserts	1-1734279
15p Plug /	/ 15p Plug	1.55 39.30	1.31 33.30	.750 19.05	В	4-40 inserts	1-1734279
		1.55 39.30	1.31 33.30	.750 19.05	С	4-40 inserts	1-1734279
		1.55 39.30	1.31 33.30	.750 19.05	Α	4-40 inserts	1-1734282
15p Plug	/ 15p Rcpt.	1.55 39.30	1.31 33.30	.750 19.05	В	4-40 inserts	1-1734282
		1.55 39.30	1.31 33.30	.750 19.05	С	4-40 inserts	1-1734282

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Note: All part numbers are RoHS compliant.

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

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

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HD-20 Subminiature D Stacked PCB Connectors

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

Upper	Lower		Dimension	6	Contact	Mounting	Part
D-Sub	D-Sub	D	Е	F	Finish	Hardware	Number
		2.73 69.34	2.500 63.50	.750 19.05	А	4-40 inserts	3-1734285-1
		2.73 69.34	2.500 63.50	.750 19.05	В	4-40 inserts	3-1734285-2
07n Dont	/ 07n Dent	2.73 69.34	2.500 63.50	.750 19.05	С	4-40 inserts	3-1734285-3
37p Rcpt.	/ 37p Rcpt.	2.73 69.34	2.500 63.50	.750 19.05	А	4-40 fem s/l	3-1734286-1
		2.73 69.34	2.500 63.50	.750 19.05	В	4-40 fem s/l	3-1734286-2
		2.73 69.34	2.500 63.50	.750 19.05	С	4-40 fem s/l	3-1734286-3
		2.73 69.34	2.500 63.50	.750 19.05	А	4-40 inserts	3-1734207-1
37p Rcpt.	/ 37p Plug	2.73 69.34	2.500 63.50	.750 19.05	В	4-40 inserts	3-1734207-2
		2.73 69.34	2.500 63.50	.750 19.05	С	4-40 inserts	3-1734207-3

Note: All part numbers are RoHS compliant.

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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 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)

Note: All part numbers are RoHS compliant.

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

HD-20 Front Metal Shell, Right-Angle Connectors

Material and Finish:

HD-20 Subminiature D Stacked PCB Connectors

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	PC 99
With female screwlocks & color-coded audio1	1734287-2	—
With color-coded audio ¹	1-1734287-2	—
With color-coded audio ¹		1-1734287-3
With female screwlocks & back cover & color-coded audio1	_	2-1734287-3
With female screwlocks & color-coded audio1		3-1734287-3

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
.236 6.00	А	—	2-1734024-3

Note: All part numbers are RoHS compliant.

Catalog 82068

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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.

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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 or 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.	With Female Screwlocks	With 4-40 Threaded Inserts
9	А	1.210	1734351-1	1734352-1
9	В	30.80	1734351-2	1734352-2
15	А	1.540	—	1734360-1
15	В	39.20	_	1734360-2
25	A 2.090		Pending Obs.	Pending Obs.
25	В	53.10	Pending Obs.	Pending Obs.



Typical Receptacle

	Shell Size	Contact Finish	Dimension L Ref.	With Female Screwlocks	With 4-40 Threaded Inserts
	9	А	1.210	1734354-1	1734348-1
	9	В	30.80	1734354-2	1734348-2
	15	А	1.540 39.20	1734357-1	1734355-1
	15	В		1734357-2	1734355-2
25	25	А	2.090	1734349-1	1734350-1
	20	В	53.10	1734349-2	1734350-2

Note: All part numbers are RoHS compliant.

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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

Note: All part numbers are RoHS compliant.

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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

Catalog 82068

Revised 4-12

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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, .000010 [0.00025] 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	Dimensions			Mounting	PCB		Part Numbers			
Contact Positions	A B		C	Hardware	Mounting Style	Gold Flash	15µ" Gold	30µ" Gold		
45	1.212 30.81	.984 24.99	.582 14.80	4-40 inserts	board locks	_	5749767-2	5749767- ⁻		
15	1.212 30.81	.984 24.99	.582 14.80	4-40 screw locks	board locks	5749768-3	5749768-2	5749768-		
26	1.543 39.20	1.312 33.32	.583 14.81	4-40 inserts	board locks	5749769-3	5749769-2	5749769-		
44	2.089 53.05	1.852 47.04	.593 15.06	4-40 inserts	board locks	5749771-3	5749771-2	5749771-		
62	2.732 69.40	2.500 63.50	.593 15.06	4-40 inserts	board locks	5749639-3	5749639-2	5749639-		
78	2.638 67.00	2.400 61.00	.693 17.60	4-40 screw locks	board locks	5749234-3	5749234-2	_		





Right-Angle Receptacle

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

Note: All part numbers are RoHS compliant.

Right-Angle Subminiature D Connectors

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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:

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

Eyelets-Brass, tin plated

Threaded Inserts—Zinc

Boardlocks—Copper alloy, tin plated Pin Contacts (Posted)—Brass,

duplex plated as follows: end, tin on termination end, with entire contact nickel underplated **B**—Gold flash on mating end, tin on termination end, with entire contact





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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 **H** Laboratories, Inc., File No. E28476
- Certified by **Canadian Standards**
 - Association, File No. LR 7189

.	No. of		Dimensions				Wi	Without Boardlocks			With Boardlocks		
Shell Size	Contact Positions	A	B	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	А	5747250-2	5747250-4	5747250-6	5747840-2	5747840-4	5747840-6	
I	9	30.81	24.99	5.97	18.62	В	_	5747250-3	_	_	5747840-3	5747840-5	
0	45	1.541	1.312	.235	.733	А	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	_	
0	25	2.088	1.852	.230	.738	А	5747238-2	5747238-4	5747238-6	5747842-2	5747842-4	5747842-6	
3	20	53.04	47.04	5.84	18.75	В	5747238-2	5747238-3	_	_	5747842-3	5747842-5	
4	07	2.729	2.500	.230	.740	А	_	5747252-4	_	5747843-2	5747843-4	5747843-6	
4	37	69.32	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.

Note: All part numbers are RoHS compliant.

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

Receptacle 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 plated

Socket Contacts (Posted)-

Phosphor bronze, duplex plated as follows:

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	No of the state of		Contact	N	ithout Boardlo	ocks	1	With Boardlocks			
Shell	Contact	Dimer	nsions	Finish	With	14/:+1-	With Fixed	With	With	With Fixed		
Size Positions	ositions A B		(Plating Code)	Standard Mounting Holes	With Threaded Inserts	Female Screwlocks	Standard Mounting Holes	Threaded Inserts	Female Screwlocks			
4	9	1.213	.984	А	5745781-2	5745781-4	5745781-6	5747844-2	5747844-4	5747844-6		
I	9	30.81	24.99	В	_	5745781-3	_	_	5747844-3	5747844-5		
0	45	1.541	1.312	А	5745782-2	5745782-4	5745782-6	_	5747845-4	5747845-6		
2	15	39.14	33.33	В	_	_	_	_	5747845-3	5747845-5		
0	05	2.088	1.852	А	5745783-2	5745783-4	5745783-6	5747846-2	5747846-4	5747846-6		
3	25	53.04	47.04	В	_	5745783-3	5745783-5	_	5747846-3	5747846-5		
4	37	2.729 69.32	2.500 63.50	А	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							t Numbers bardlocks
Size	Contact Positions	Α	В	D	E	Finish (Plating Code)	With Threaded Inserts	With Fixed Female Screwlocks
1	9	1.213	.984	.235	.733	А	5788792-1	5788793-1
1	9	30.81	24.99	24.99 5.97	18.62	В	5788792-2	5788793-2
3	25	2.088	1.852	.230	.738	A	5788794-1	5788795-1
3	20	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.

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.

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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. 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 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					
Sholl	No. of	Dimensions		Contact Finish	Without Boardlocks	With Boardlocks				
Size Positions		A	B	(Plating Code)	With Fixed Female Screwlocks	With Threaded Inserts	With Fixed Female Screwlocks			
4	9	1.213	.984	А	5788803-1	5788796-1	5788797-1			
1	9	30.81	24.99	В	_	5788796-2	5788797-2			
0	45	1.541	1.312	А	_	5788798-1	5788799-1			
2	15	39.14	33.33	В	_	5788798-1	_			
0	05	2.088	1.852	А	_	5788800-1	5788801-1			
3	25	53.04	47.04	В	_	5788800-2	5788801-2			
4	37	2.729 69.32	2.500 63.50	А	_	5788802-1	_			

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 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.







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

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.

Note: All part numbers are RoHS compliant.

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

Post Size—.025 [0.64] Sq. Plug



Without Grounding Indents



Material and Finish: Shell—Steel, tin plated

Contacts (Posted):

Contact Plating:

nickel underplated

114-40013

Technical Documents: Product Specification—108-40025 Application Specification—

Socket—Phosphor bronze

black

Pin—Brass

Insert-94V-0 rated thermoplastic,

 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



Mating Face

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.269^{±.010} [6.83^{±0.25}]

.510^{±.010} [12.95^{±0.25}]



Shell Size	No. of		ſ	Dimension	s		Contact Finish	Part Numbers With
Shell Size	Contact Positions	Α	В	С	D	E	(Plating Code)	Grounding Indents
						.125	А	5745434-8
	9	1.213	.984	.235	.915	3.18	В	_
I	9	30.81	24.99	5.97	23.24	.220 5.59	В	—
0	45	1.541	1.312	.235	.915	.125 3.18	А	5745435-8
2	15	39.14	33.33	5.97	23.24	.220 5.59	А	_
0	05	2.088	1.852	.230	.919	.125 3.18	А	_
3	25	53.04	47.04	5.84	23.34	.220 5.59	В	5745436-3
4	37	2.729	2.500	.230	.919	.125 3.18	А	5745437-8
4	37	69.32	63.50	5.84	23.34	.220 5.59	В	5745437-3

Grounding Indents

.120 Dia. [3.05] Typ.

.120 Dia. [3.05] Typ.

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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.

Note: All part numbers are RoHS compliant.

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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 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 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

See customer drawings for printed circuit board layouts.







						Plug Par	t Number
Shell Size	No. of	Dimensions			Contact Finish	With Bo	ardlocks
	Contact Positions	Α	В	D	(Plating Code)	With Threaded Inserts	With Fixed Female Screwlocks
1	9	1.213 30.81	.984 24.99	.235 5.97	А	5747848-4	_
3	25	2.088 53.04	1.852 47.04	.230 5.84	А	—	5747850-6

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 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 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







		Dimensions			Receptacle Pa	rt Numbers
Shell	No. of			Contact Finish	Without Boardlocks	With Boardlocks
Size	Contact Positions	A	/Disting	(Plating	With Threaded Inserts	With Threaded Inserts
1	9	1.213 30.81	.984 24.99	А	5747418-4	5747852-4

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

Note: All part numbers are RoHS compliant.

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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 Pos.					Contact Finish (Plating	Without Grounding Indents	With Grounding Indents			
	F03.	Α	В	С	D	Е	Code) With Standard Mounting Screws*	With Standard Mounting Screws	With Female Screwlocks		
1	9	1.213 30.81	.984 24.99	.494 12.55	.235 5.99	1.025 26.04	А	5745351-2	5745351-4	5747197-4	
2	15	1.541	1.312	.494	.235	1.025	А	_	5745352-4	_	
2	15	39.14	33.33	12.55	5.99	26.04	В	5745352-1	—	—	
3	25		1.852 47.04	.494 12.55	.230 5.84	1.029 26.14	А	_	_	5747022-2	
4	37		2.500 63.50	.494 12.55	.230 5.84	1.029 26.14	А	_	5745354-4	_	
5	50	2.635 66.93	2.406 61.11	.605 15.37	.230 5.84	1.149 29.19	А	_	5745355-4	5747497-4	

*These plugs can be made available with female screwlocks, consult TE.

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.

Note: All part numbers are RoHS compliant.

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545 [13.84] Board Mount Footprint

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Dimensions are shown for

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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, black

Female Screwlock—Steel, zinc 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-114-40013







Positions A B C E Code) Mounting Screws S	With Female Screwlocks
1 213 084 404 1 033 A 5745112-2	JUICWIUCKS
1 9 1.213 .304 .434 1.033 // 0/40122	5747020-2
30.81 24.99 12.55 26.24 В —	5747020-1
2 15 1.541 1.312 .494 1.033 A 5745113-2	5747021-2
3 25 2.088 1.852 .494 1.033 A 5745114-2	5745536-2
4 37 2.729 2.500 .494 1.033 A 5745115-2	_
5 50 2.635 2.406 .605 1.153 A 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.

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

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Note: All part numbers are RoHS compliant.

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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, 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—.00030 [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		
Shell	No. of		Dimens	sions		Contact Finish	Without Boardlocks	With Bo	oardlocks
Size	Contact Positions	A	В	D	E	(Plating Code)	With Threaded Inserts	With Threaded Inserts	With Fixed Female Screwlocks
	9	1.213	.984	.235	.965	А	5745990-4	5747832-4	5747832-6
I	9	30.81	24.99	5.97	24.51	В	5745990-3	5747832-3	_
2	15	1.541 39.14	1.312 33.33	.235 5.97	.965 24.51	А	—	5747833-4	5747833-6
3	25	2.088 53.04	1.852 47.04	.230 5.84	.970 24.64	А	5745994-4	5747834-4	5747834-6
4	37	2.729 69.32	2.500 63.50	.230 5.84	.972 24.69	А	_	5747835-4	5747835-6

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 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

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

Post Size-.026 [0.66] Dia. Receptacle



With 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 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	No. of	Dimer	nsions	Contact Finish	Without I	Boardlocks	With Boardlocks		
Size	Contact Positions	Α	В	(Plating Code)	With Threaded Inserts	With Fixed Female Screwlocks	With Threaded Inserts	With Fixed Female Screwlocks	
1	9	1.213 30.81	.984 24.99	А	5745988-4	5745988-6	5747836-4	5747836-6	
2	15	1.541 39.14	1.312 33.33	А	5745984-4	_	5747837-4	—	
	05	2.088	1.852	А	_	5745992-6	5747838-4	5747838-6	
3	25	53.04	47.04	В	5745992-3	_	5747838-3	—	
4	37	2.729 69.32	2.500 63.50	А	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 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 All-Plastic Right-Angle Posted Connectors 318 Mount

Receptacle—With Boardlocks



With Threaded Insert





With Fixed Female Screwlock

Material and Finish:

Housing-94V-0 rated thermoplastic, black

Eyelets-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

Technical Documents:

circuit board layouts.

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

See customer drawings for printed

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

Consult TE 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.

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Note: All part numbers are RoHS compliant.

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٥ .500±.015 2.70±0.38] Typ. [12







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	Dimer	isions	Contact Finish		lumbers aded Inserts
Size	Contact Positions	Α	В	(Plating Code)	With Boardlocks	Without Boardlocks
2	15	1.550 39.37	1.312 33.32	А	5748904-1	_
3	25	2.090 53.09	1.852 47.04	В	_	5748865-3

Consult TE 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.

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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 coated

Socket Contacts (Posted)— Phosphor bronze, duplex plated as fol-

lows: A—.000030 [0.00076] gold on mating

 A—booose to boor of got on maining 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	Dimer A	B	Finish (Plating Code)	With Threaded Inserts	With Fixed Female Screwlocks	With .125 [3.18] Mounting Holes	
1	9	1.213	.984	А	5745394-2	5745395-2	_	
1	9	30.81	24.99	В	—	—	5745131-1	
2	15	1.541	1.312	А	_	5745396-2	5745396-2	
2	15	39.14	33.32	В	_	_	_	
0	05	2.088	1.852	А	5745392-2	5745397-2	5745132-2	
3	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.

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Note: All part numbers are RoHS compliant.

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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, black

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			Contact	Part Numbers		
Shell Size	Contact Positions	Dimer A	B	Finish (Plating Code)	With Threaded Inserts	With Fixed Female Screwlocks	
1	9	1.213 30.81	.984 24.99	В	5748907-2	_	
3	25	2.088 53.04	1.852 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.

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Note: All part numbers are RoHS compliant.

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

Post Size—.026 [0.66] Dia. Receptacle—Without Boardlocks





With Threaded Insert



With Female Screwlock

Material and Finish:

Housing—94V-0 rated thermoplastic, black

Threaded Inserts—Zinc, chromate coated

Female Screwlocks—Zinc, chromate coated

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	Dimer A	B	Finish (Plating Code)	With Threaded Inserts	With Fixed Female Screwlocks	With .125 [3.18] Mounting Holes		
		1.213	.984	А	5747459-4	5747459-6	5747459-2		
1	9	30.81	24.99	В	5747459-3	5747459-5	5747459-1		
2	15	1.541	1.312	А	5747460-4	5748948-1	5747460-2		
2	15	39.14	33.32	В	5747460-3	5747460-5	5747460-1		
-	05	2.088	1.852	А	5747461-4	5747461-6	5747461-2		
3	25	53.04	47.04	В	5747461-3	5747461-5	5747461-1		
4	37	2.729 69.32	2.500 63.50	А	5747462-4	5747462-6	5747462-2		
5	50	2.635	2.406	А	_	—	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.

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Note: All part numbers are RoHS compliant.

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

Plug—Without Boardlocks Post Size-.026 [0.66] Dia.









With Female Screwlocks

Material and Finish:

Housing-94V-0 rated thermoplastic, black

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.







				Contact	Part Numbers			
Shell	No. of Contact	Dimensions		Finish	With	With Fixed	With	
Size	Positions	Α	В	(Plating Code)	Threaded Inserts	Female Screwlocks	With .125 [3.18] Mounting Holes 5747467-2 5747467-1 5747468-2 5747468-2 5748826-1 5748826-2 5747470-2 5206971-1 5206971-2	
	0	1.213	.984	А	5747467-4	_	5747467-2	
I	9	30.81 2	24.99	В	—	_	5747467-1	
2	15	1.541 39.14	1.312 33.32	А	5748872-1	5748952-1	5747468-2	
0	05	2.090	1.852	А	5748873-1	5748953-1	5748826-1	
3	25	53.09	47.04	В	_	_	5748826-2	
4	37	2.729 69.32	2.500 63.50	А	_	_	5747470-2	
-		2.635	2.635	2.406	А	_	_	5206971-1
5	50	66.93		В	_	_	5206971-2	

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.

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Note: All part numbers are RoHS compliant.

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Right-Angle Mounting Connectors — European Standard Footprint



Material and Finish:

 Front Shell—Steel, tin plated
 No c

 Housing—Black glass-filled polyester
 Flammability—UL 94V-0

 Contact Material—
 Pin—Phosphor bronze

 Socket—Phosphor bronze
 Socket—Phosphor bronze

 Contact Area Plating—0.76µm Gold
 Current Rating—6A max.

 Insulation Resistance—
 Socket

 5000 MΩ min.
 Dielectric Strength—1000V AC min.

 Temperature Rating—
 -55°C to +105°C

Plug with Boardlocks — Solder Termination

•					
No of Ways	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 Ways	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 Ways	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 Ways	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

Note: All part numbers are RoHS compliant.

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Right-Angle Mounting Connectors — Eurostyle Footprint



Material and Finish:

Front Shell-Steel, tin plated Housing—Grey thermoplastic PBTP 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 MΩ min.

Dielectric Strength—1000V AC Temperature Rating-

-55°C to +125°C

Plug with Boardlocks — Solder Termination

No of Ways	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 Ways	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 Ways	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 Ways	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

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Note: All part numbers are RoHS compliant.

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Standard Density 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 MΩ min.

 Dielectric Strength—1000V AC

Temperature Rating—

-55°C to +125°C

Plug with Boardlocks — Press Fit Termination

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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

Standard Density 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 M Ω 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.

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