

MIL-DTL-83513: The Lasting Standard for High-Performance Miniaturized Rectangular Connectors

From contact retention to environmental sealing, M83513 is the proven standard for high-reliability applications

MIL-DTL-83513 is a joint services specification administered by the Defense Supply Center, Columbus, Ohio (DSCC). The original specification was released in 1985. Revision D, released in 1997, changed the document from "MIL-C-83513" to "MIL-PRF-83513". This change was made to adopt performance driven specifications and industry standards. In May 2002 the standard was finally upgraded to MIL-DTL-83513. The Mil-Spec covers both plastic and metal shell Micro-D connectors and three termination types: solder cup, pigtail assembly and printed circuit board connectors. Glenair is approved to produce the entire series of slash sheets. Note: M83513/05 covers jackscrews and jackposts, which are covered on pages C-3 and C-4.

PRODUCT OFFERINGS



M83513 Solder Cup
Page A-2
Slash 01, 02, 06, 07



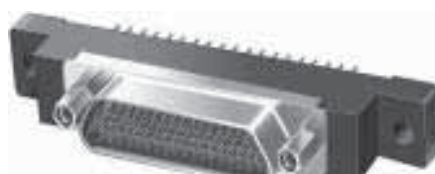
M83513 Pigtail Harness
Page A-3
Slash 03, 04, 08, 09



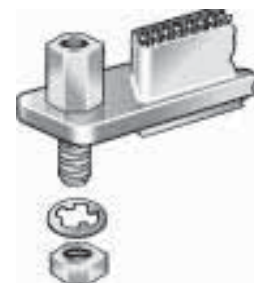
**M83513 Narrow Profile,
Right Angle, PCBs**
Page A-4
Slash 10 through 15



**M83513 Standard Profile,
Right Angle, Printed
Circuit Boards**
Page A-5
Slash 16 through 21



**M83513 Vertical Mount,
Printed Circuit Boards**
Page A-6
Slash 22 through 27



M83513 Hardware
Pages C-3 and C-4
Slash 05



MIL-DTL-83513

Solder Cup / Slash 01, 02, 06, 07



M83513 Solder Cup Connectors are available in both plastic and metal shell versions. Metal shell connectors are recommended for environmental and EMI applications.

Solder cup contacts accommodate #26 AWG solid or stranded wire. The LCP insulators resist damage from excessive soldering heat. Connectors are fully potted with epoxy. Hardware is ordered separately.

RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9
Standard Dimensions	10
Jacking Hardware Kits	C-3,4

* Available on the Inside Back Cover Fold-Out

HOW TO ORDER

Prefix	Slash Number	Insert Arrangement	Shell Material/Finish
M83513/	01 - Pin Connector, Metal Shell 02 - Socket Connector, Metal Shell 06 - Pin Connector, Plastic Shell 07 - Socket Connector, Plastic Shell	A - 9 Contacts B - 15 Contacts C - 21 Contacts D - 25 Contacts E - 31 Contacts F - 37 Contacts G - 51 Contacts H - 100 Contacts (Metal Shells Only)	C - Aluminum, Cadmium Plating N - Aluminum, Electroless Nickel P - Stainless Steel, Passivated Omit for Plastic Shell
Sample Part Number:			
M83513/	02	F	N

MIL-DTL-83513 Pigtail Harness / Slash 03, 04, 08, 09



MIL-DTL-83513



M83513 pigtail harness connectors are supplied pre-wired and are fully potted. Two types of #26 AWG insulated wire are available: M22759/11 Teflon® wire for general purpose applications, and M22759/33 Tefzel® wire for aerospace applications. #25 AWG solid copper wire per QQ-W-343 is also available, both gold plated and tin plated.

RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9
Standard Dimensions	10
Jacking Hardware Kits	C-3,4

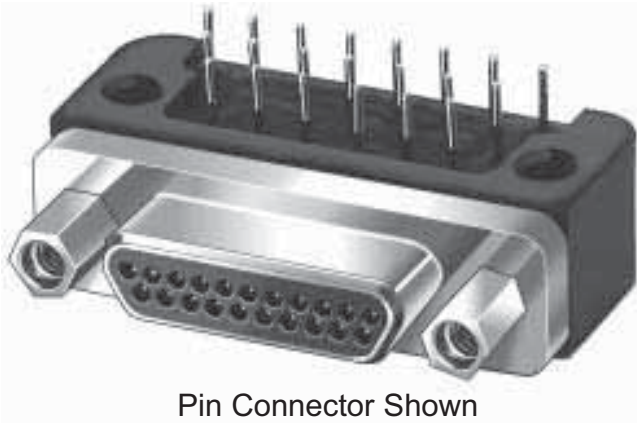
* Available on the Inside Back Cover Fold-Out

HOW TO ORDER

Prefix	Slash Number	Insert Arrangement	Wire Type	Shell Material/Finish
M83513/	03 - Pin Connector, Metal Shell 04 - Socket Connector, Metal Shell 08 - Pin Connector, Plastic Shell 09 - Socket Connector, Plastic Shell	A - 9 Contacts B - 15 Contacts C - 21 Contacts D - 25 Contacts E - 31 Contacts F - 37 Contacts G - 51 Contacts H - 100 Contacts, (Metal Shells Only)	Teflon <i>M22759/11-26 Wire</i> 01 - 18" White 02 - 36" White 03 - 18" 10 Color 04 - 36" 10 Color 13 - 72" White 14 - 72" 10 Color Irradiated Tefzel <i>M22759/33-26 Wire</i> 09 - 18" White 10 - 36" White 11 - 18" 10 Color 12 - 36" 10 Color 15 - 72" White 16 - 72" 10 Color Solid Uninsulated Wire 05 - .5" Gold Plated 06 - 1.0" Gold Plated 07 - .5" Tin Plated 08 - 1.0" Tin Plated	C - Aluminum, Yellow Chromate over Cadmium Plated N - Aluminum, Electroless Nickel Plated P - Stainless Steel, Passivated Omit For Plastic Shell * MIL-DTL-83513 recommends that nickel-plated shells and M22759/33 wire be used for space flight.
Sample Part Number:				
M83513/	04	B	03	C



MIL-DTL-83513 - Narrow Profile, Right Angle (90°), Printed Circuit Boards Slash / 10 through 15



Pin Connector Shown

M83513 narrow profile right angle printed circuit board connectors are the most popular type of board mount connector. Available in metal shell only, these connectors are potted with epoxy and are environmentally sealed.

Contact terminals are spaced on .100 inch by .100 inch centers for easy board mounting.

RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Dimensions	B-15
PCB Mounting Layouts	Z-6,7

* Available on the Inside Back
Cover Fold-Out

HOW TO ORDER

Prefix	Slash Number - Insert Arrangement	Printed Circuit Tail Length	Shell Material/Finish	Jackpost Option
M83513/	10-A - Pin Connector, 9 contacts 10-B - Pin Connector, 15 contacts 10-C - Pin Connector, 21 contacts 10-D - Pin Connector, 25 contacts 10-E - Pin Connector, 31 contacts 10-F - Pin Connector, 37 contacts 11-G - Pin Connector, 51 contacts 12-H - Pin Connector, 100 contacts 13-A - Socket Connector, 9 contacts 13-B - Socket Connector, 15 contacts 13-C - Socket Connector, 21 contacts 13-D - Socket Connector, 25 contacts 13-E - Socket Connector, 31 contacts 13-F - Socket Connector, 37 contacts 14-G - Socket Connector, 51 contacts 15-H - Socket Connector, 100 contacts	01 - .109 inches 02 - .140 inches 03 - .172 inches	C - Aluminum, Cadmium Plating N - Aluminum, Electroless Nickel P - Stainless Steel, Passivated	N - No jackposts or threaded insert P - Jackpost attached T - Threaded insert W - Jackpost and threaded insert
Sample Part Number:				
M83513/	10-C	01	N	P

MIL-DTL-83513 - Standard Profile, Right Angle (90°), Printed Circuit Boards Slash / 16 through 21



MIL-DTL-
83513

M83513 standard profile right angle printed circuit board connectors are potted with epoxy and are environmentally sealed. Available in eight contact arrangements, these connectors feature aluminum shells and flourosilicone interfacial seals.

Contact terminals are spaced on .100 inch by .100 inch centers for easy board mounting.



Pin Connector Shown

RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Dimensions	B-13
PCB Mounting Layouts	Z-4,5

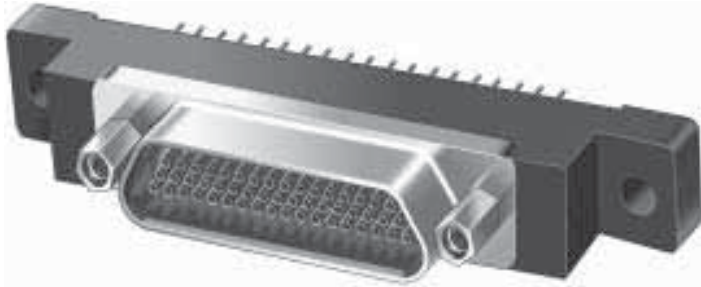
* Available on the Inside Back
Cover Fold-Out

HOW TO ORDER

Prefix	Slash Number - Insert Arrangement	Printed Circuit Tail Length	Shell Material/Finish	Jackpost Option
M83513/	16-A - Pin Connector, 9 contacts 16-B - Pin Connector, 15 contacts 16-C - Pin Connector, 21 contacts 16-D - Pin Connector, 25 contacts 16-E - Pin Connector, 31 contacts 16-F - Pin Connector, 37 contacts 17-G - Pin Connector, 51 contacts 18-H - Pin Connector, 100 contacts 19-A - Socket Connector, 9 contacts 19-B - Socket Connector, 15 contacts 19-C - Socket Connector, 21 contacts 19-D - Socket Connector, 25 contacts 19-E - Socket Connector, 31 contacts 19-F - Socket Connector, 37 contacts 20-G - Socket Connector, 51 contacts 21-H - Socket Connector, 100 contacts	01 - .109 inches 02 - .140 inches 03 - .172 inches	C - Aluminum, Cadmium Plating N - Aluminum, Electroless Nickel P - Stainless Steel, Passivated	N - No jackposts or threaded insert P - Jackpost attached T - Threaded insert W - Jackpost and threaded insert
Sample Part Number:				
M83513/	16-F	01	N	P



MIL-DTL-83513 - Vertical Mount, Printed Circuit Board Slash / 22 through 27



Socket Connector Shown

M83513 vertical mount printed circuit board connectors are potted with epoxy and are environmentally sealed. Available in eight contact arrangements, these connectors feature aluminum shells and flourosilicone interfacial seals.

Contact terminals are spaced on .100 inch by .100 inch centers for easy board mounting.

RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Dimensions	B-11
PCB Mounting Layouts	Z-2,3

* Available on the Inside Back
Cover Fold-Out

HOW TO ORDER

Prefix	Slash Number - Insert Arrangement	Printed Circuit Tail Length	Shell Material/Finish	Jackpost Option
M83513/	22-A - Pin Connector, 9 contacts 22-B - Pin Connector, 15 contacts 22-C - Pin Connector, 21 contacts 22-D - Pin Connector, 25 contacts 22-E - Pin Connector, 31 contacts 22-F - Pin Connector, 37 contacts 23-G - Pin Connector, 51 contacts 24-H - Pin Connector, 100 contacts 25-A - Socket Connector, 9 contacts 25-B - Socket Connector, 15 contacts 25-C - Socket Connector, 21 contacts 25-D - Socket Connector, 25 contacts 25-E - Socket Connector, 31 contacts 25-F - Socket Connector, 37 contacts 26-G - Socket Connector, 51 contacts 27-H - Socket Connector, 100 contacts	01 - .109 inches 02 - .140 inches 03 - .172 inches	C - Aluminum, Cadmium Plating N - Aluminum, Electroless Nickel P - Stainless Steel, Passivated	N - No jackposts or threaded insert P - Jackpost attached T - Threaded insert W - Jackpost and threaded insert
Sample Part Number:				
M83513/	23-G	01	N	P

Metric dimensions (mm) are indicated in parentheses.

COTS Micro-D Connectors General Information/Selection Guide



Glenair's line of COTS Micro-D Connectors are available with a wide range of options not supported by the M83513 standard.

The products are ideally suited for missiles, satellites, space vehicles, robotics, telecommunications gear and geophysical applications.

PRODUCT FEATURES

- .050 inch Contact Spacing
- Rugged Construction for Demanding Applications
- 9 to 100 Pins—Gold Plated TwistPin Construction
- Environmentally Sealed (Metal Shell Versions)
- 3 Amp Contact Current Rating
- High temperature LCP Insulator Material
- #24 through #30 AWG Wire Accomodation
- Three Termination Styles
 - Solder Cup
 - Pigtail Cable Assemblies
 - Printed Circuit Board

PRODUCT OFFERINGS



**Metal Shell Micro-D
Solder Cups**
Page B-2



**Metal Shell Micro-D Pigtail
Connectors**
Pages B-3, 4



**Plastic Shell Micro-D
Solder Cups**
Pages B-6



Back to Back Cables
Page B-5



**Plastic Shell Micro-D Pigtail
Connectors**
Pages B-7, 8



**Printed Circuit Board
Connectors**
Pages B-9 to B-18



COTS Micro-D Solder Cup Metal Shell

Solder Cup Micro-D Connectors are ideal for applications where pigtail harnesses are impractical or field termination is required. The high temperature LCP insulator resists damage from soldering heat. Solder cup contacts are gold plated and factory installed with epoxy.



- #26 AWG Wire Accomodation
- Environmentally Sealed
- 9 Through 100 Contacts
- Precision Machined Solder Cups

RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9
Standard Dimensions	10
Jacking Hardware Kits	C-3,4

* Available on the Inside Back
Cover Fold-Out

HOW TO ORDER

Conn. Series	Shell Plating Table III*	Insert Material Table I*	No. of Contacts	Contact Type	Termination	Hardware Table V*
MWDM	1 – Cadmium	L – LCP (Liquid Crystal Polymer)	9	P – Pin S – Socket	S - Solder Cup	B P L K M S M1 S1 F R
	2 – Nickel		15			
	4 – Black Anodize		21			
	5 – Gold		25			
	6 – Chem Film		31			
			37			
			51			
	100					
Sample Part Number:						
MWDM	2	L	— 37	S	S	B

* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION

COTS Micro-D Pigtails - Insulated Wire Metal Shell



Factory-terminated Micro-D connectors are available with three standard wire types for commercial, military and aerospace needs. These single-ended pigtail cable assemblies are 100% tested and fully potted.

- #24 Through #30 AWG
- Environmentally Sealed
- 9 Through 100 Contacts
- Precision Crimp Terminations

RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9
Standard Dimensions	10
Jacking Hardware Kits	C-3,4

* Available on the Inside Back Cover Fold-Out

HOW TO ORDER

Conn. Series	Shell Plating Table III*	Insert Material Table I*	No. of Contacts	Contact Type	Wire Gage (AWG)	Wire Type Table IV*	Wire Color Table IV*	Wire Length	Hardware Table V*
MWDM	1 - Cadmium	L - LCP (Liquid Crystal Polymer)	9	P - Pin	4 - 24	E - Std	1 - White	Length in 1 Inch Increments	B
	2 - Nickel		15	S - Socket	6 - 26	K - Mil	2 - Yellow		P
	4 - Black Anodize		21		8 - 28	J - Space			L
	5 - Gold		25		0 - 30				M
	6 - Chem Film		31			5 - Mil-Std-681 Striped			S
			37						7 - 10 Color Repeat
	51					F			
	100						R		
Sample Part Number:									
MWDM	1	L	15	S	6	K	7	24	B

* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION