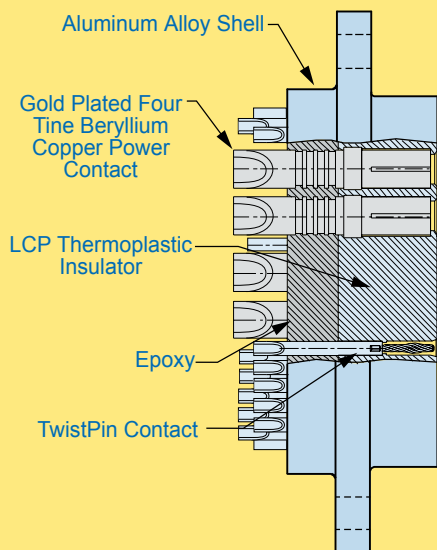


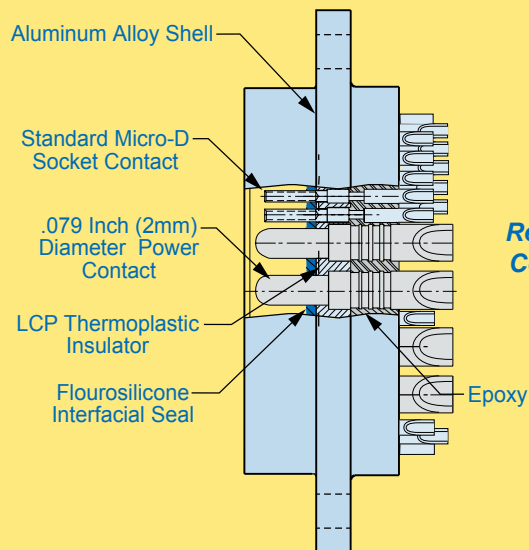
# Combo Micro-D for High Power Applications



## OVERVIEW AND PRODUCT SELECTION GUIDE



**Plug Connector**



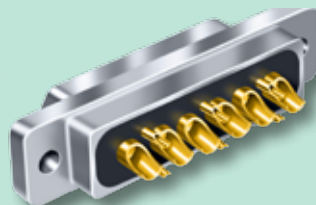
**Receptacle Connector**

**Glenair's Combo Micro-D's** combine the size and weight advantages of a Micro -D connector with the added ability to handle higher power needs. These connectors feature combinations of .079 inch (2mm) power contacts and TwistPin signal contacts.

**13 Amp Current Rating** – Available in three styles: solder cup, pre-wired pigtails or printed circuit board, these Micro-D connectors handle up to #16 AWG wire.

### Combo Micro-D Solder Cup Connectors

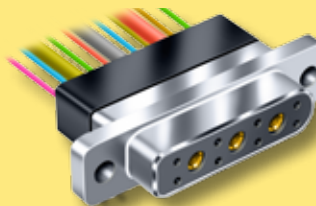
Nonremovable solder cup #16 power contacts for termination to #16 AWG or smaller wire. Micro pins accept #26 AWG or smaller wire. Gold plated contacts are backfilled with rigid epoxy.



**Combo Solder Cup**  
Page E-3

### Combo Micro-D Pre-Wired Pigtails

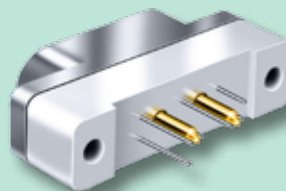
Crimp contacts are terminated to insulated Teflon® wire. Connectors are backpotted with epoxy, providing strain relief and environmental protection.



**Combo Pre-Wired**  
Page E-6

### Combo Micro-D Printed Circuit Board

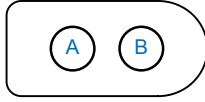
Ideal for flexible or rigid circuits, these vertical mount connectors feature high temperature materials to withstand soldering heat. A full range of hardware options is available.



**Combo Board Mount**  
Page E-9

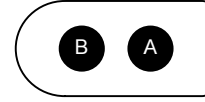


## CONTACT ARRANGEMENTS— MATING FACE VIEW



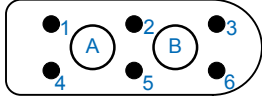
**B112P Plug**

2 Each .079" (2mm) Socket Contacts



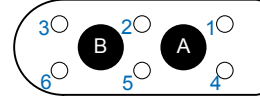
**B112R Receptacle**

2 Each .079" (2mm) Pin Contacts



**D113P Plug**

2 Each .079" (2mm) Socket Contacts, 6 Each Micro TwistPins



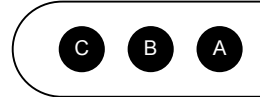
**D113R Receptacle**

2 Each .079" (2mm) Pin Contacts, 6 Each Micro Sockets



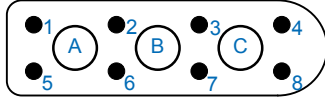
**D112P Plug**

2 Each .079" (2mm) Socket Contacts



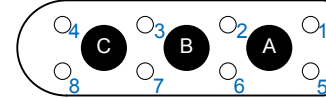
**D112R Receptacle**

3 Each .079" (2mm) Pin Contacts



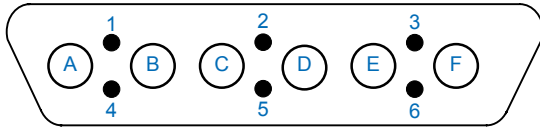
**E113P Plug**

3 Each .079" (2mm) Socket Contacts, 8 Each Micro TwistPins



**E113R Receptacle**

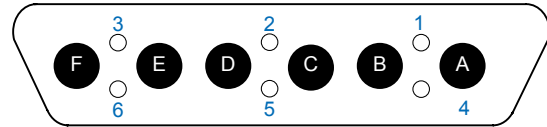
3 Each .079" (2mm) Pin Contacts, 8 Each Micro Sockets



**G103P Plug**

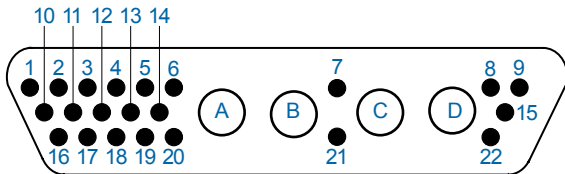
6 Each .079" (2mm) Socket Contacts, 6 Each Micro TwistPins

**G103**



**G103R Receptacle**

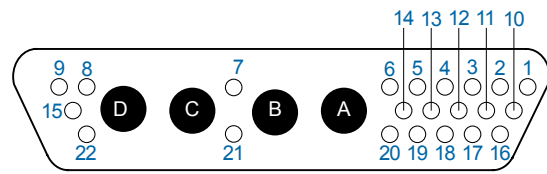
6 Each .079" (2mm) Pin Contacts, 6 Each Micro Sockets



**G101P Plug**

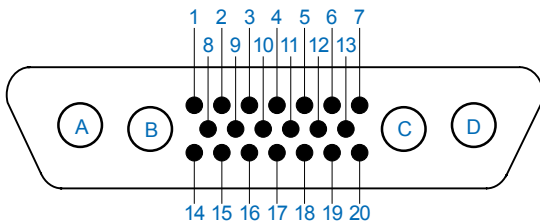
4 Each .079" (2mm) Socket Contacts, 22 Each Micro TwistPins

**G101**



**G101R Receptacle**

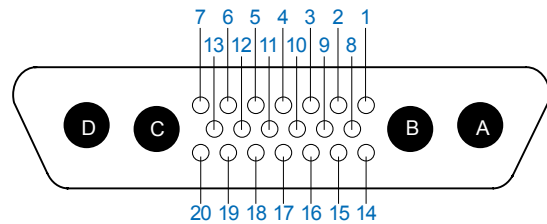
4 Each .079" (2mm) Pin Contacts, 22 Each Micro Sockets



**G111P Plug**

4 Each .079" (2mm) Socket Contacts, 20 Each Micro TwistPins

**G111**



**G111R Receptacle**

4 Each .079" (2mm) Pin Contacts, 20 Each Micro Sockets

F

# Combo Solder Cup Micro-D for High Power Applications



**13 Amp Current Rating** – Combo Micro-D's combine the size and weight advantages of a Micro -D connector with the added ability to handle higher power needs.

**Solder Cup Contacts** – Gold plated beryllium copper power contacts accommodate up to #16 AWG stranded wire. Signal contacts accept up to #26 AWG wire.

**Mil Spec Performance** – Glenair combo Micro-D connectors comply with the requirements of MIL-DTL-83513 and feature excellent resistance to high temperatures, shock and vibration.

## HOW TO ORDER COMBO SOLDER CUP MICRO-D

Series	Shell Finish	Shell Size and Insert Arrangement	Termination Type	Hardware
GMPM	1 – Cadmium	B112P	S – Solder Cup	B
	2 – Nickel	B112R		P
	4 – Black Anodize	D112P		M
	5 – Gold	D112R		M1
	6 – Chem Film	D113P		S
		D113R		S1
	Stainless Steel Shell	E113P		L
		E113R		K
	3 – Passivated	G101P		F
		G101R		R
		G103P		H
		G103R		
		G111P		
	G111R			
<b>Sample Part Number</b>				
GMPM	2	– G111P	S	B



G103P

### Plug Connector

with TwistPin signal contacts and socket 2mm power contacts



G103S

### Receptacle Connector

with socket TwistPin signal contacts and male 2mm power contacts

## MOUNTING HARDWARE

B	P	M	M1	S	S1	L	K	F	R	H
Thru-Hole	Jackpost #2-56	Hex Head Jackscrew #2-56	Hex Head Jackscrew, Extended #2-56	Slot Head Jackscrew #2-56	Slot Head Jackscrew, Extended #2-56	Hex Head Jackscrew Non-Removable #2-56	Slot Head Jackscrew Non-Removable Extended	Float Mount For Front Panel Mounting	Float Mount For Rear Panel Mounting	#2-56 Threaded Insert

### PERFORMANCE SPECIFICATIONS

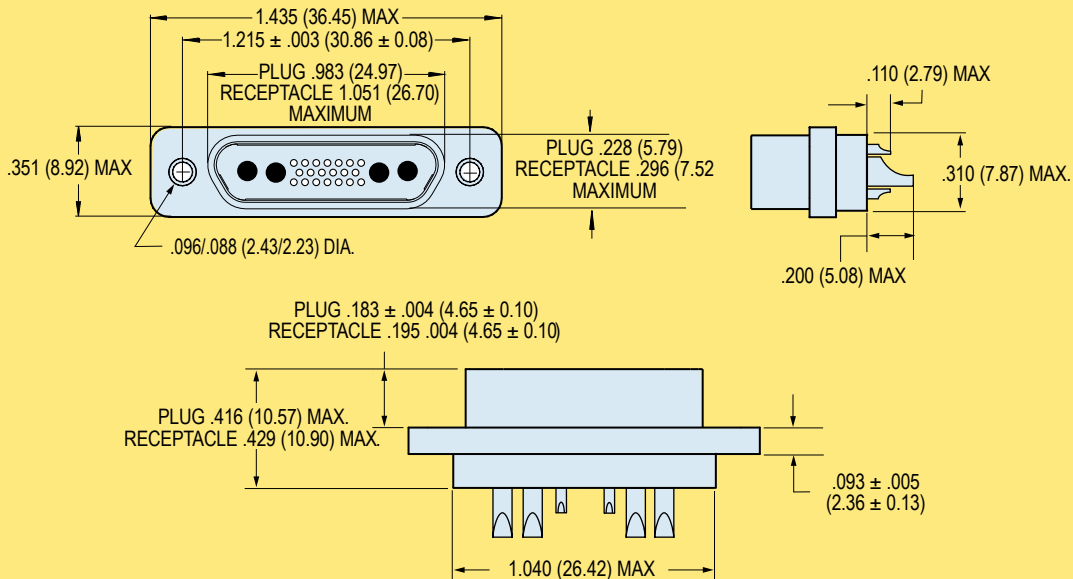
Current Rating	3 AMP Signal Contacts 13 AMP .079" (2mm) Power Contacts
Dielectric Withstanding Voltage	600 VAC Sea Level 150 VAC 70,000 Feet
Insulation Resistance	5000 Megohms Minimum
Contact Resistance	8 Milliohms Maximum
Low Level Contact Resistance	32 Milliohms Max. Signal Contacts
Magnetic Permeability	2 $\mu$ Maximum
Operating Temperature	-55° C. to +150° C.
Shock	50 g.
Vibration	20 g.
Outgassing	Meets NASA Outgassing Requirements
Mating Force	(10 Ounces) X (# of Contacts)

### MATERIALS AND FINISHES

Connector Shell	Aluminum Alloy 6061. See Ordering Info for Plating Options.
Insulator	Liquid Crystal Polymer (LCP)
Interfacial Seal	Fluorosilicone Rubber, Blue
Pin Contact, TwistPin	Copper Alloy with 50 Microinches Gold over Nickel Plating
Socket Contact	Copper Alloy with 50 Microinches Gold Over Nickel Plating
Pin Contact, 2mm. Power	Brass With 50 Microinches Gold Over Nickel Plating
Skt. Contact, 2mm. Power	Beryllium Copper With 50 Microinches Gold Over Nickel Plating
Hardware	300 Series Stainless Steel
PCB Terminals	Gold-Plated Copper Alloy, Solder Dipped
Encapsulant	Epoxy Resin Hysol EE4215

F

### DIMENSIONS FOR SHELL SIZE G CONNECTORS

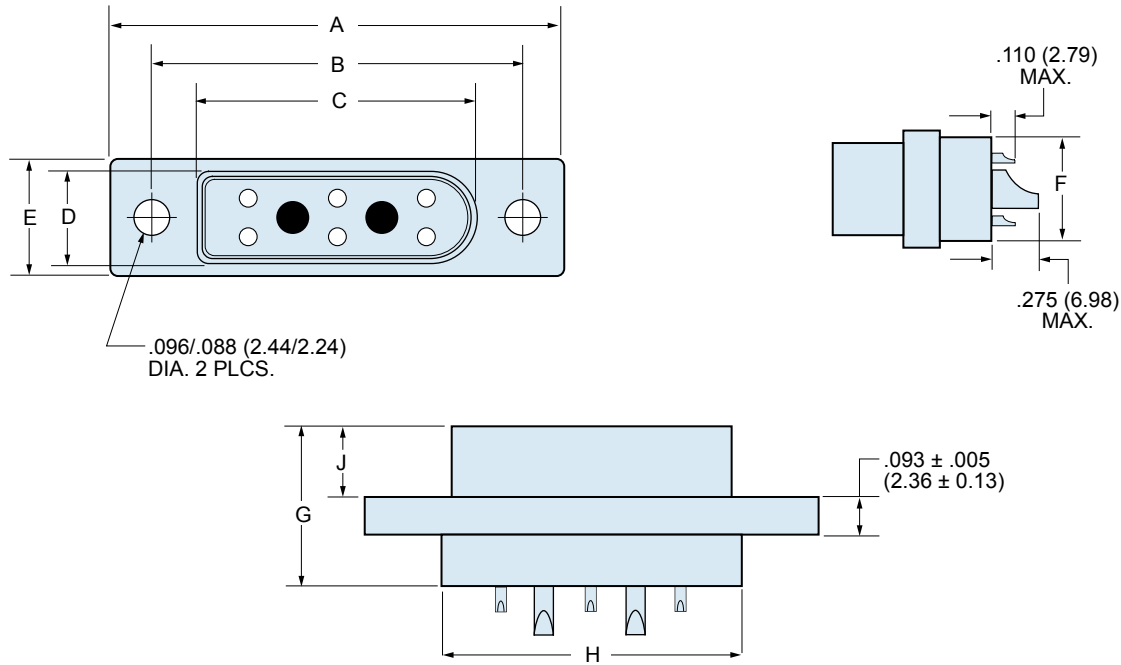


Dimensions for Shell Size G Connectors  
Layouts G101, G103, G111

# Combo Solder Cup Micro-D for High Power Applications



Micro-D  
Combo



Dimensions for Shell Size B, D, AND E Connectors  
Layouts B112, D112, D113, and E113

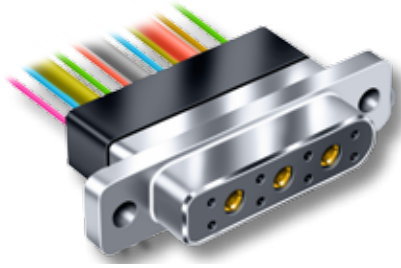
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## COMBO SOLDER CUP CONNECTOR DIMENSIONS

Layout	A Max.		B		C Max.		D Max.		E Max.		F Max.		G Max.		H Max.		J Max.	
	In.	mm.	In. ±.003	mm. ±0.08	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.
<b>B112P</b>	.935	23.75	.715	18.16	.481	12.21	.242	6.15	.315	8.00	.270	6.86	.416	10.57	.550	13.97	.184	4.68
<b>B112R</b>	.935	23.75	.715	18.16	.547	13.92	.315	8.00	.315	8.00	.270	6.86	.429	10.90	.550	13.97	.197	5.01
<b>D112P</b>	1.185	30.01	.965	24.51	.731	18.56	.242	6.15	.315	8.00	.270	6.86	.416	10.57	.800	20.32	.184	4.68
<b>D112R</b>	1.185	30.01	.965	24.51	.798	20.27	.315	8.00	.315	8.00	.270	6.86	.429	10.90	.800	20.32	.197	5.01
<b>D113P</b>	1.185	30.01	.965	24.51	.731	18.56	.242	6.15	.315	8.00	.270	6.86	.416	10.57	.800	20.32	.184	4.68
<b>D113R</b>	1.185	30.01	.965	24.51	.798	20.27	.315	8.00	.315	8.00	.270	6.86	.429	10.90	.800	20.32	.197	5.01
<b>E113P</b>	1.335	33.91	1.115	28.32	.881	22.37	.242	6.15	.315	8.00	.270	6.86	.416	10.57	.950	24.13	.184	4.68
<b>E113R</b>	1.335	33.91	1.115	28.32	.948	24.08	.315	8.00	.315	8.00	.270	6.86	.429	10.90	.950	24.13	.197	5.01



# Combo Pre-Wired Micro-D for High Power Applications



**GMPMT-D113P with (6) #24 pins and (3) 2mm. sockets**

**13 Amp Current Rating**—Combo Micro-D's combine the size and weight advantages of a Micro -D connector with the added ability to handle higher power needs.

**Pre-Wired And Potted with Epoxy**—Gold plated power contacts accommodate up to #16 AWG stranded wire. Signal contacts accept up to #24 AWG wire.

**Mil Spec Performance**—Glenair combo Micro-D connectors comply with the requirements of MIL-DTL-83513 and feature excellent resistance to high temperatures, shock and vibration.

## HOW TO ORDER PRE-WIRED MICRO-D POWER CONNECTORS

Series	Shell Finish	Shell Size and Insert Layout	Cable Entry Style	Wire Gage for #24 Contacts (AWG)	Wire Gage for #16 Contacts (AWG)	Wire Type	Wire Color	Wire Length mm	Hardware			
GMPM	1 - Cadmium	B112P	T - Top Entry	4 - #24	16	K - M22759/11 600 Vrms Teflon® (TFE)	1 - White Wire	460	B			
	2 - Nickel	B112R		6 - #26			18			2 - Yellow	Wire length in millimeters, rounded up to the nearest 10 mm.	P
	4 - Black Anodize	D112P		8 - #28			20			5 - Color-Coded Stripes Per MIL-STD-681		
	5 - Gold	D112R	Omit for D112 and B112 layouts containing power contacts only.	0 - #30	J - M22759/33 600 Vrms Modified Cross-Linked Tefze® (ETFE)	7 - Ten Color Repeating	#16 wire is always white. Wire colors apply to the signal wires only.	S				
	6 - Chem Film	D113P							E - NEMA HP3-EB 600 Vrms Type E M16878/4 (TFE)	L		
	Stainless Steel Shell	E113P									F - NEMA HP3-ETB Type ET M16878/6 250Vrms	K
		E113R										
		G101P							R			
		G101R								F		
	3 - Passivated	G103P	H									
		G103R										
		G111P										
		G111R										

### Sample Part Number

GMPM	2 -	B112P	T	-	18	K	7 -	460	B
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## MOUNTING HARDWARE

B	P	M	M1	S	S1	L	K	F	R	H
Thru-Hole	Jackpost	Hex Head Jackscrew	Hex Head Jackscrew, Extended	Slot Head Jackscrew	Slot Head Jackscrew, Extended	Hex Head Jackscrew Non-Removable	Slot Head Jackscrew Non-Removable Extended	Float Mount For Front Panel Mounting	Float Mount For Rear Panel Mounting	Threaded Insert



# Combo Pre-Wired Micro-D for High Power Applications



Micro-D  
Combo

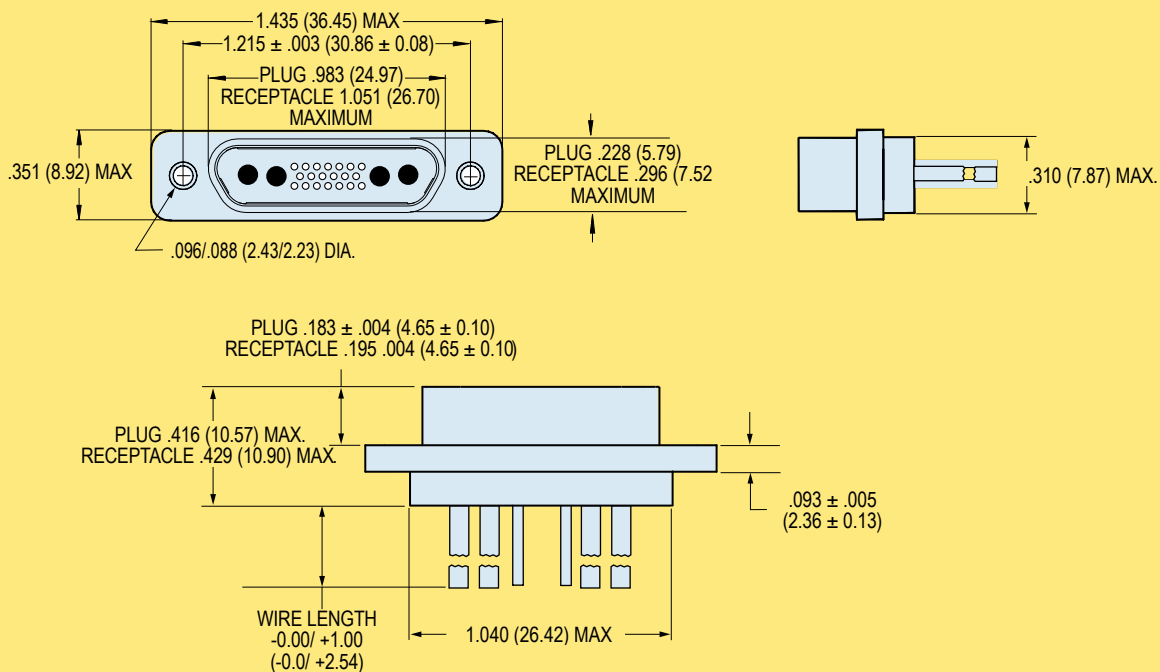
## PERFORMANCE SPECIFICATIONS

Current Rating	3 AMP Signal Contacts 13 AMP .079" (2mm) Power Contacts
Dielectric Withstanding Voltage	600 VAC Sea Level 150 VAC 70,000 Feet
Insulation Resistance	5000 Megohms Minimum
Contact Resistance	8 Milliohms Maximum
Low Level Contact Resistance	32 Milliohms Max. Signal Contacts
Magnetic Permeability	2 $\mu$ Maximum
Operating Temperature	-55° C. to +150° C.
Shock	50 g.
Vibration	20 g.
Outgassing	Meets NASA Outgassing Requirements
Mating Force	(10 Ounces) X (# of Contacts)

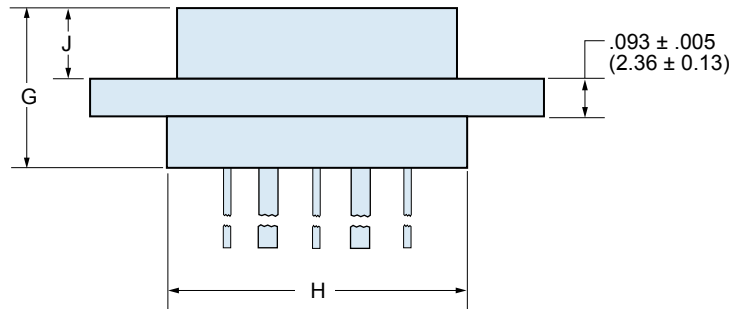
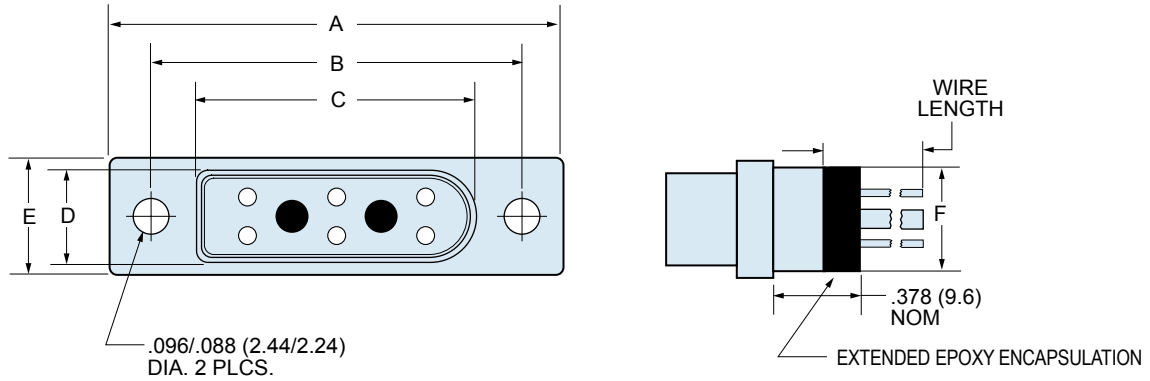
## MATERIALS AND FINISHES

Connector Shell	Aluminum Alloy 6061. See Ordering Info for Plating Options.
Insulator	Liquid Crystal Polymer (LCP)
Interfacial Seal	Fluorosilicone Rubber, Blue
Pin Contact, TwistPin	Copper Alloy with 50 Microinches Gold over Nickel Plating
Socket Contact	Copper Alloy with 50 Microinches Gold Over Nickel Plating
Pin Contact, 2mm. Power	Brass With 50 Microinches Gold Over Nickel Plating
Skt. Contact, 2mm. Power	Beryllium Copper With 50 Microinches Gold Over Nickel Plating
Hardware	300 Series Stainless Steel
PCB Terminals	Gold-Plated Copper Alloy, Solder Dipped
Encapsulant	Epoxy Resin Hysol EE4215

## DIMENSIONS FOR SHELL SIZE G CONNECTORS



Dimensions for Shell Size G Connectors  
Layouts G101, G103, G111



Dimensions for Shell Size B, D, AND E Connectors  
Layouts B112, D112, D113, and E113

### COMBO PRE-WIRED CONNECTOR DIMENSIONS

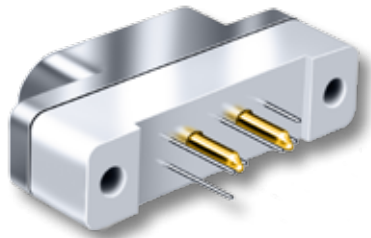
Layout	A Max.		B		C Max.		D Max.		E Max.		F Max.		G Max.		H Max.		J Max.	
	In.	mm.	In. ± .003	mm. ± 0.08	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.
<b>B112P</b>	.935	23.75	.715	18.16	.481	12.21	.242	6.15	.315	8.00	.270	6.86	.416	10.57	.550	13.97	.184	4.68
<b>B112R</b>	.935	23.75	.715	18.16	.547	13.92	.315	8.00	.315	8.00	.270	6.86	.429	10.90	.550	13.97	.197	5.01
<b>D112P</b>	1.185	30.01	.965	24.51	.731	18.56	.242	6.15	.315	8.00	.270	6.86	.416	10.57	.800	20.32	.184	4.68
<b>D112R</b>	1.185	30.01	.965	24.51	.798	20.27	.315	8.00	.315	8.00	.270	6.86	.429	10.90	.800	20.32	.197	5.01
<b>D113P</b>	1.185	30.01	.965	24.51	.731	18.56	.242	6.15	.315	8.00	.270	6.86	.416	10.57	.800	20.32	.184	4.68
<b>D113R</b>	1.185	30.01	.965	24.51	.798	20.27	.315	8.00	.315	8.00	.270	6.86	.429	10.90	.800	20.32	.197	5.01
<b>E113P</b>	1.335	33.91	1.115	28.32	.881	22.37	.242	6.15	.315	8.00	.270	6.86	.416	10.57	.950	24.13	.184	4.68
<b>E113R</b>	1.335	33.91	1.115	28.32	.948	24.08	.315	8.00	.315	8.00	.270	6.86	.429	10.90	.950	24.13	.197	5.01



# Combo Micro-D for High Power Applications





Micro-D  
Combo



**13 Amp Current Rating**—Combo Micro-D's combine the size and weight advantages of a Micro -D connector with the added ability to handle higher power needs.

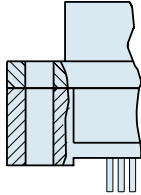
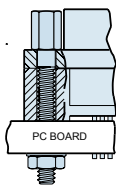
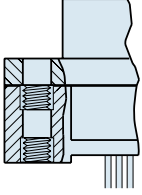
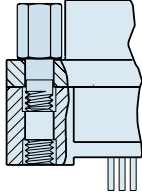
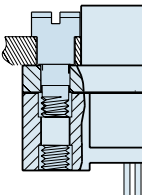
**Printed Circuit Board Terminals**—Ideal for flexible circuits or rigid boards, these gold plated PC tail contacts are sealed with epoxy encapsulant and are non-removable.

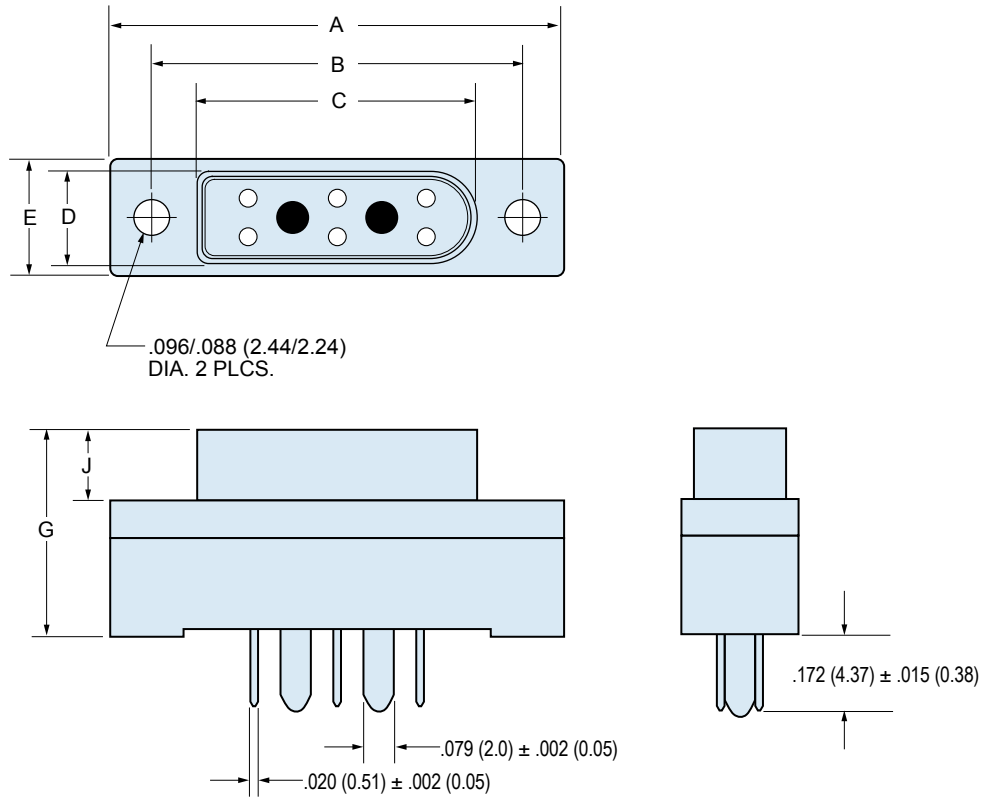
## HOW TO ORDER VERTICAL MOUNT PCB COMBO MICRO-D CONNECTORS

Series	Shell Finish	Shell Size and Insert Arrangement	Shell Style	Termination Style	Hardware	PC Tail Length
GMPM	1 – Cadmium	B112	P – Plug	CBS Compact Vertical Mount	NN – No Jackpost, No Threaded Insert	.172
	2 – Nickel	D112	R – Receptacle		PN – Extended Jackpost for .062" (1.6) PCB, No Threaded Insert	.109
	4 – Black Anodize	D112	 Plug		RN – Extended Jackpost for .196" (5.0) PCB, No Threaded Insert	.150
	5 – Gold Plated	D113			NU – 2-56 UNC Threaded Insert, No Jackposts	.190
	6 – Chem Film	E113			NM – Metric M2 Threaded Insert, No Jackposts	.250
	Stainless Steel Shell				 Receptacle	SU – Short Jackpost, 2-56 UNC Threaded Insert
3 – Passivated		SM – Short Jackpost, M2 Metric Threaded Insert				
<b>Rear Panel Jackposts</b>						
Supplied either with <b>U</b> style 2-56 UNC or <b>M</b> style M2 Threaded Inserts						
<b>TU or TM</b> – 0.094" (2.4) Panel <b>VU or VM</b> – 0.062" (1.6) Panel <b>WU or WM</b> – 0.047" (1.2) Panel <b>XU or XM</b> – 0.031" (0.8) Panel <b>XU or XM</b> – 0.023" (0.6) Panel						
<b>Sample Part Number</b>						
GMPM	2	B112	R	CBS	PU	– .110

F

## GMR7580 JACKPOST OPTIONS

NN	PN and RN	NU, NM	SU, SM	TU, VU, WU, XU, YU TM, VM, WM, XM, YM
				
Thru-Hole	Jackpost Kit PN – .062 (1.6) PCB RN – .196 (5.0) PCB	Threaded Inserts	Jackpost With Threaded Insert	Jackpost for Rear Panel Mounting



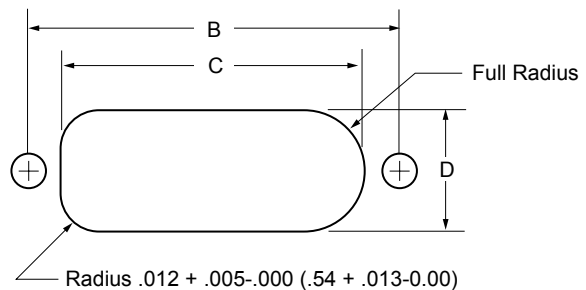
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### DIMENSIONS

Layout	A Max.		B		C Max.		D Max.		E Max.		G Max.		J Max.	
	In.	mm.	In. ± .003	mm. ± 0.08	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.
B112P	.935	23.75	.715	18.16	.481	12.21	.242	6.15	.315	8.00	.355	9.02	.184	4.68
B112R	.935	23.75	.715	18.16	.547	13.92	.315	8.00	.315	8.00	.355	9.02	.197	5.01
D112P	1.185	30.01	.965	24.51	.731	18.56	.242	6.15	.315	8.00	.355	9.02	.184	4.68
D112R	1.185	30.01	.965	24.51	.798	20.27	.315	8.00	.315	8.00	.355	9.02	.197	5.01
D113P	1.185	30.01	.965	24.51	.731	18.56	.242	6.15	.315	8.00	.355	9.02	.184	4.68
D113R	1.185	30.01	.965	24.51	.798	20.27	.315	8.00	.315	8.00	.355	9.02	.197	5.01
E113P	1.335	33.91	1.115	28.32	.881	22.37	.242	6.15	.315	8.00	.355	9.02	.184	4.68
E113R	1.335	33.91	1.115	28.32	.948	24.08	.315	8.00	.315	8.00	.355	9.02	.197	5.01

### RECOMMENDED PANEL CUTOUT

Layout	B		C		D	
	In. ± .003	mm. ± 0.08	In. + .004 - .000	mm. +0.06 -0.00	In. + .004 - .000	mm. +0.06 -0.00
B112	.715	18.16	.550	13.95	.316	8.02
D112	.965	24.51	.800	20.30	.316	8.02
D113	.965	24.51	.800	20.30	.316	8.02
E113	1.115	28.32	.950	24.11	.316	8.02

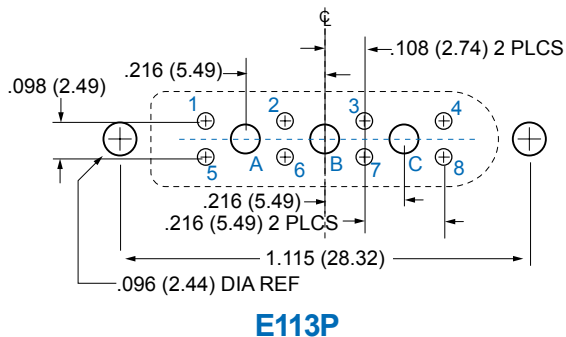
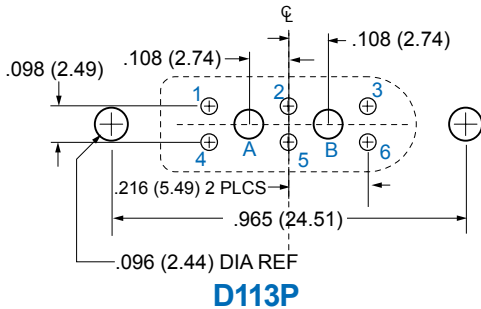
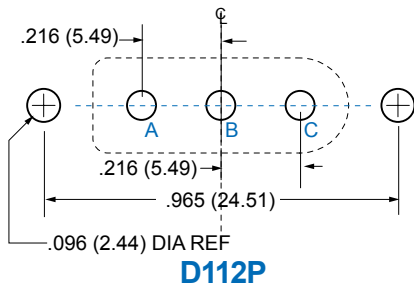
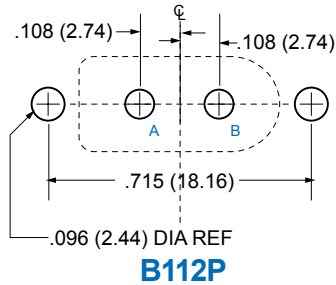


## COMBO MICRO-D PCB LAYOUTS

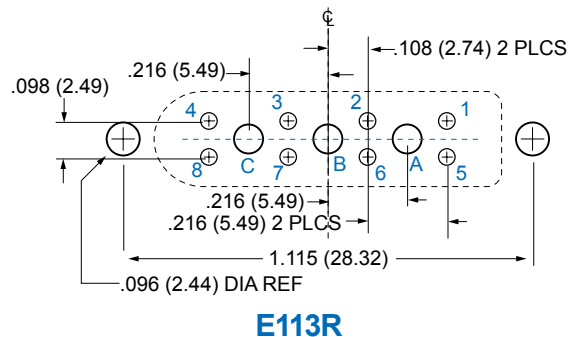
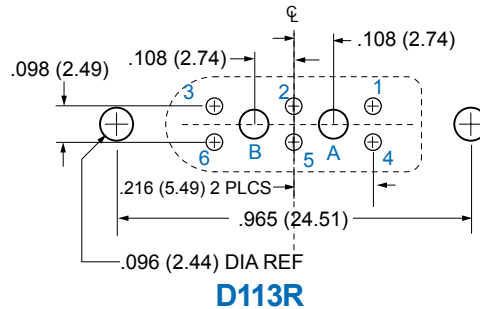
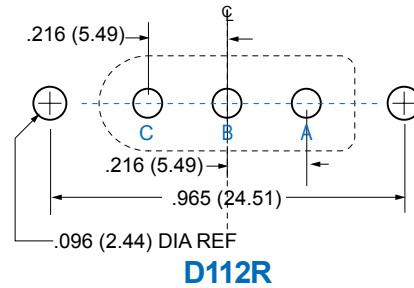
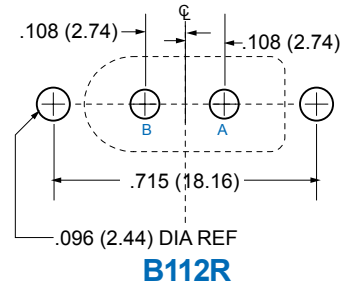
Patterns shown are for connector mounting side of PC board.

Plated thru-holes to accept .081 (2.06) maximum diameter power pins marked A, B and C, and .022 maximum diameter signal pins marked 1 – 8.

### Plug Connectors

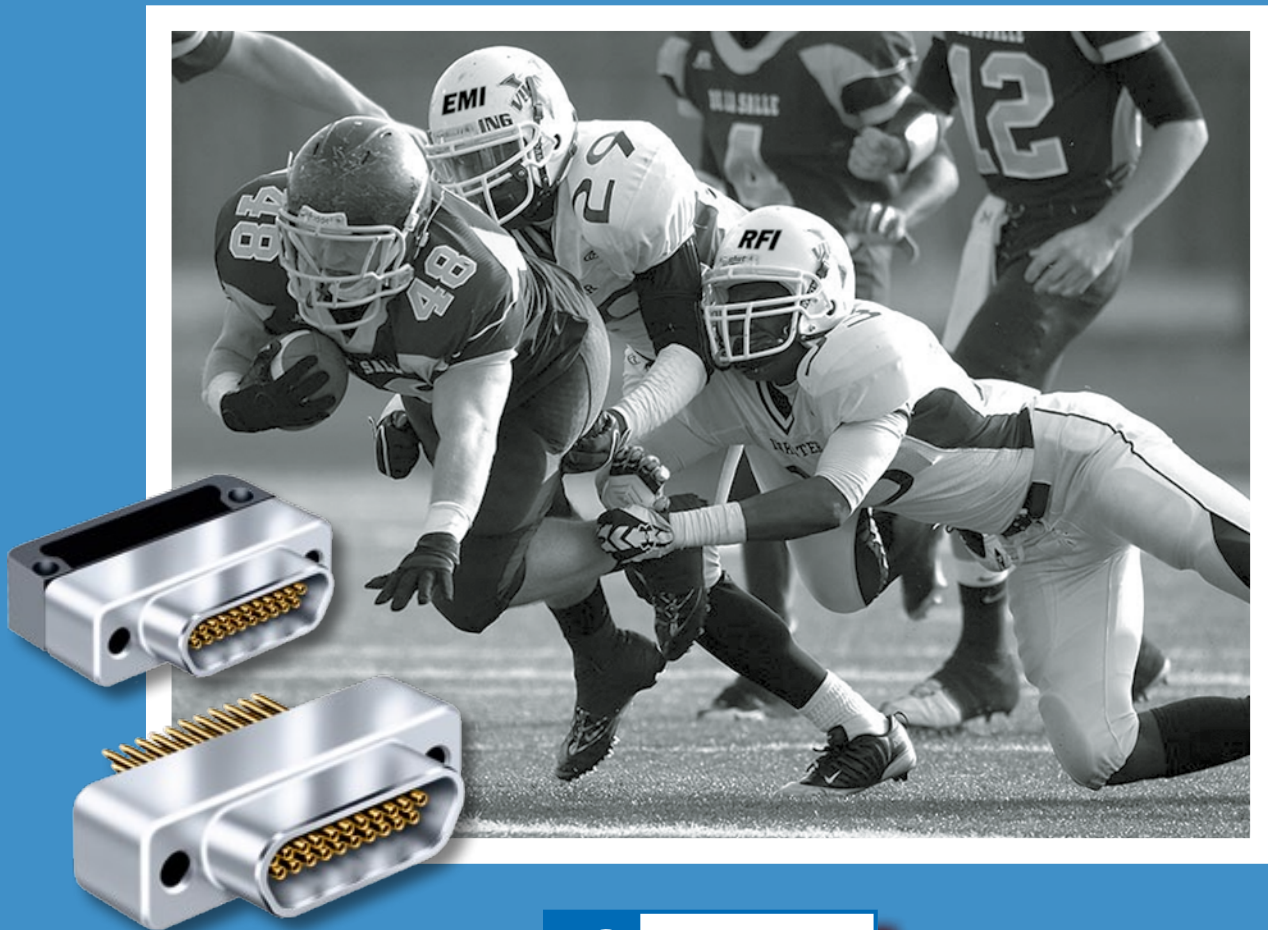


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