



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



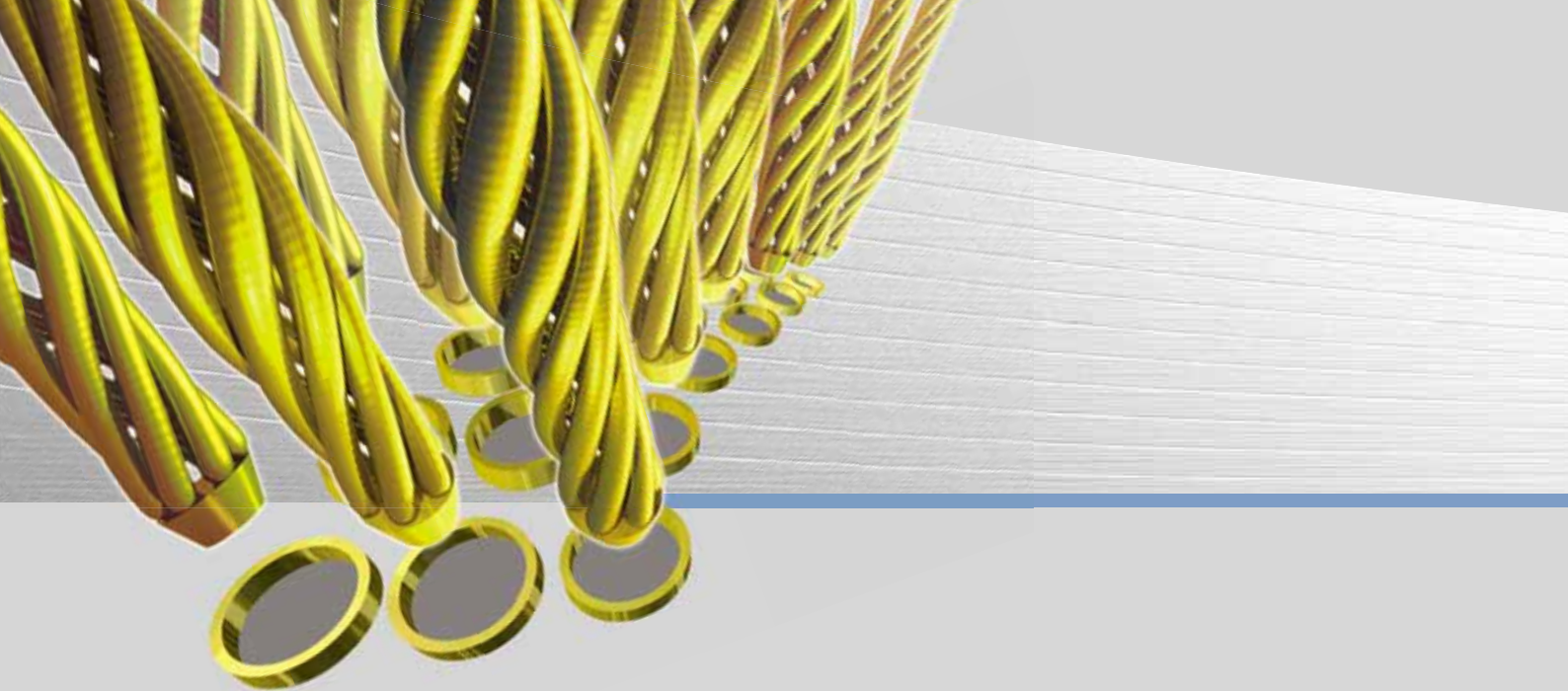


# Dura-Con™ Catalogue

SOLUTIONS THAT CONNECT

2012 EDITION





# Dura-Con™ Micro D Connectors

## **WEIGHT AND SPACE**

Dense centreline spacing and lightweight materials make Dura-Con the ideal connector where weight and space must be kept to a minimum while maintaining maximum reliability.

## **SHOCK AND VIBRATION**

The Cinch Dura-Con contact, due to its low mass, provides electrical continuity under extreme conditions of shock and vibration.

## **HIGH RELIABILITY TWIST PIN CONTACT**

The heart of the Dura-Con system is the twist pin contact. This contact is made from a precision miniature spring cable with a welded tip. The expanded cable creates a helix of seven spring members around the pin maintaining contact with the socket no matter what radial forces are applied. This spring cable can withstand many flex cycles without exhibiting any evidence of metal fatigue. Reliable mating is further ensured by protecting the pin contact in a tightly controlled recessed cavity.



## **APPLICATIONS**

Cinch Dura-Con connectors are MIL-DTL-83513 qualified and are used in missile systems, avionics, radar, minefield, space defence and many other military applications where reliability is crucial. This highly adaptable design has also seen many commercial applications including medical, telecommunications, computer, down-hole and transportation.

## **TERMINATION OPTIONS**

Insulated Wire – Available in 24 to 30 gauge wire at custom lengths specified by the customer.

Uninsulated Wire – Allows greater flexibility when installing the connector. Available in 24 to 28 gauge wire.

Solder Cups – Used in applications that require the lowest contact resistance and require termination by the customer

**CONTENTS**

**Custom Capabilities . . . . . 4**

**All-Plastic - DCDA . . . . . 5-8**

**Metal Shell - DCDM - DCCM . . . . . 9-12**

**Mounting Hardware . . . . . 13-14**

**Metal Shell Terminal Block . . . . . 15-19**

**MIL-C-83513 Metal Shell . . . . . 20-23**

**MIL-C-83513 Plastic Shell . . . . . 24-26**

**MIL-C-83513 Terminal Block . . . . . 27-30**

**MIL-C-83513 Mounting Hardware . . . . . 31**

**Connector Saver All Plastic & Metal Shell . . . . . 32**

**Microedge Connectors . . . . . 33-36**

**Strip Connectors . . . . . 37-38**

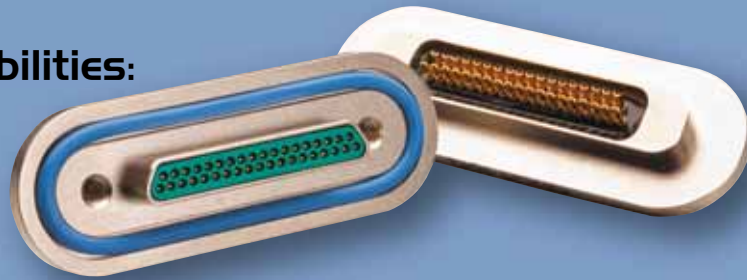
**Back Shells - MMBS . . . . . 39**

**JackMate Connectors . . . . . 40-42**





## Custom Capabilities:



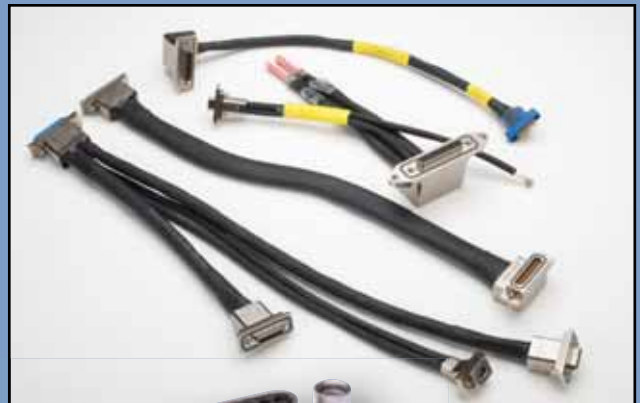
Standard Cinch Dura-Con connectors satisfy a wide variety of applications. Cinch's line of Dura-Con D-microminiature connectors is one of the most versatile in the industry.

Cinch approaches your business with a well-defined goal: to ensure the integrity of your design and to execute our contribution to it in a responsible, cost-effective manner.

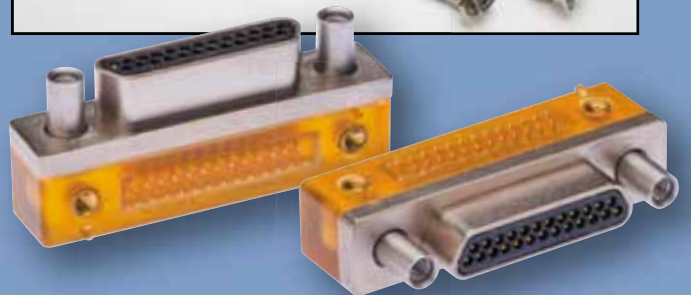


There are over 50,000 possible combinations of Cinch standard options such as connector type, size, materials, hardware, and termination. When special application requirements arise, Cinch Dura-Con connectors take this versatility to the next level.

This philosophy has led Cinch to a position of industry leadership. For complete information regarding the total capabilities of the Dura-Con connector series, or for custom application assistance, contact your nearest Cinch Connectors sales office.



Whether specific needs entail new variations of simple end-to-end connector assemblies or more complex and intricate harness assemblies, Cinch Connector Division has the state-of-the-art engineering resources and research facilities in place to meet your needs.



FEATURES

- Both plug and socket available in 9, 15, 21, 25, 31, 37, and 51 positions.
- Termination styles - solder cup, gold-plated solid wire, and insulated stranded wire.
- Several styles of mounting hardware are available for cable-to-cable, cable-to-board mount, and cable-to-panel mount applications.
- High-performance Dura-Con twist-pin contact.
- Economical all-plastic shell for lightweight applications where no shielding is required.
- Meets requirements of MIL-C-83513 except where noted.



MATERIALS

**Insulator:** UL94V-0 rated glass-filled polyester  
**Contacts:** Pins - Copper alloy, Sockets - Copper alloy (machined)  
**Contact Plating:** .000050 in gold

ENVIRONMENTAL

**Operating Temperature:** -55° C to +135° C

ELECTRICAL

**Current Rating:** 3 Amps maximum  
**Withstanding Voltage:** 600 VAC RMS @ sea level  
**Contact Resistance:** 8 milliohms maximum change

MECHANICAL

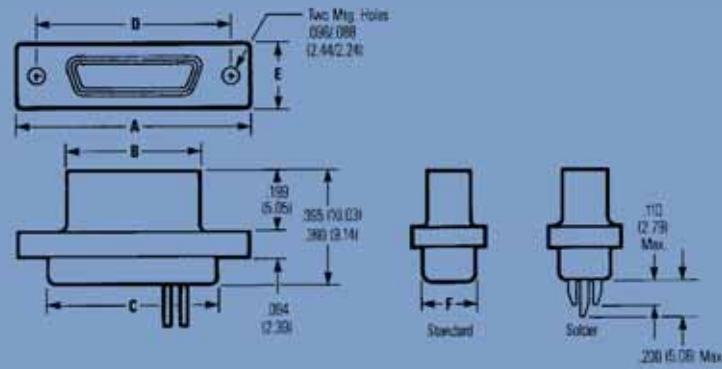
**Individual Contact:** 6 oz. (170.40 g) maximum insertion;  
 0.5 oz. (14.20 g) minimum withdrawal  
**Mating / Unmating Force:** See table

No. of Contacts	Maximum Mating Force		Minimum Unmating Force	
	Lb.	Kg	Lb.	Kg
9	5.63	2.56	.28	.13
15	9.38	4.26	.47	.21
21	13.13	5.96	.66	.30
25	15.63	7.10	.78	.35
31	19.38	8.80	.97	.44
37	23.13	10.50	1.16	.53
51	31.88	14.47	1.59	.72

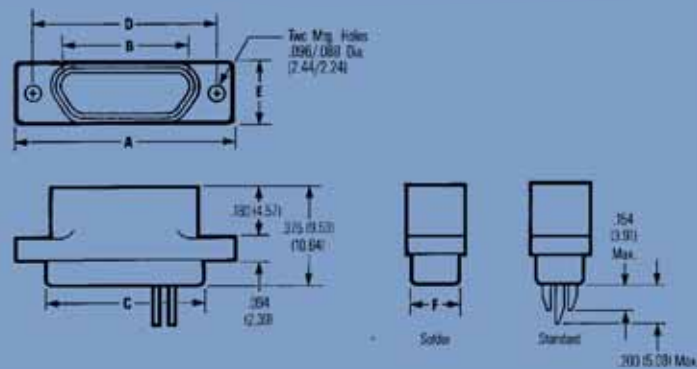


Connector Dimensions - Plastic Shell

Plug



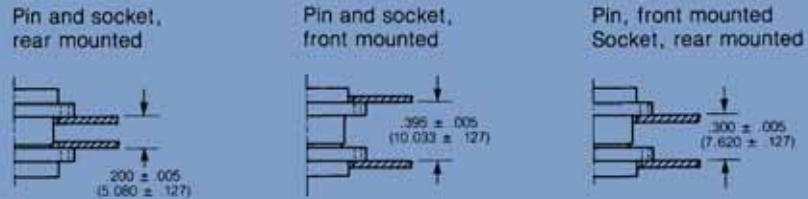
Socket



No. of Contacts	A		B Max.		C +.010 (.254) -.018 (.457)		D ±.005 (.127)		E ±.010 (.254)		F Max.	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
9 Plug	.778	19.76	.292	7.42	.398	10.11	.565	14.35	.208	5.28	.173	4.39
9 Socket	.778	19.76	.376	9.55	.398	10.11	.565	14.35	.208	5.28	.173	4.39
15 Plug	.928	23.57	.442	11.23	.548	13.92	.715	18.16	.208	5.28	.173	4.39
15 Socket	.928	23.57	.526	13.36	.548	13.92	.715	18.16	.208	5.28	.173	4.39
21 Plug	1.078	27.38	.592	15.04	.698	17.73	.865	21.97	.208	5.28	.173	4.39
21 Socket	1.078	27.38	.676	17.17	.698	17.73	.865	21.97	.208	5.28	.173	4.39
25 Plug	1.178	29.92	.692	17.58	.798	20.27	.965	24.51	.208	5.28	.173	4.39
25 Socket	1.178	29.92	.776	19.71	.798	20.27	.965	24.51	.208	5.28	.173	4.39
31 Plug	1.328	33.73	.842	21.39	.948	24.08	1.115	28.32	.208	5.28	.173	4.39
31 Socket	1.328	33.73	.926	23.52	.948	24.08	1.115	28.32	.208	5.28	.173	4.39
37 Plug	1.478	37.54	.992	25.20	1.098	27.89	1.265*	32.13	.208	5.28	.173	4.39
37 Socket	1.478	37.54	1.076	27.33	1.098	27.89	1.265*	32.13	.208	5.28	.173	4.39
51 Plug	1.428	36.27	.942	23.93	1.048	26.62	1.215	30.86	.250	6.35	.220	5.59
51 Socket	1.428	36.27	1.026	26.06	1.048	26.62	1.215	30.86	.250	6.35	.220	5.59



**Panel Mounting Dimensions**



**Panel Cutout Dimensions**

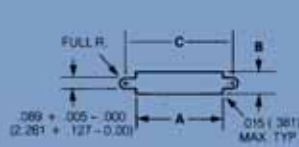


Figure 1. Front Mounting

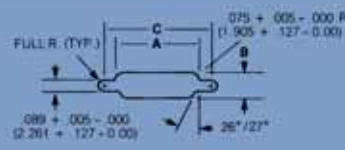


Figure 2. Rear Mounting

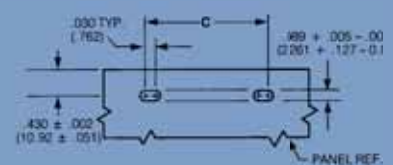
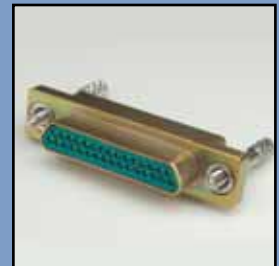
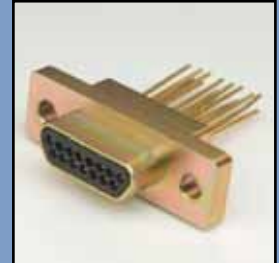


Figure 3. Edgeboard Mounting

No. of Contacts	Figure Number	A		B		C	
		+0.004 -0.000 in	(.101) (.000) mm	+0.004 -0.000 in	(.101) (.000) mm	+0.005 -0.000 in	(.127) (.000) mm
9	1	.408	10.36	.172	4.37	.570	14.48
	2	.373	9.47	.216	5.49	.570	14.48
	3	-	-	-	-	.570	14.48
15	1	.558	14.17	.172	4.37	.720	18.29
	2	.523	13.28	.216	5.49	.720	18.29
	3	-	-	-	-	.720	18.29
21	1	.708	17.98	.172	4.37	.870	22.10
	2	.674	17.12	.216	5.49	.870	22.10
	3	-	-	-	-	.870	22.10
25	1	.808	20.52	.172	4.37	.970	24.64
	2	.774	19.66	.216	5.49	.970	24.64
	3	-	-	-	-	.970	24.64
31	1	.958	24.33	.172	4.37	1.120	28.45
	2	.924	23.47	.216	5.49	1.120	28.45
	3	-	-	-	-	1.120	28.45
37	1	1.108	28.14	.172	4.37	1.270	32.26
	2	1.074	27.28	.216	5.49	1.270	32.26
	3	-	-	-	-	1.270	32.26
51	1	1.058	26.87	.215	5.46	1.220	30.99
	2	1.024	26.01	.259	6.58	1.220	30.99
	3	-	-	-	-	1.220	30.99

FEATURES

- Both plug and socket available in 9, 15, 21, 25, 31, 37, 51, and 100 positions.
- Several styles of mounting are available for cable-to-cable, cable-to-panel mount, and cable-to-board mount.
- Aluminum shell provides extra strength and EMI/RFI shielding capability. Plating options available.
- Silicone elastomer compression interfacial seal protects contacts from moisture and humidity and isolates contacts from each other and the metal shell.
- Meets requirements of MIL-C-83513 except where noted.
- Rugged twist-pin contacts resistant to shock and vibration make metal shell Dura-Con an excellent choice for harsh environments such as airborne or space applications.



MATERIALS

**Insulator:** UL94V-0 rated glass-filled polyester or diallyl phthalate  
**Contacts:** Pins - Copper alloy, Sockets - Copper alloy (machined)  
**Contact Plating:** .000050 in gold  
**Shell:** Aluminum alloy  
**Shell Plating:** Yellow chromate over cadmium (std.) or electroless nickel

ENVIRONMENTAL

**Operating Temperature:** -55°C to +135°C

ELECTRICAL

**Current Rating:** 3 Amps maximum  
**Withstanding Voltage:** 600 VAC RMS @ sea level  
**Contact Resistance:** 8 milliohms maximum

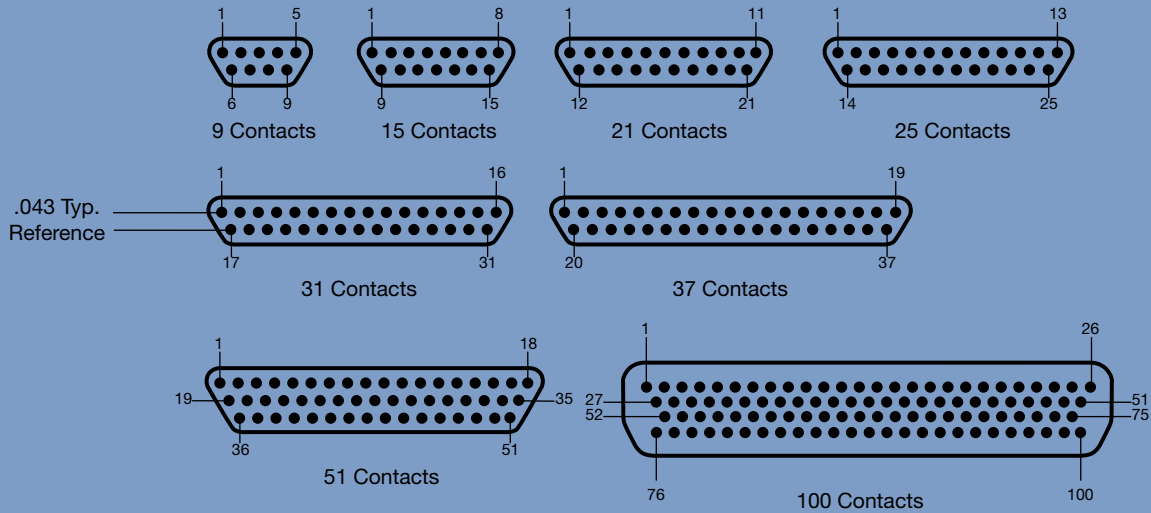
MECHANICAL

**Individual Contact:** 6 oz. (170.40 g) maximum insertion;  
 0.5 oz. (14.20 g) minimum withdrawal  
**Mating / Unmating Force:** See table

No. of Contacts	Maximum Mating Force		Minimum Unmating Force	
	Lb.	Kg	Lb.	Kg
9	5.63	2.56	.28	.13
15	9.38	4.26	.47	.21
21	13.13	5.96	.66	.30
25	15.63	7.10	.78	.35
31	19.38	8.80	.97	.44
37	23.13	10.50	1.16	.53
51	31.88	14.47	1.59	.72
100	62.50	28.38	3.13	1.42

### Contact Arrangements

(Face view of pin insert)  
 (Use reverse order for socket side)



### Ordering Information

**DC D M 37 P 6 E 2 18.0 K N**

**Cinch Dura-Con D Connector**

**Insulator Type**  
 C = Diallyl Phthalate  
 Glass Reinforced  
 D = Thermoplastic  
 Glass Reinforced

**Mounting Type**  
 M = Screw Mount Metal Shell

**No. of Contacts**  
 9, 15, 21, 25, 31, 37, 51, 100

**Contact Type**  
 P = Pin (Plug)  
 S = Socket (Receptacle)

**Wire Size in AWG**  
 4 = 24, 5 = 25, 6 = 26, 8 = 28, 0 = 30 or S = Solder Cup  
 Stranded wire available in even number sizes only.

**Wire Type**  
 C = Solid Copper (uninsulated)  
 E = MIL-W-16878/4, 7 Strand (NEMA HP3)  
 F = MIL-W-16878/6, 7 Strand (NEMA HP3)  
 G = MIL-W-16878/4, 19 Strand (NEMA HP3)  
 H = MIL-W-16878/6, 19 Strand (NEMA HP3)  
 K = Insulated Wire per SAE-AS 22759/11  
 L = Insulated Wire per SAE-AS 22759/19

**Insulation, Colour or Wire Finish**  
 1 = White  
 2 = Yellow  
 3 = Tin Plated  
 4 = Gold Plated  
 5 = Colour Coded per MIL-Std. 681, System 1.

**Shell Plating**  
 No Letter = Std. Yellow Chromate over Cadmium  
 N = Electroless Nickel  
 G = Gold  
 S = Stainless Steel  
 D = Olive Drab

**Mounting Hardware\*\***  
 B = No Hardware  
 F = Float Mount  
 R = Reverse Float Mount  
 K = Jackscrew (Standard)  
 D = Jackscrew (Short Neck Style)  
 L = Jackscrew (Low Profile)  
 P = Jackpost, Sizes 9 thru 51  
 MIL-C-83513/5-07  
 Size 100 MIL-C-83513/5-17  
 C = Jackpost (Short Style)  
 M = Jackscrew, Hex. Hd., Low Profile  
 Sizes 9 thru 51 MIL-C-83513/5-02  
 Size 100 MIL-C-83513/5-12  
 S = Jackscrew, Slot Hd., Low Profile  
 Sizes 9 thru 51 MIL-C-83513/5-05  
 Size 100 MIL-C-83513/5-15  
 H = Jackscrew, Hex. Hd., High Profile  
 Sizes 9 thru 51 MIL-C-83513/5-03  
 Size 100 MIL-C-83513/5-13  
 J = Jackscrew, Slot Hd., High Profile  
 Sizes 9 thru 51 MIL-C-83513/5-06  
 Size 100 MIL-C-83513/5-16

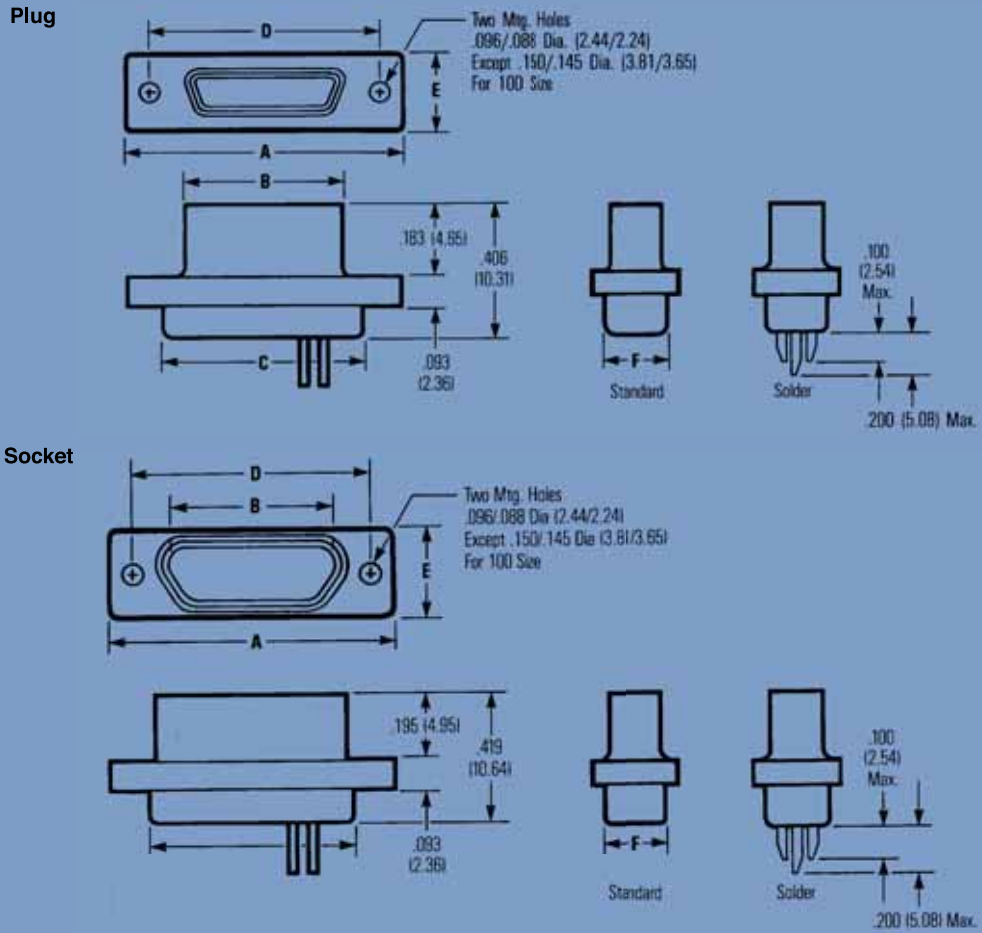
**Lead Length**  
 in Inches\*\*\*  
 00.5 Solid copper wire only  
 01.0 Solid copper wire only  
 02.0 Solid copper wire only  
 18.0 Stranded wire only  
 24.0 Stranded wire only  
 36.0 Stranded wire only  
 48.0 Stranded wire only

\*\* See p. 13 for standard hardware dimensions. See p. 14 for non-standard hardware and p. 31 for MIL specification hardware, both sold separately.

\*\*\* Length Tolerance: solid wire = ± 3/32", standard wire = ± 1/4".



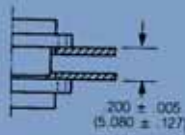
Connector Dimensions - Metal Shell



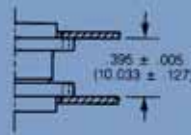
No. of Contacts	A		B Max.		C		D		E		F Max.	
	± .010 (.254) in	mm	in	mm	+0.10 (.254) -0.18 (.457) in	mm	± .005 (.127) in	mm	± .010 (.254) in	mm	in	mm
9 Plug	.775	19.68	.333	8.46	.390	9.91	.565	14.35	.298	7.57	.270	6.86
9 Socket	.775	19.68	.396	10.06	.390	9.91	.565	14.35	.298	7.57	.270	6.86
15 Plug	.925	23.50	.483	12.27	.540	13.72	.715	18.16	.298	7.57	.270	6.86
15 Socket	.925	23.50	.546	13.87	.540	13.72	.715	18.16	.298	7.57	.270	6.86
21 Plug	1.075	27.30	.633	16.08	.690	17.53	.865	21.97	.298	7.57	.270	6.86
21 Socket	1.075	27.30	.696	17.68	.690	17.53	.865	21.97	.298	7.57	.270	6.86
25 Plug	1.175	29.84	.733	18.62	.790	20.07	.965	24.51	.298	7.57	.270	6.86
25 Socket	1.175	29.84	.796	20.22	.790	20.07	.965	24.51	.298	7.57	.270	6.86
31 Plug	1.325	33.66	.883	21.16	.940	23.88	1.115	28.32	.298	7.57	.270	6.86
31 Socket	1.325	33.66	.946	24.03	.940	23.88	1.115	28.32	.298	7.57	.270	6.86
37 Plug	1.475	37.46	1.033	26.24	1.090	27.69	1.265	32.13	.298	7.57	.270	6.86
37 Socket	1.475	37.46	1.096	27.84	1.090	27.69	1.265	32.13	.298	7.57	.270	6.86
51 Plug	1.425	36.20	.983	24.97	1.040	26.42	1.215	30.86	.341	8.66	.310	7.87
51 Socket	1.425	36.20	1.046	26.57	1.040	26.42	1.215	30.86	.341	8.66	.310	7.87
100 Plug	2.160	54.86	1.383	35.13	1.432	36.38	1.800	45.71	.384	9.75	.360	9.15
100 Socket	2.160	54.86	1.446	36.73	1.432	36.38	1.800	45.71	.384	9.75	.360	9.15

Panel Mounting Dimensions

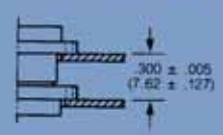
Pin and socket,  
rear mounted



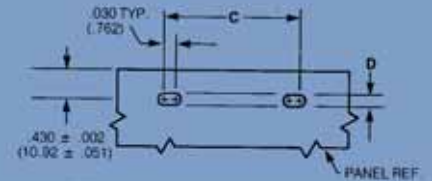
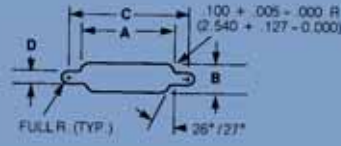
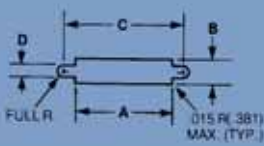
Pin and socket,  
front mounted



Pin, front mounted  
Socket, rear mounted

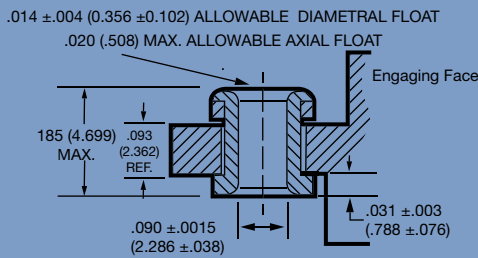


Panel Cutout Dimensions



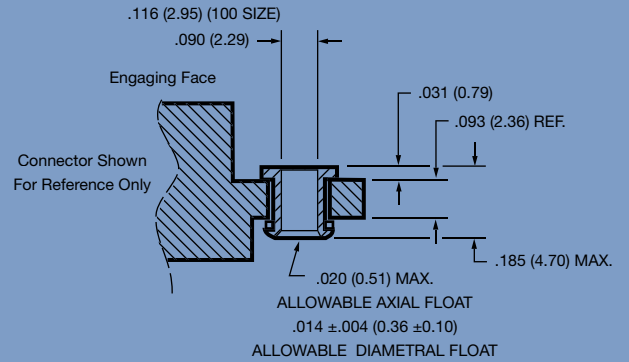
No. of Contacts	Figure Number	A		B		C		D	
		+0.004 -.000 in	(.101) (.000) mm	+0.004 -.000 in	(.101) (.000) mm	+0.005 -.000 in	(.127) (.000) mm	+0.005 -.000 in	(1.27) (.000) mm
9	1	.408	10.36	.270	6.86	.570	14.48	-	-
	2	.408	10.36	.256	6.50	.570	14.48	.089	2.26
	3	-	-	-	-	.570	14.48	-	-
15	1	.558	14.17	.270	6.86	.720	18.29	-	-
	2	.558	14.17	.256	6.50	.720	18.29	.089	2.26
	3	-	-	-	-	.720	18.29	-	-
21	1	.708	17.98	.270	6.86	.870	22.10	-	-
	2	.708	17.98	.256	6.50	.870	22.10	.089	2.26
	3	-	-	-	-	.870	22.10	-	-
25	1	.808	20.52	.270	6.86	.970	24.64	-	-
	2	.808	20.52	.256	6.50	.970	24.64	.089	2.26
	3	-	-	-	-	.970	24.64	-	-
31	1	.958	24.33	.270	6.86	1.120	28.45	-	-
	2	.958	24.33	.256	6.50	1.120	28.45	.089	2.26
	3	-	-	-	-	1.120	28.45	-	-
37	1	1.108	28.14	.270	6.86	1.270	32.26	-	-
	2	1.108	28.14	.256	6.50	1.270	32.26	.089	2.26
	3	-	-	-	-	1.270	32.26	-	-
51	1	1.058	26.87	.315	8.00	1.220	30.99	-	-
	2	1.058	26.87	.300	7.62	1.220	30.99	.089	2.26
	3	-	-	-	-	1.220	30.99	-	-
100	1	1.450	36.84	.361	9.17	1.805	45.86	.117	2.97
	2	1.562	39.68	.338	8.58	1.805	45.86	.117	2.97
	3	-	-	-	-	1.805	45.86	.117	2.97

**Mounting Hardware**  
**For Plastic & Metal Shell**  
**Dura-Con Connectors**



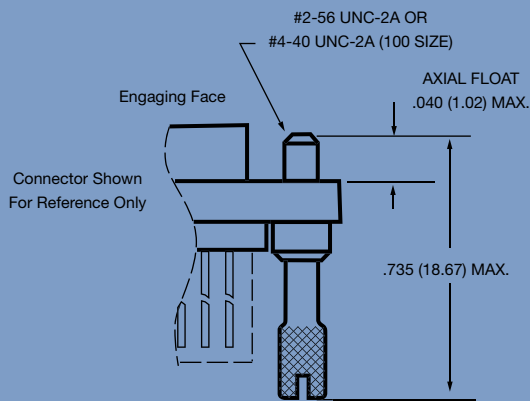
Float Mounting

**Option "F"**



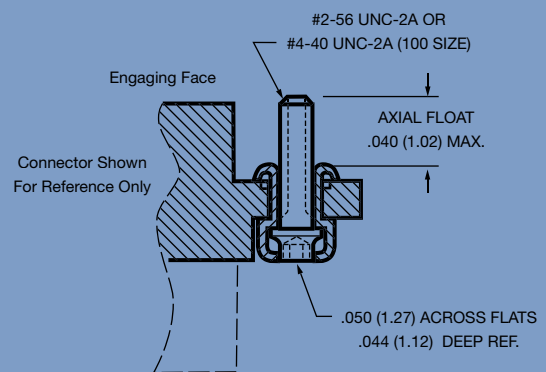
Reversed Float Mounting

**Option "R"**



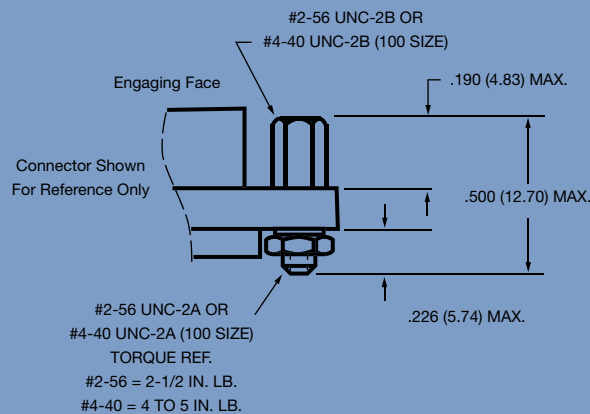
Standard Jackscrew

**Option "K"**



Low Profile Jackscrew

**Option "L"**

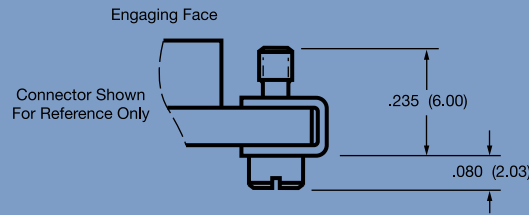


Removable Jackpost

**Option "P"**

#2-56 UNC-2A OR  
 #4-40 UNC-2A (100 SIZE)  
 TORQUE REF.  
 #2-56 = 2-1/2 IN. LB.  
 #4-40 = 4 TO 5 IN. LB.

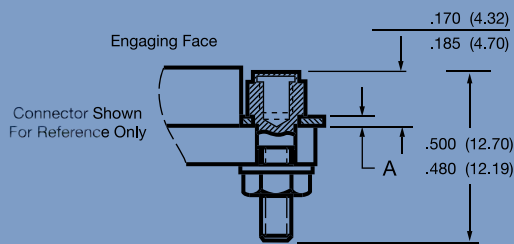




Screwlock Kit

**P/N: DCSL1**  
**Purchased Separately**

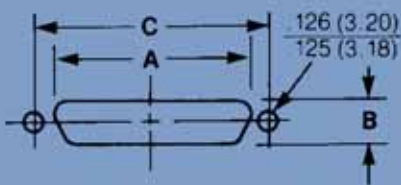
**Jackpost - Rear Panel Mount**  
**Purchased Separately**



**Jackpost Bushing**  
 (for rear panel mounting)

Jackpost Part Number	Panel Thickness		A Dimension	
	in	mm	in	mm
DCJPRM094	.094	2.5	.092/.087	2.34/2.21
DCJPRM063	.063	1.6	.061/.056	1.55/1.42
DCJPRM047	.047	1.2	.047/.042	1.19/1.07
DCJPRM031	.031	0.8	.030/.025	0.76/0.64

**Panel Cutout Dimensions**  
 (Plug & Receptacle)



Part Number (by Shell Size)	A		B		C	
	in	mm	in	mm	in	mm
9	.398	10.11	.249	6.32	.565	14.35
15	.548	13.92	.249	6.32	.715	18.16
21	.698	17.73	.249	6.32	.865	21.97
25	.798	20.27	.249	6.32	.965	24.51
31	.948	24.08	.249	6.32	1.115	28.34
37	1.098	27.89	.249	6.32	1.265	32.13
51	1.048	26.62	.292	7.42	1.215	30.86
100	1.448	36.78	.336	8.53	1.800	45.72

FEATURES

- Plug & socket versions available in 9, 15, 21, 25, 31, 37, 51, and 100 positions.
- Flow-through design facilitates inspection and cleaning after soldering.
- All terminal block connectors use standard mounting hardware.
- Metal shell provides EMI/RFI shielding capability.
- Available in 3 styles: Straight mount, 90° right-angle mount, and 90° right-angle narrow profile mounting.
- Silicone elastomer interfacial seal protects contacts from moisture and isolates them from each other and from the metal shell.
- Meets requirements of MIL-C-83513.
- Choice of insulator materials.

MATERIALS

**Insulator:** UL94V-0 glass-filled polyester or diallyl phthalate  
**Contacts:** Pins - Copper alloy, Sockets - Copper alloy (machined)  
**Contact Plating:** .000050 in gold  
**Shell:** Aluminum alloy  
**Shell Plating:** Yellow chromate over cadmium (std.) or electroless nickel

ENVIRONMENTAL

**Operating Temperature:** -55°C to +135°C

ELECTRICAL

**Current Rating:** 3 Amps maximum  
**Withstanding Voltage:** 600 VAC RMS @ sea level, 150 VAC @ 70,000 ft.  
**Contact Resistance:** 8 milliohms maximum  
**Insulation Resistance:** 1,000 megohms min between adjacent pins

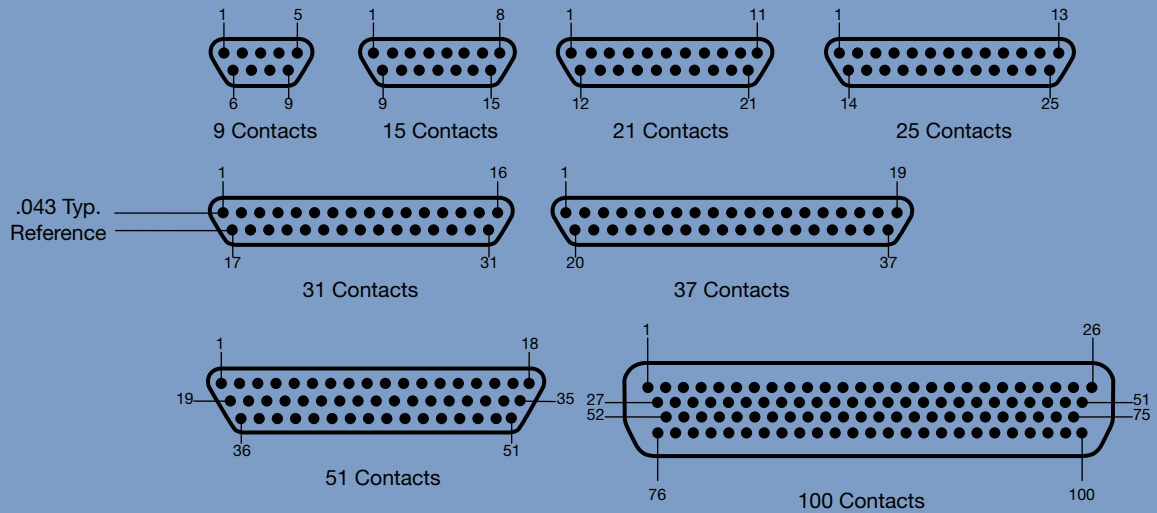
MECHANICAL

**Individual Contact:** 6 oz. (170.40 g) maximum insertion force;  
 0.5 oz. (14.20 g) minimum withdrawal force  
**Mating / Unmating Forces:** See table

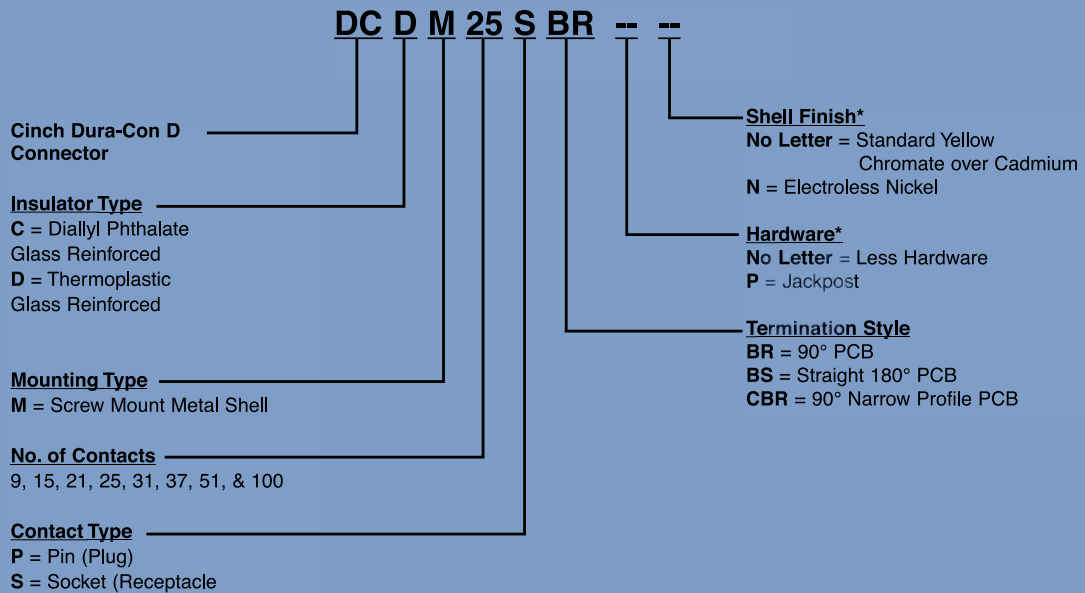


No. of Contacts	Maximum Mating Force		Minimum Unmating Force	
	Lb.	Kg	Lb.	Kg
9	5.63	2.56	.28	.13
15	9.38	4.26	.47	.21
21	13.13	5.96	.66	.30
25	15.63	7.10	.78	.35
31	19.38	8.80	.97	.44
37	23.13	10.50	1.16	.53
51	31.88	14.47	1.59	.72
100	62.50	28.38	3.13	1.42

**Contact Arrangements**



**Ordering Information**

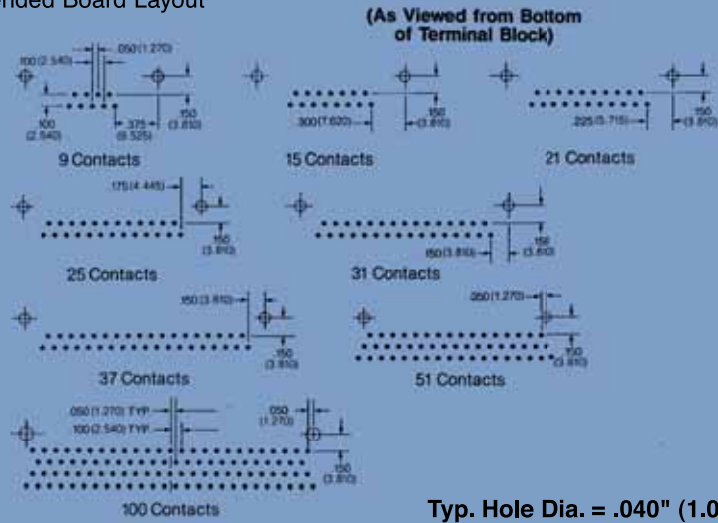
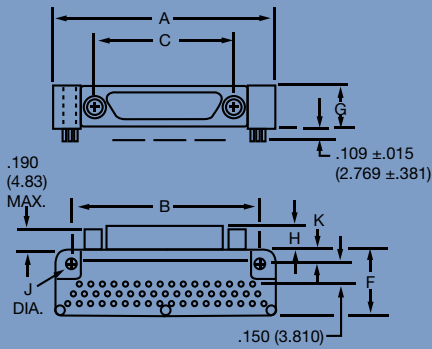


\* For other options consult factory.



**90° Termination**

**Recommended Board Layout**



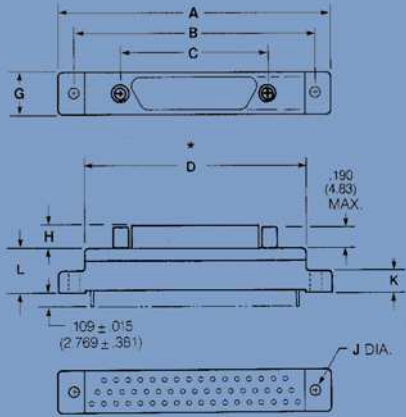
**Typ. Hole Dia. = .040" (1.02 mm)**

NOTE: For additional connector dimensions see p.11

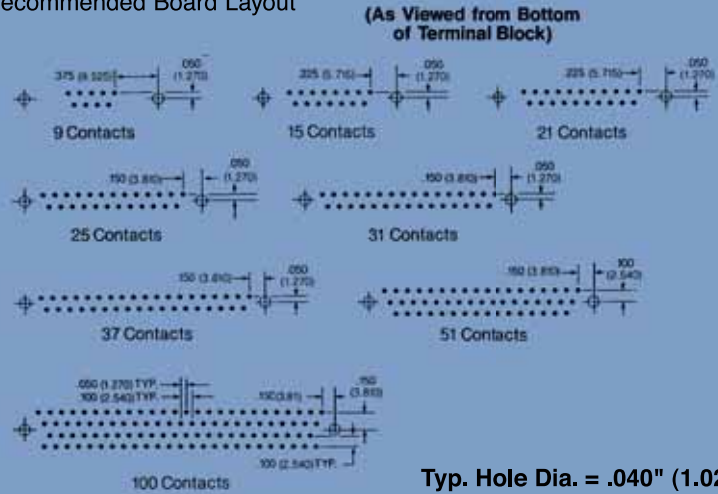
No. of Contacts	A Max.		B ± .007 (0.18)		C ± .005 (0.13)		F Max.	
	in	mm	in	mm	in	mm	in	mm
9 Plug	1.390	35.31	1.150	29.21	.565	14.35	.465	11.81
9 Socket	1.390	35.31	1.150	29.21	.565	14.35	.465	11.81
15 Plug	1.540	39.12	1.300	33.02	.715	18.16	.465	11.81
15 Socket	1.540	39.12	1.300	33.02	.715	18.16	.465	11.81
21 Plug	1.690	42.93	1.450	36.83	.865	21.97	.465	11.81
21 Socket	1.690	42.93	1.450	36.83	.865	21.97	.465	11.81
25 Plug	1.790	45.47	1.550	39.37	.965	24.51	.465	11.81
25 Socket	1.790	45.47	1.550	39.37	.965	24.51	.465	11.81
31 Plug	2.040	51.82	1.800	45.72	1.115	28.32	.465	11.81
31 Socket	2.040	51.82	1.800	45.72	1.115	28.32	.465	11.81
37 Plug	2.340	59.44	2.100	53.34	1.265	32.13	.465	11.81
37 Socket	2.340	59.44	2.100	53.34	1.265	32.13	.465	11.81
51 Plug	1.875	47.63	1.600	40.64	1.215	30.86	.565	14.35
51 Socket	1.875	47.63	1.600	40.64	1.215	30.86	.565	14.35
100 Plug	2.780	70.61	2.500	63.50	1.800	45.72	.765	19.43
100 Socket	2.780	70.61	2.500	63.50	1.800	45.72	.765	19.43

No. of Contacts	G Max.		H Max.		J ± .005 (0.13)		K ± .015	
	in	mm	in	mm	in	mm	in	mm
9 Plug	.308	7.82	.190	4.83	.096	2.44	.125	3.18
9 Socket	.308	7.82	.200	5.08	.096	2.44	.125	3.18
15 Plug	.308	7.82	.190	4.83	.096	2.44	.125	3.18
15 Socket	.308	7.82	.200	5.08	.096	2.44	.125	3.18
21 Plug	.308	7.82	.190	4.83	.096	2.44	.125	3.18
21 Socket	.308	7.82	.200	5.08	.096	2.44	.125	3.18
25 Plug	.308	7.82	.190	4.83	.096	2.44	.125	3.18
25 Socket	.308	7.82	.200	5.08	.096	2.44	.125	3.18
31 Plug	.308	7.82	.190	4.83	.096	2.44	.125	3.18
31 Socket	.308	7.82	.200	5.08	.096	2.44	.125	3.18
37 Plug	.308	7.82	.190	4.83	.096	2.44	.125	3.18
37 Socket	.308	7.82	.200	5.08	.096	2.44	.125	3.18
51 Plug	.351	8.92	.190	4.83	.096	2.44	.125	3.18
51 Socket	.351	8.92	.200	5.08	.096	2.44	.125	3.18
100 Plug	.394	10.00	.190	4.83	.125	3.18	.225	5.72
100 Socket	.394	10.00	.200	5.08	.125	3.18	.225	5.72

**Straight (180°) Termination**



**Recommended Board Layout**



(As Viewed from Bottom of Terminal Block)

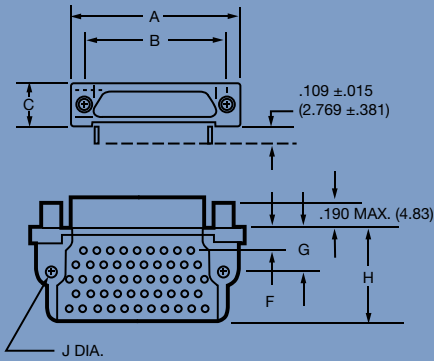
Typ. Hole Dia. = .040" (1.02 mm)

NOTE: For additional connector dimensions see p.11

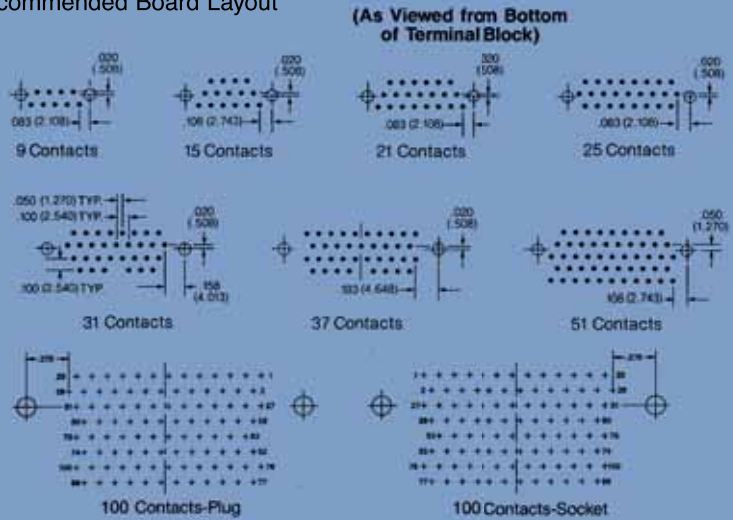
No. of Contacts	A		B		C		D		G	
	in	mm	in	mm	in	mm	in	mm	in	mm
9 Plug	1.390	35.31	1.150	29.21	.565	14.35	.885	22.48	.308	7.75
9 Socket	1.390	35.31	1.150	29.21	.565	14.35	.885	22.48	.308	7.75
15 Plug	1.390	35.31	1.150	29.21	.715	18.16	.945	24.0	.308	7.75
15 Socket	1.390	35.31	1.150	29.21	.715	18.16	.945	24.0	.308	7.75
21 Plug	1.690	42.93	1.450	36.83	.865	21.97	1.185	30.09	.308	7.75
21 Socket	1.690	42.93	1.450	36.83	.865	21.97	1.185	30.09	.308	7.75
25 Plug	1.740	44.20	1.500	38.10	.965	24.51	1.275	32.38	.308	7.75
25 Socket	1.740	44.20	1.500	38.10	.965	24.51	1.275	32.38	.308	7.75
31 Plug	2.040	51.82	1.800	45.72	1.115	28.32	1.575	40.00	.308	7.75
31 Socket	2.040	51.82	1.800	45.72	1.115	28.32	1.576	40.00	.308	7.75
37 Plug	2.340	59.44	2.100	53.34	1.265	32.13	1.875	47.62	.308	7.75
37 Socket	2.340	59.44	2.100	53.34	1.265	32.13	1.875	47.62	.308	7.75
51 Plug	2.270	57.66	2.000	50.80	1.215	30.86	1.775	45.08	.351	8.92
51 Socket	2.270	57.66	2.000	50.80	1.215	30.86	1.775	45.08	.351	8.92
100 Plug	3.070	77.98	2.800	71.12	1.800	45.72	2.585	65.55	.455	11.56
100 Socket	3.070	77.98	2.800	71.12	1.800	45.72	2.585	65.65	.455	11.56

No. of Contacts	H		J		K		L	
	in	mm	in	mm	in	mm	in	mm
9 Plug	.190	4.83	.096	2.44	.165	4.19	.355	9.02
9 Socket	.200	5.08	.096	2.44	.165	4.19	.355	9.02
15 Plug	.190	4.83	.096	2.44	.165	4.19	.355	9.02
15 Socket	.200	5.08	.096	2.44	.165	4.19	.355	9.02
21 Plug	.190	4.83	.096	2.44	.165	4.19	.355	9.02
21 Socket	.200	5.08	.096	2.44	.165	4.19	.355	9.02
25 Plug	.190	4.83	.096	2.44	.165	4.19	.355	9.02
25 Socket	.200	5.08	.096	2.44	.165	4.19	.355	9.02
31 Plug	.190	4.83	.096	2.44	.165	4.19	.355	9.02
31 Socket	.200	5.08	.096	2.44	.165	4.19	.355	9.02
37 Plug	.190	4.83	.096	2.44	.165	4.19	.355	9.02
37 Socket	.200	5.08	.096	2.44	.165	4.19	.355	9.02
51 Plug	.190	4.83	.096	2.44	.165	4.19	.355	9.02
51 Socket	.200	5.08	.096	2.44	.165	4.19	.355	9.02
100 Plug	.190	4.83	.125	3.18	.300	7.62	.550	13.97
100 Socket	.200	5.08	.125	3.18	.300	7.62	.550	13.97

**90° Narrow Termination**



**Recommended Board Layout**



NOTE: For additional connector dimensions see p.11

**Typ. Hole Dia. = .040" (1.02 mm)**

No. of Contacts	A Max.		B ± .005 (0.13)		C Max.	
	in	mm	in	mm	in	mm
9 Plug	.785	19.94	.565	14.35	.308	7.82
9 Socket	.785	19.94	.565	14.35	.308	7.82
15 Plug	.935	23.75	.715	18.16	.308	7.82
15 Socket	.935	23.75	.715	18.16	.308	7.82
21 Plug	1.085	27.56	.865	21.97	.308	7.82
21 Socket	1.085	27.56	.865	21.97	.308	7.82
25 Plug	1.085	30.10	.965	24.51	.308	7.82
25 Socket	1.185	30.10	.965	24.51	.308	7.82
31 Plug	1.335	33.91	1.115	28.32	.308	7.82
31 Socket	1.335	33.91	1.115	28.32	.308	7.82
37 Plug	1.485	37.72	1.265	32.13	.308	7.82
37 Socket	1.485	37.72	1.265	32.13	.308	7.82
51 Plug	1.435	36.45	1.215	30.86	.351	8.92
51 Socket	1.435	36.45	1.215	30.86	.351	8.92
100 Plug	2.175	55.25	1.800	45.72	.394	10.00
100 Socket	2.175	55.25	1.800	45.72	.394	10.00

No. of Contacts	F ± .010 (0.25)		G ± .010 (0.25)		H Max.	J ± .005 (0.13)		
	in	mm	in	mm		in	mm	
9 Plug	.230	5.84	.250	6.35	.420	10.67	.096	2.44
9 Socket	.230	5.84	.250	6.35	.420	10.67	.096	2.44
15 Plug	.130	3.30	.250	6.35	.420	10.67	.096	2.44
15 Socket	.130	3.30	.250	6.35	.420	10.67	.096	2.44
21 Plug	.130	3.30	.250	6.35	.420	10.67	.096	2.44
21 Socket	.130	3.30	.250	6.35	.420	10.67	.096	2.44
25 Plug	.130	3.30	.250	6.35	.420	10.67	.096	2.44
25 Socket	.130	3.30	.250	6.35	.420	10.67	.096	2.44
31 Plug	.130	3.30	.250	6.35	.520	13.21	.096	2.44
31 Socket	.130	3.30	.250	6.35	.520	13.21	.096	2.44
37 Plug	.130	3.30	.250	6.35	.520	13.21	.096	2.44
37 Socket	.130	3.30	.250	6.35	.520	13.21	.096	2.44
51 Plug	.150	3.81	.300	7.62	.650	16.51	.096	2.44
51 Socket	.150	3.81	.300	7.62	.650	16.51	.096	2.44
100 Plug	.200	5.08	.400	10.16	1.000	25.40	.125	3.18
100 Socket	.200	5.08	.400	10.16	1.000	25.40	.125	3.18

FEATURES

- All-plastic and metal shell wire versions available in solder cup, gold-plated solid wire, and insulated stranded wire.
- PCB mount "terminal block" type connectors available in straight or right angle.
- Sizes offered - 9, 15, 21, 25, 31, 35, 51, and 100 (metal shell only).
- All products are qualified to the requirements of MIL-C-83513 and marked with the M83513 part number.
- Optional shell platings and insulator materials offer high performance in harsh environments.
- Mounting hardware per MIL-C-83513.

MATERIALS

**Insulator:** UL94V-0 rated glass-filled polyester per MIL-M-24519 or diallyl phthalate (DAP) per MIL-M-14.  
**Contacts:** Pins - Copper alloy, Sockets - Copper alloy  
**Contact Plating:** .000050 in gold per MIL-G-45204  
**Shell Material (Metal Shell Only):** Aluminum alloy  
**Shell Plating (Metal Shell Only):** Yellow chromate over cadmium (std.) or electroless nickel

ENVIRONMENTAL

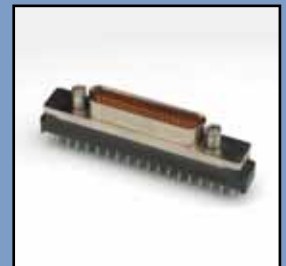
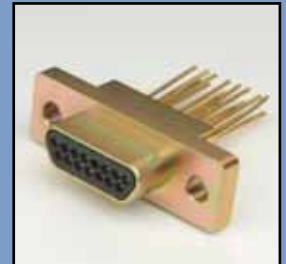
**Operating Temperature:** -55°C to +125°C

ELECTRICAL

**Current Rating:** 3 Amps maximum  
**Withstanding Voltage:** 600 VAC RMS @ sea level  
**Contact Resistance:** 8 milliohms maximum

MECHANICAL

**Durability:** 500 mate/unmate cycles  
**Individual Contact:** Forces 6 oz. (170.40 g) maximum insertion;  
 0.5 oz. (14.20 g) minimum withdrawal  
**Mating / Unmating Force:** See table



No. of Contacts	Maximum Mating Force		Minimum Unmating Force	
	Lb.	Kg	Lb.	Kg
9	5.63	2.56	.28	.13
15	9.38	4.26	.47	.21
21	13.13	5.96	.66	.30
25	15.63	7.10	.78	.35
31	19.38	8.80	.97	.44
37	23.13	10.50	1.16	.53
51	31.88	14.47	1.59	.72

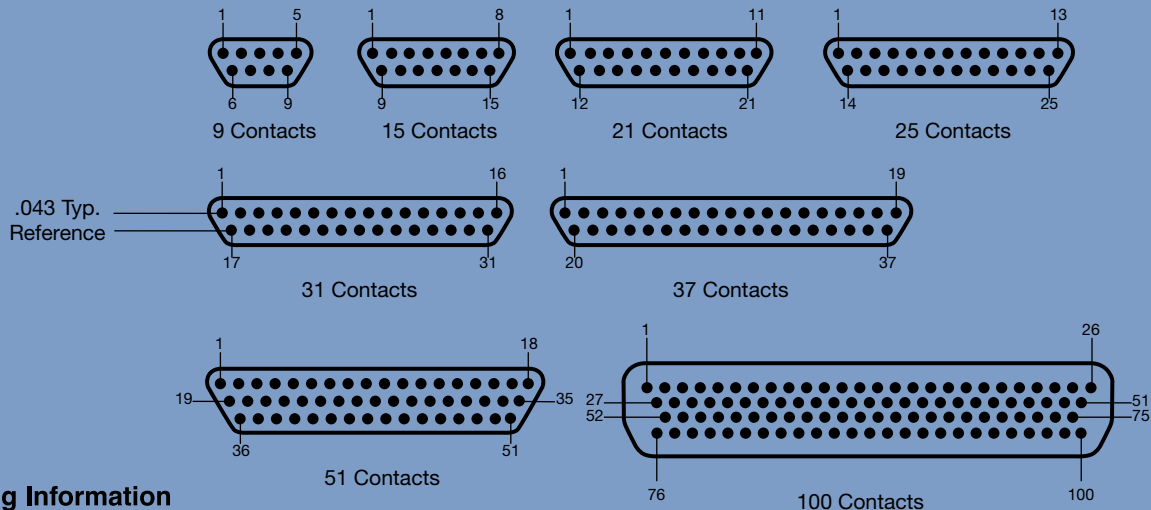


**Metal Shell**

**Contact Arrangements**

(Face view of pin insert)

(Use reverse order for socket side)



**Ordering Information**

**M83513/04 - A 03 C**

**Connector Type**

- 01 - Metal Shell D Plugs with Solder Cup Termination
- 02 - Metal Shell D Sockets with Solder Cup Termination
- 03 - Metal Shell D Plugs with Wire Leads
- 04 - Metal Shell D Sockets with Wire Leads

**Insert Arrangements**

(No. of Contacts)

- A = 9
- B = 15
- C = 21
- D = 25
- E = 31
- F = 37
- G = 51
- H = 100

**Shell Finish**

- C = Cadmium
- N = Electroless Nickel

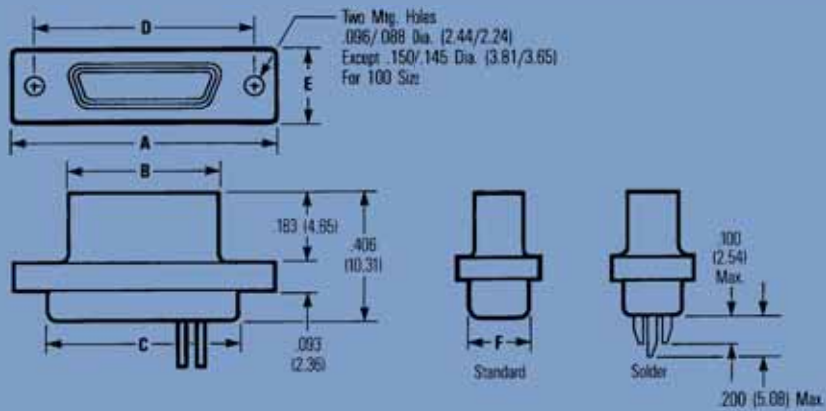
**Wire Type (Use only for /03 & /04, otherwise omit)**

- 01 - M22759/11-26-9, 18 inches, White (see note below)
- 02 - M22759/11-26-9, 36 inches, White (see note below)
- 03 - M22759/11-26-( ), 18 inches, Color Coded (see note below)
- 04 - M22759/11-26-( ), 36 inches, Color Coded (see note below)
- 05 - QQ-W-343, 25 AWG, 0.5 inch, Gold-Plated
- 06 - QQ-W-343, 25 AWG, 1.0 inch, Gold-Plated
- 07 - QQ-W-343, 25 AWG, 0.5 inch, Tin-Plated
- 08 - QQ-W-343, 25 AWG, 1.0 inch, Tin-Plated
- 09 - M22759/33-26-9, 18 inches, White
- 10 - M22759/33-26-9, 36 inches, White
- 11 - M22759/33-26-( ), 18 inches, Color Coded
- 12 - M22759/33-26-( ), 36 inches, Color Coded
- 13 - M22759/11-26-9, 72 inches, White
- 14 - M22759/11-26-( ), 72 inches, Color Coded
- 15 - M22759/33-26-9, 72 inches, White
- 16 - M22759/33-26-( ), 72 inches, Color Coded

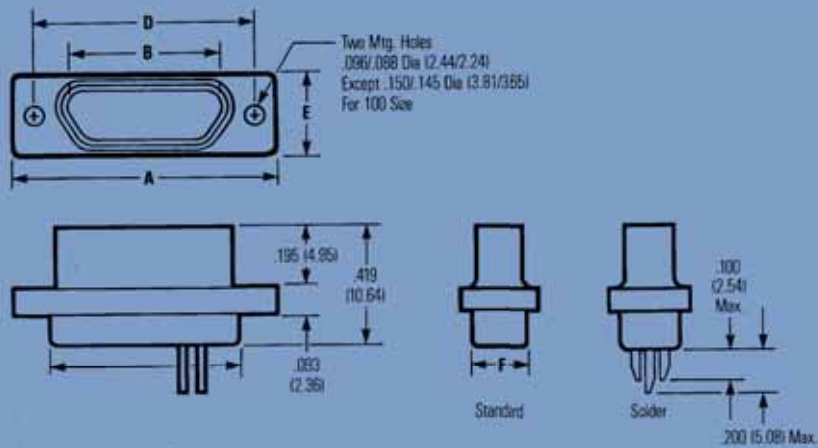
NOTE: See p.31 for M83513 mounting hardware.

Connector Dimensions - Metal Shell

Plug



Socket

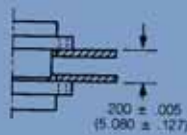


No. of Contacts	A		B Max. (Plug) Min. (Socket)		C + .010" (.254) - .018" (.457)		D		E		F Max.	
	± .010" (.254) in	mm	in	mm	in	mm	± .005" (.127) in	mm	± .010" (.254) in	mm	in	mm
9 Plug	.775	19.68	.3338	8.48	.390	9.91	.565	14.35	.298	7.57	.270	6.68
9 Socket	.775	19.68	.3342	8.49	.390	9.91	.565	14.35	.298	7.57	.270	6.68
15 Plug	.925	23.50	.4838	12.29	.540	13.72	.715	18.16	.298	7.57	.270	6.68
15 Socket	.925	23.50	.4842	12.30	.540	13.72	.715	18.16	.298	7.57	.270	6.68
21 Plug	1.075	27.30	.6338	16.10	.690	17.53	.865	21.97	.298	7.57	.270	6.68
21 Socket	1.075	27.30	.6342	16.11	.690	17.53	.865	21.97	.298	7.57	.270	6.68
25 Plug	1.175	29.84	.7338	18.64	.790	20.07	.965	24.51	.298	7.57	.270	6.68
25 Socket	1.175	29.84	.7342	18.65	.790	20.07	.965	24.51	.298	7.57	.270	6.68
31 Plug	1.325	33.66	.8838	22.45	.940	23.88	1.115	28.32	.298	7.57	.270	6.68
31 Socket	1.325	33.66	.8842	22.46	.940	23.88	1.115	28.32	.298	7.57	.270	6.68
37 Plug	1.475	37.46	1.0338	26.26	1.090	27.69	1.265	32.13	.298	7.57	.270	6.68
37 Socket	1.475	37.46	1.0342	26.27	1.090	27.69	1.265	32.13	.298	7.57	.270	6.68
51 Plug	1.425	36.20	.9838	24.99	1.040	26.42	1.215	30.86	.341	8.66	.310	7.87
51 Socket	1.425	36.20	.9842	25.00	1.040	26.42	1.215	30.86	.341	8.66	.310	7.87
100 Plug	2.160	54.86	1.3838	35.15	1.432	36.38	1.800	45.71	.384	9.75	.360	9.15
100 Socket	2.160	54.86	1.3842	35.16	1.432	36.38	1.800	45.71	.384	9.75	.360	9.15

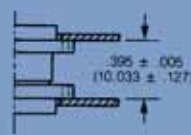
Panel Mounting Dimensions - Metal Shell

Panel Mounting Dimensions

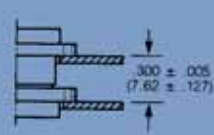
Pin and socket, rear mounted



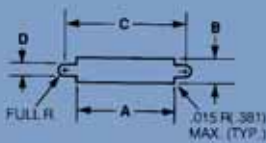
Pin and socket, front mounted



Pin, front mounted  
Socket, rear mounted

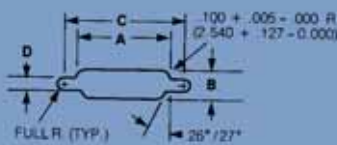


Panel Cutout Dimensions - Metal Shell



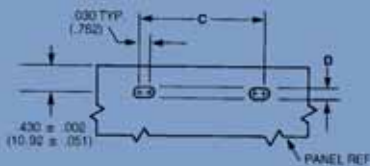
Front Mounting

No. of Contacts	A		B		C		D	
	in	mm	in	mm	in	mm	in	mm
9	.408	10.36	.270	6.86	.570	14.48	.089	2.26
15	.558	14.17	.270	6.86	.720	18.29	.089	2.26
21	.708	17.98	.270	6.86	.870	22.10	.089	2.26
25	.808	20.52	.270	6.86	.970	24.64	.089	2.26
31	.958	24.33	.270	6.86	1.120	28.45	.089	2.26
37	1.108	28.14	.270	6.86	1.270	32.26	.089	2.26
51	1.058	26.87	.315	8.00	1.220	30.99	.089	2.26
100	1.450	36.84	.361	9.17	1.805	45.86	.117	2.97



Rear Mounting

No. of Contacts	A		B		C		D	
	in	mm	in	mm	in	mm	in	mm
9	.408	10.36	.256	6.50	.570	14.48	.089	2.26
15	.558	14.17	.256	6.50	.720	18.29	.089	2.26
21	.708	17.98	.256	6.50	.870	22.10	.089	2.26
25	.808	20.52	.256	6.50	.970	24.64	.089	2.26
31	.958	24.33	.256	6.50	1.120	28.45	.089	2.26
37	1.108	28.14	.256	6.50	1.270	32.26	.089	2.26
51	1.058	26.87	.300	7.62	1.220	30.99	.089	2.26
100	1.450	36.84	.338	8.58	1.805	45.86	.117	2.97



Edgeboard Mounting

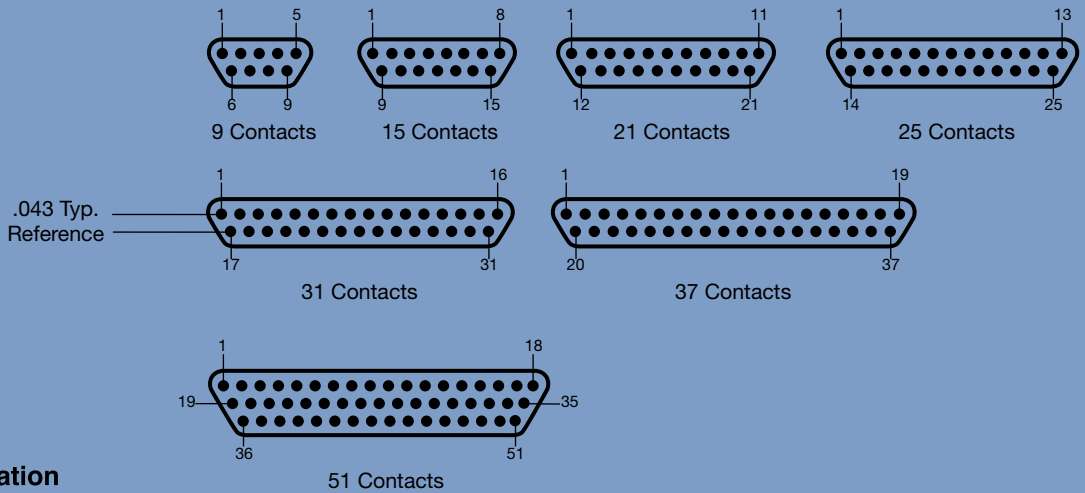
No. of Contacts	C		D	
	in	mm	in	mm
9	.570	14.48	.089	2.26
15	.720	18.29	.089	2.26
21	.870	22.10	.089	2.26
25	.970	24.64	.089	2.26
31	1.120	28.45	.089	2.26
37	1.270	32.26	.089	2.26
51	1.220	30.99	.089	2.26
100	1.805	45.86	.117	2.97

**Plastic Shell**

**Contact Arrangements**

(Face view of pin insert)

(Use reverse order for socket side)



**Ordering Information**

**M83513/06-A 04**

**Connector Type**

- 06** - Plastic Shell Plugs with Solder Cup Termination
- 07** - Plastic Shell Sockets with Solder Cup Termination
- 08** - Plastic Shell Plugs with Wire Leads
- 09** - Plastic Shell Sockets with Wire Leads

**Insert Arrangements**

(No. of Contacts)

- A** = 9
- B** = 15
- C** = 21
- D** = 25
- E** = 31
- F** = 37
- G** = 51

**Wire Type (Use only for /08 & /09, otherwise omit)**

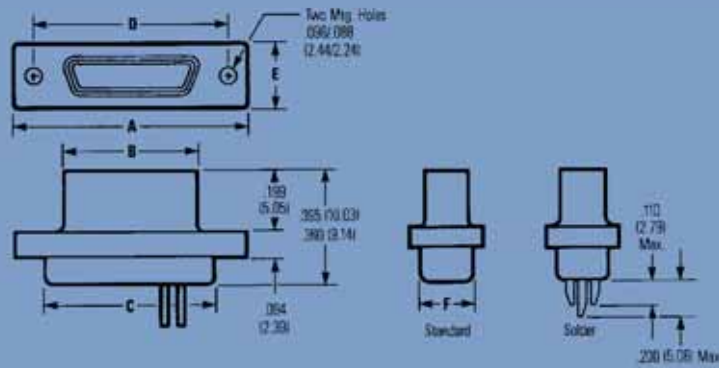
- 01** - M22759/11-26-9, 18 inches, White
- 02** - M22759/11-26-9, 36 inches, White
- 03** - M22759/11-26-( ), 18 inches, Color Coded
- 04** - M22759/11-26-( ), 36 inches, Color Coded
- 05** - QQ-W-343, 25 AWG, 0.5 inch, Gold-Plated
- 06** - QQ-W-343, 25 AWG, 1.0 inch, Gold-Plated
- 07** - QQ-W-343, 25 AWG, 0.5 inch, Tin-Plated
- 08** - QQ-W-343, 25 AWG, 1.0 inch, Tin-Plated
- 09** - M22759/33-26-9, 18 inches, White
- 10** - M22759/33-26-9, 36 inches, White
- 11** - M22759/33-26-( ), 18 inches, Color Coded
- 12** - M22759/33-26-( ), 36 inches, Color Coded
- 13** - M22759/11-26-9, 72 inches, White
- 14** - M22759/11-26-( ), 72 inches, Color Coded
- 15** - M22759/33-26-9, 72 inches, White
- 16** - M22759/33-26-( ), 72 inches, Color Coded

NOTE: See p.31 for M83513 mounting hardware.

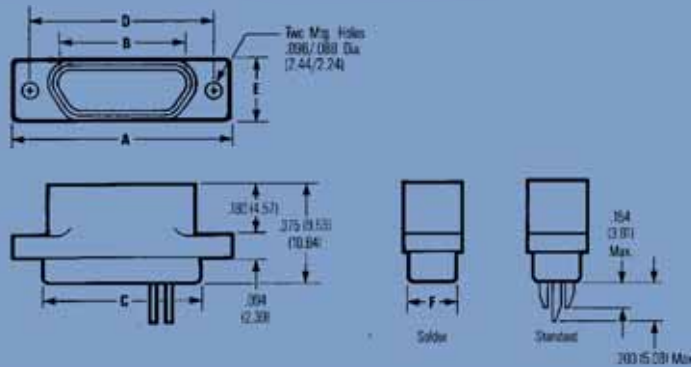


Shell Dimensions - (All-Plastic Version)

Plug



Socket



No. of Contacts	A		B Max. (Plug) Min. (Socket)		C		D		E		F Max.	
	±.010" (.254)				+.010" (.254) -.018" (.457)		±.005" (.127)		±.010" (.254)			
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
9 Plug	.778	19.76	.2918	7.41	.398	10.11	.565	14.35	.208	5.28	.173	4.39
9 Socket	.778	19.76	.2922	7.42	.398	10.11	.565	14.35	.208	5.28	.173	4.39
15 Plug	.928	23.57	.4418	11.22	.548	13.92	.715	18.16	.208	5.28	.173	4.39
15 Socket	.928	23.57	.4422	11.23	.548	13.92	.715	18.16	.208	5.28	.173	4.39
21 Plug	1.078	27.38	.5918	15.03	.698	17.73	.865	21.97	.208	5.28	.173	4.39
21 Socket	1.078	27.38	.5922	15.04	.698	17.73	.865	21.97	.208	5.28	.173	4.39
25 Plug	1.178	29.92	.6918	17.57	.798	20.27	.965	24.51	.208	5.28	.173	4.39
25 Socket	1.178	29.92	.6922	17.58	.798	20.27	.965	24.51	.208	5.28	.173	4.39
31 Plug	1.328	33.73	.8418	21.38	.948	24.08	1.115	28.32	.208	5.28	.173	4.39
31 Socket	1.328	33.73	.8422	21.39	.948	24.08	1.115	28.32	.208	5.28	.173	4.39
37 Plug	1.478	37.54	.9918	25.19	1.098	27.89	1.265	32.13	.208	5.28	.173	4.39
37 Socket	1.478	37.54	.9922	25.20	1.098	27.89	1.265	32.13	.208	5.28	.173	4.39
51 Plug	1.428	36.27	.9418	23.92	1.048	26.62	1.215	30.86	.250	6.35	.220	5.59
51 Socket	1.428	36.27	.9422	23.93	1.048	26.62	1.215	30.86	.250	6.35	.220	5.59