

OVERVIEW

FCI's D-Subminiature connectors are part of an industry standard for applications requiring robust and reliable connectors. These proven D-Subminiature connectors are one of the most popular Input/Output interconnects, addressing a wide variety of applications in Telecommunications, Data, Consumer, Industrial, Military, Instrumentation and Medical. Since many years FCI has been offering a wide range of D-Subminiature connectors to meet various design requirements including those in harsh environment.

FCI offers full power and mixed power versions which has been specifically developed for power applications in industrial and telecom market segment. PC board connectors are delivered with preloaded power contacts (10 - 40A). Cable crimp and solder power contacts are delivered with colour code plastic clips for an easy wire gauge identification.



FEATURES & BENEFITS

- Power connectors available for PCB & Cable applications
- Available in full power and in mixed layout (signal + power) 2V2 to 36W4
- Power contacts available in solder, crimp & coaxial types with different current rating options
- Frugal-D design (2 shells + 2 housings) & Delta-D design (1 shell + 1 housing)
- · RoHS compliant

TARGET MARKETS/APPLICATIONS

- Data
 - Servers
 - · Server & storage blades
 - · External storage system
 - ·HDDs
 - · HDD carriers
- Communications
 - · Processor & storage blades
 - · Mezzanine cards
- Industrial, Instrumentation & Medical
 - · Embedded system boards

GENERAL CHARACTERISTICS

LAYOUTS

• Male insulator front view

Shell Size	Layout	
Е	2V2 coded	
	5W1	
A	11W1	1 2 3 Å 4 5 8 • • • • • • • • • • • • • • • • • • •
	7W2	M 1 2 A2
	3W3	A1
	3V3 coded	A1 A3
С	25W3	A1 A2 1 2 3 4 5 6 7 8 9 10 11 A3 12 13 14 15 16 17 18 19 20 21 22
	21WA4	A1 A2 1 2 3 4 5 6 7 8 9 A3 A4 10 11 11 12 13 14 15 16 17
	27W2	A1 1 2 3 4 5 6 7 8 9 10 11 12 13 A2 14 15 16 17 18 19 20 21 22 23 24 25
	8W8	A1

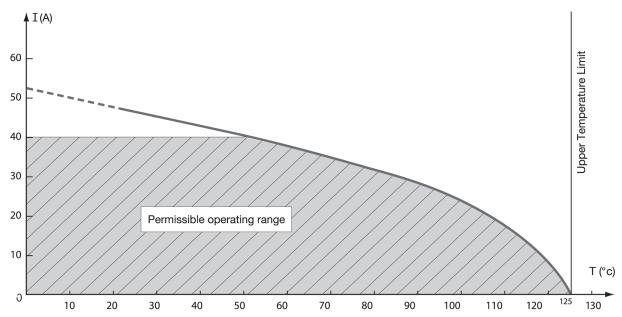
Shell Size	Layout	
В	21W1	1 2 3 4 5 6 7 8 8 10 11 12 13 14 15 18 17 18 19 20
	17W2	A1
	13W3	A3 A2 1 A11 10 8 8 7 8
	9W4	A3 1 2 A4 5
	5W5	A1
D	47W1	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 A1 16 17 16 19 20 71 22 22 22 22 22 24 24 44 45 46
	24W7	A1
	36W4	A1

Example of layout codification 7W2 = 7 contacts of which 2 power contacts

DERATING CURVES

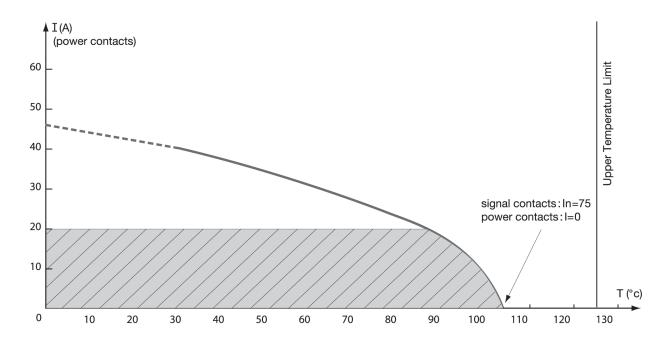
DERATING CURVE ON CONNECTOR DC 8W8 SA 00

• Fitted with contacts 8638 PSC 4005 (female) (I=40A)



DERATING CURVE ON CONNECTOR DB 13N3 PA 00

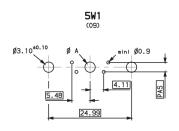
 Fitted with power contacts 8638 PPS 2005 (I=20A) (I signal contacts=7,5A)

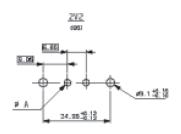


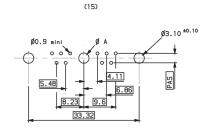
DIMENSIONS

PC BOARD DRILLING

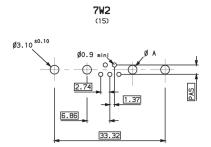
Solder Termination								
Version	Step	30A	40A					
		ØΑ						
3	2.84	Ø 2.40 ^{±0.10}	Ø 3.10 ^{±0.10}					
7	2.84	Ø 2.40 ^{±0.10}						
5	2.84	Ø 2.40 ^{±0.10}	Ø 3.10 ^{±0.10}					

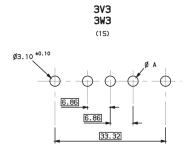


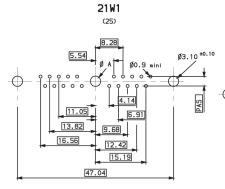


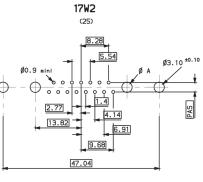


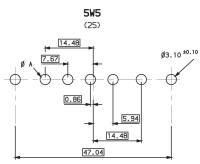
11 W 1

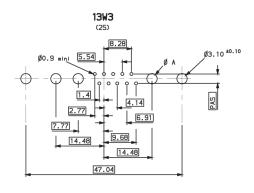


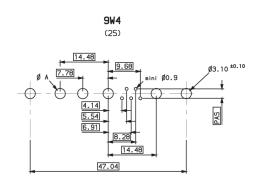






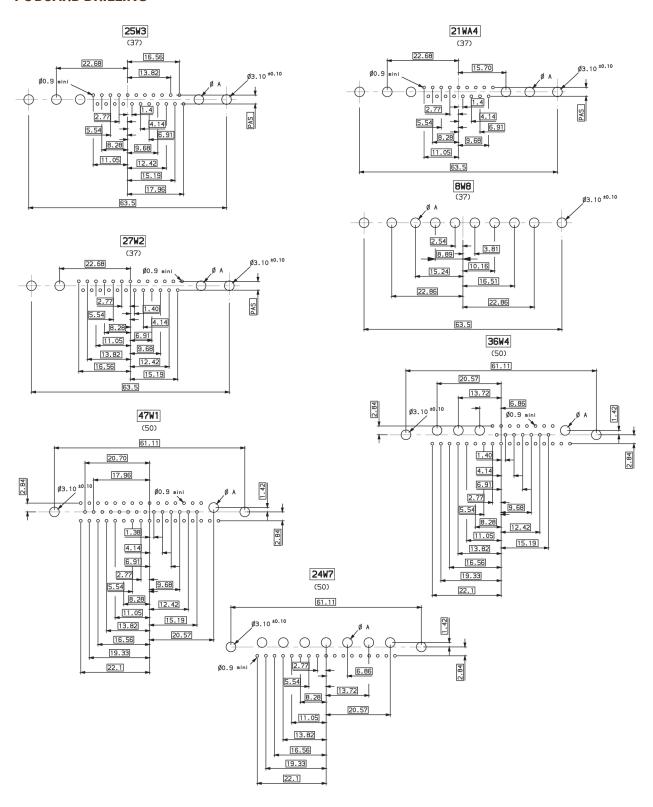






DIMENSIONS

PC BOARD DRILLING



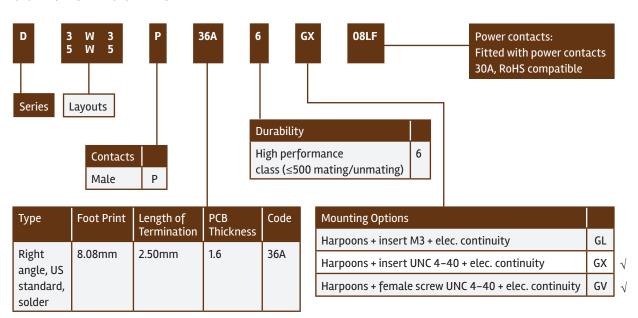
FULL POWER RIGHT ANGLE SOLDER TO BOARD

W UL Recognised File E 118235 (R)

 This monobloc insulator design with stamped and formed signal contacts combines performance and cost effectiveness

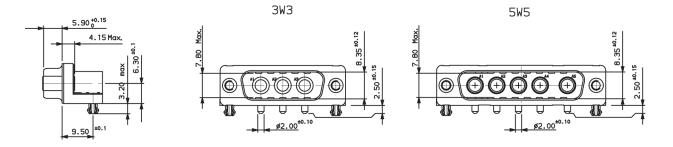


ORDERING INFORMATION



Preferred option $\sqrt{}$

SPECIFIC DIMENSIONS

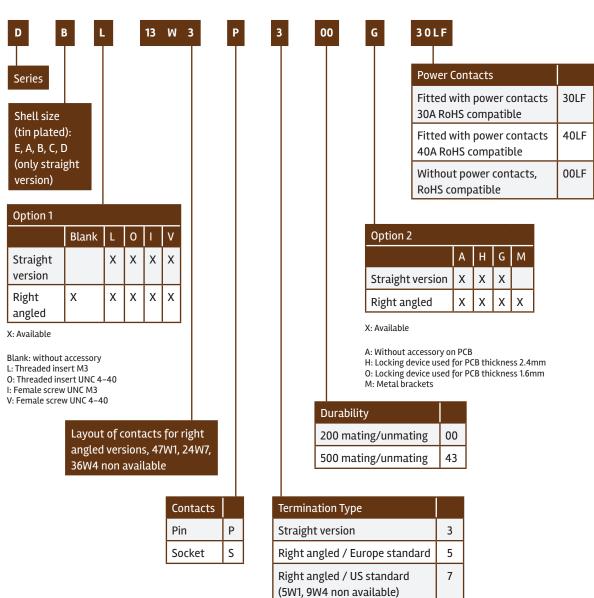


STRAIGHT AND RIGHT ANGLE PC BOARD VERSIONS

W UL Recognised File E 118235 (R)



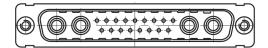
ORDERING INFORMATION

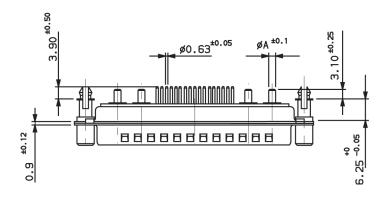


SPECIFIC DIMENSIONS

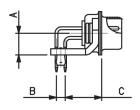
STRAIGHT VERSION

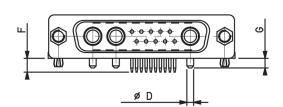
T	30A	40A
ØΑ	2.0	2.8

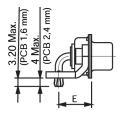




RIGHT ANGLE VERSION







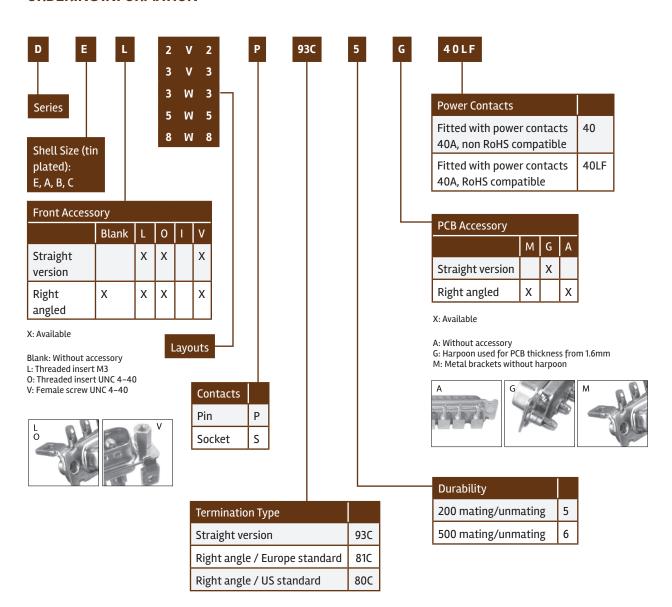
	Termination Type	Amp.	A±0.10	B ^{±0.20}	C ^{±0.20}	D ^{±0.10}	E ^{±0.20}	F ^{±0.50}	G ^{±0.30}
Europe	5	30A	7.20	2.54	10.30	2.00	11.65	4.00	3.60
		40A	7.20	2.54	10.30	2.80	11.65	4.00	3.60
U.S	7	30A	6.30	2.84	8.08	2.00	9.50	3.90	3.60

FULL POWER RIGHT ANGLE AND STRAIGHT PRESS-FIT

N UL Recognised File E 118235 (R)



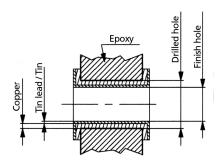
ORDERING INFORMATION



Preferred option $\sqrt{}$

SPECIFIC DIMENSIONS

METALIZED HOLE DIMENSIONS



			Press-fit Contacts	Press-fit Harpoons	
P.C.B hole	Drill diameter		Ø 3.22 ^{±0.03}	Ø 3.22 ^{±0.03}	Ø 3.22 ^{±0.03}
definition (note 1 and 2)		Drilled hole	Ø 3.19 – 3.25	Ø 3.19 – 3.25	
		Copper plating 25µm min. (recommended 50µ ma:		25μm min. (recommended 50μ max.)	
	non Tin-lead plating		15μm max. (recommended 5μ min.)	15μm max. (recommended 5μ min.)	
		Finish hole (after reflow)	Ø 3.02 – 3.20	Ø 3.02 – 3.20	
	RoHS	Tin plating	0.8 to 1.2μm	0.8 to 1.2μm	
		Finish hole (after reflow)	Ø 3.08 – 3.20	Ø 3.08 – 3.20	

Note 1: These dimensions must be respected to ensure press-fit pin performance

Note 2: According to IEC-352-S specification

Note 3: Vital requirement for press-fit pin performance

PRESS-FIT PERFORMANCE

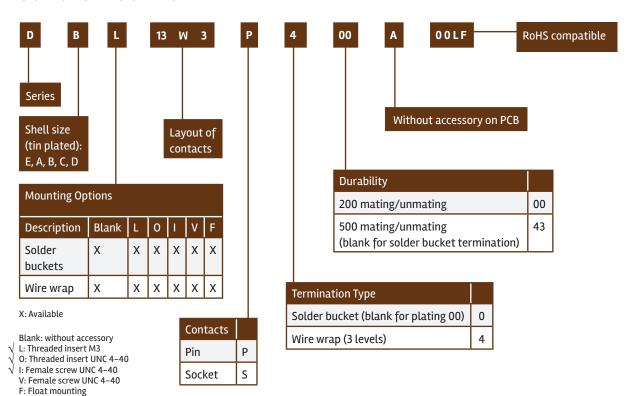
	Press-fit Contacts	Press-fit Harpoons				
Insertion force	≤200 N (average insertion 160 N)	≤200 N (average insertion 160 N)				
Extraction force	≥30 N	≥30 N				

MIXED AND FULL POWER CABLE CONNECTORS

N UL Recognised File E 118235 (R)



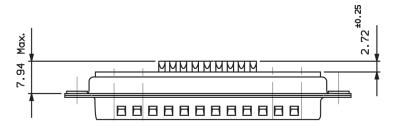
ORDERING INFORMATION



Preferred option $\sqrt{}$

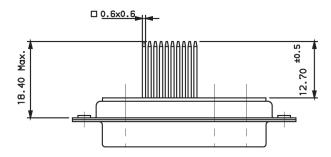
SPECIFIC DIMENSIONS

Solder Bucket



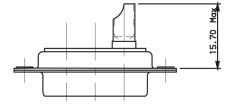
Wire Wrap

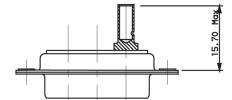
WW (3 levels)



Solder version

Crimp version

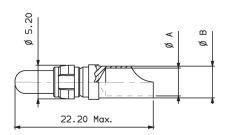




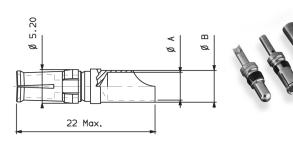
POWER SOLDER AND CRIMP CONTACTS

SOLDER CONTACTS

Male



Female



Туре	Max. Current	Clip	RoHS* Part	RoHS* Part	Wire		Strip	Ø A +0.1	Ø B +0.05
	Rating	Colour	Number ≥200 mating/ unmating	Number ≥500 mating/ unmating		Section mm²	length mm‡ ^{8.5}		
Male	10A	Black	8638PPS1005LF	8638PPS1006LF	16	1.3	7	1.7	2.6
Male	15A	White	8638PPS1505LF	8638PPS1506LF	14	1.9	7	2.1	3
Male	20A	Red	8638PPS2005LF	8638PPS2006LF	12	3.2	7	2.8	3.65
Male	40A	Blue	8638PPS4005LF	8638PPS4006LF	8	9	7	4.4	5
Female	10A	Black	8638PSS1005LF	8638PSS1006LF	16	1.3	7	1.7	2.6
Female	15A	White	8638PSS1505LF	8638PSS1506LF	14	1.9	7	2.1	3
Female	20A	Red	8638PSS2005LF	8638PSS2006LF	12	3.2	7	2.8	3.65
Female	40A	Blue	8638PSS4005LF	8638PSS4006LF	8	9	7	4.4	5

Clip material: Plastic withstanding 125°C

Termination plating: Matt tin

^{*}RoHS compatible EU directive 2002/95/EC

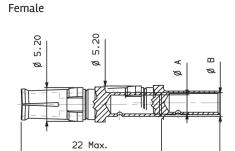
POWER SOLDER AND CRIMP CONTACTS

CRIMP CONTACTS

22.20 Max.

Male

Ø 5.20



Туре	Max. Current	Clip	RoHS* Part	RoHS* Part	Wire		Strip	Ø A *0.1	Ø B +0.05	
	Rating	Colour	Number ≥200 mating/ unmating	Number ≥500 mating/ unmating	Size	Section mm²	length mm ‡8.5			
Male	10A	Black	8638PPC1005LF	8638PPC1006LF	16 to 18	0.9 to 1.3	7	1.8	2.55	
Male	20A	Red	8638PPC1505LF	8638PPC1506LF	12 to 14	2 to 3	7	2.8	3.7	
Male	30A	White	8638PPC2005LF	8638PPC2006LF	9	6	7	3.75	4.65	
Male	40A	Blue	8638PPC4005LF	8638PPC4006LF	8 to 10	5 to 8	7	4.8	5.5	
Female	10A	Black	8638PSC1005LF	8638PSC1006LF	16 to 18	0.9 to 1.3	7	1.8	2.55	
Female	20A	Red	8638PSC1505LF	8638PSC1506LF	12 to 14	2 to 3	7	2.8	3.7	
Female	30A	White	8638PSC2005LF	8638PSC2006LF	9	6	7	3.75	4.65	
Female	40A	Blue	8638PSC4005LF	8638PSC4006LF	8 to 10	5 to 8	7	4.8	5.4	

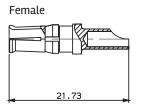
Clip material: Plastic withstanding 125°C

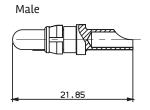
Termination plating: Matt tin

^{*}RoHS compatible EU directive 2002/95/EC

CONTACTS (OTHER VERSIONS)

POWER CONTACTS - METAL CLIP

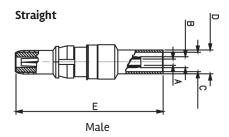


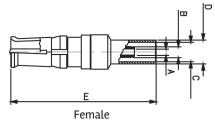


Wire	Max. Current	Part Numbers				
Size		Male	Female			
AWG8	40A	86303098NLF	86303099NLF			
AWG12	20A	86303056NLF	86303057NLF			
AWG14	15A	86303060NLF	86303061NLF			
AWG16	10A	86303064NLF	86303065NLF			

Durability: 500 mating/unmating

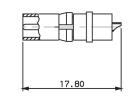
COAXIAL CONTACTS





HIGH VOLTAGE CONTACTS

Male 86382000LF



Female 86382001LF

Colors: Blue

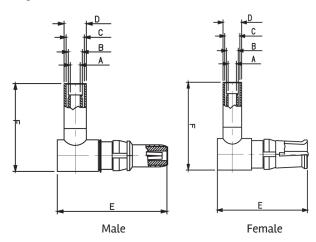
White

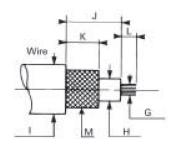
These removable contacts are suitable for the contact cavities of the DMW series and DW series.

The coxial contacts are in compliance with:

- NFC 93569
- KMX4 specification

Angled







TECHNICAL INFORMATION

ELECTRICAL PERFORMANCE

• Dielectric with standing voltage: 2800V RMS

• Break down voltage: 3200V RMS

• Insulation resistance: $10^6 M\Omega$

• Contact resistance: $\leq 5m\Omega$

• Max. current rating: 5A

• Material: TEFLON

ENVIRONMENTAL

- Operating temperature range: -55° C to $+125^{\circ}$ C

MECHANICAL PERFORMANCE

• Mating force per set of contact: 3 N

• Mating endurance: 200

CONTACTS (OTHER VERSIONS)

STANDARD COAXIAL CONTACTS

Contact Type		Part Numbers				Conta	cts Dime	ension			
		Soldered Screen	NFC 93569 KMX4	Crimped Screen	NFC 93569 KMX4	A±0.10	B±0.15	C±0.2	D±0.15	E ^{±0.4}	F±0.4
Straight	male	DM537405000NCLF	KMX4M11D02	DM53740NCLF	KMXM12D02	1	1.75	2.32	3.20	23.60	
	male	DM537405008NCLF	-	-	-					21.80	
	female	DM537425000NCLF	KMX4F11D02	DM53742NCLF	KMX4F12D02					23.60	
	female	DM537425006NCLF	-	-	-					21.80	
Right angle	male	DM537415000NCLF	KMX4M11C02	DM53741NCLF	KMX4M12C02					18.64	15.30
	female	DM537435000NCLF	KMX4F11C02	DM537432NCLF	KMX4F12C02					18.64	15.30
Straight	male	DM537405001NCLF	KMX4M11D01	DM537401NCLF	KMX4M12D01	1.70	2.46	3	3.84	23.60	
	female	DM537425001NCLF	KMX4F11D01	DM537421NCLF	KMX4F12D01					23.60	
Right angle	male	DM537415001NCLF	KMX4M11C01	DM537411NCLF	KMX4M12C01					18.64	15.30
	female	DM537435001NCLF	KMX4F11C01	DM537433NCLF	KMX4F12C01					18.64	12.50

SPECIFIC COAXIAL CONTACTS

Contact Type		Part Numbers	Part Numbers				Contacts Dimension				
		Soldered Screen	NFC 93569 KMX4	Crimped Screen	NFC 93569 KMX4	A ^{±0.10}	B±0.15	C±0.2	D±0.15	E ^{±0.4}	F±0.4
Straight	male	DM537405002NCLF	-	DM537403NCLF	-	2.75	4.40	5.45	5.95	26.30	
	female	DM537425002NCLF	-	DM537423NCLF	-					26.30	
Straight	male	DM537405005NCLF	-	DM537405NCLF	-	3.15	4.40	5.45	5.95	23.60	
	female	DM537425004NCLF	-	DM537425NCLF	-					23.60	
Right angle	female	DM537435004NCLF	-	DM537436NCLF	-					18.64	17.50

STANDARD COAXIAL CONTACTS

Contact Type		Part Numbers	Cable					
		Soldered Screen	NFC 93569 KMX4	Crimped Screen	NFC 93569 KMX4	MILC 17E	NFC 93550	Impe- dance
Straight	male	DM537405000NCLF KMX4M11D02 DM53740NCLF KMXM12D02		KMXM12D02	RG178BU	KX21A	50Ω ±2	
	male	DM537405008NCLF	-	-	-			
	female	DM537425000NCLF	KMX4F11D02	DM53742NCLF	KMX4F12D02			
	female	DM537425006NCLF	-	-	-			
Right angle	male	DM537415000NCLF	KMX4M11C02	DM53741NCLF	KMX4M12C02			
	female	DM537435000NCLF	KMX4F11C02	DM537432NCLF	KMX4F12C02			
Straight	male	DM537405001NCLF	KMX4M11D01	DM537401NCLF	KMX4M12D01	RG316U	KX22A	50Ω ^{±2}
	female	DM537425001NCLF	KMX4F11D01	DM537421NCLF	KMX4F12D01			
Right angle	male	male DM537415001NCLF KMX4M11C01 DM537411NCLF KMX4		KMX4M12C01				
	female	DM537435001NCLF	KMX4F11C01	DM537433NCLF	KMX4F12C01			

Contact Type		Part Numbers				Wire						
		Soldered Screen	NFC 93569 KMX4	Crimped Screen	NFC 93569 KMX4	G	Н	I	J	К	L	M (max.)
Straight	male	DM537405000NCLF	KMX4M11D02	DM53740NCLF	KMXM12D02	0.30	0.90	1.80	7.90	6.35	2	1.40
	male	DM537405008NCLF	-	-	-							
	female	DM537425000NCLF	KMX4F11D02	DM53742NCLF	KMX4F12D02							
	female	DM537425006NCLF	-	-	-							
Right angle	male	DM537415000NCLF	KMX4M11C02	DM53741NCLF	KMX4M12C02				9.50	5.95	1.60	
	female	DM537435000NCLF	KMX4F11C02	DM537432NCLF	KMX4F12C02							
Straight	male	DM537405001NCLF	KMX4M11D01	DM537401NCLF	KMX4M12D01	0.50	1.50	2.50	7.90	6.35	2.00	2.05
	female	DM537425001NCLF	KMX4F11D01	DM537421NCLF	KMX4F12D01							
Right angle	male	DM537415001NCLF	KMX4M11C01	DM537411NCLF	KMX4M12C01				9.50	5.95	1.60	
	female	DM537435001NCLF	KMX4F11C01	DM537433NCLF	KMX4F12C01							

SPECIFIC COAXIAL CONTACTS

Contact Ty	pe	Part Numbers	Cable					
		Soldered Screen	NFC 93569 KMX4	Crimped Screen			NFC 93550	Impe- dance
Straight	male	DM537405002NCLF	-	DM537403NCLF	-	RG180BU		95Ω ±2
	female	DM537425002NCLF	-	DM537423NCLF	-			
Straight	male	DM537405005NCLF	-	DM537405NCLF	-	RG58CU	KX15	50Ω ^{±2}
	female	DM537425004NCLF	-	DM537425NCLF	-			
Right angle	female	DM537435004NCLF	-	DM537436NCLF	-			

Contact Type		Part Numbers				Wire						
		Soldered Screen	NFC 93569 KMX4	Crimped Screen	NFC 93569 KMX4	G	Н	1	J	К	L	M (max.)
Straight	male	DM537405002NCLF	-	DM537403NCLF	-	0.30	2.60	3.58	9.70	7.90	2	3.14
	female	DM537425002NCLF	-	DM537423NCLF	-							
Straight	male	DM537405005NCLF	-	DM537405NCLF	-	0.90	2.95	4.95	9.50	7.90	2	3.81
	female	DM537425004NCLF	-	DM537425NCLF	-							
Right angle	female	DM537435004NCLF	-	DM537436NCLF	-				10.70		2.40	

μTCA – HIGH POWER I/O PCB CONNECTORS

OVERVIEW

This power module I/O connectors for 48V applications are designed in accordance with μTCA specifications. The robust D-Subminiature concept based on simplified and cost effective Delta D design combines power contacts able to handle up to 24A with signal contacts. PCB connectors are proposed in traditional solder-to-board and Pin-in-Paste versions for optimized applied cost. Specific to the design of FCI is the fact that the connector's compact footprint allows for more space on the PCB for other components.

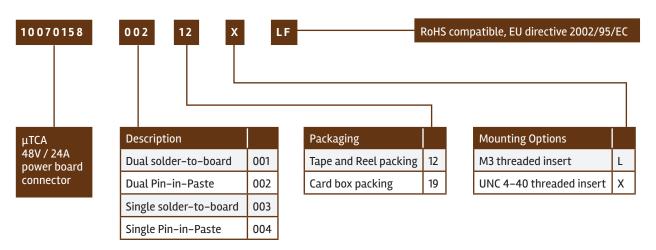




FEATURES

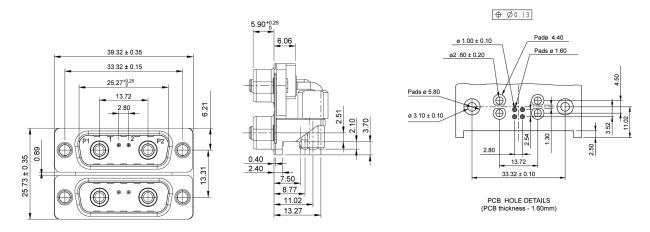
- 48V / 24A (shell size A)
- FMLB (First Mate Last Brake) functionality for hot plugging
- · Field reparable

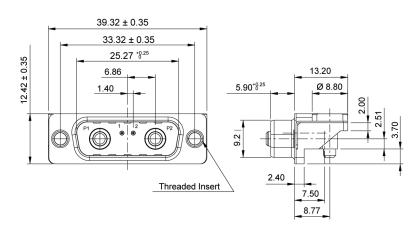
ORDERING INFORMATION

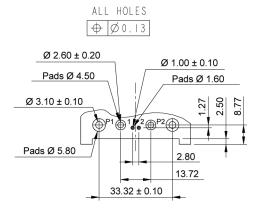


μTCA – HIGH POWER I/O PCB CONNECTORS

PRODUCT DRAWING







PCB drill & recommended pad details (PCB thickness - 1.6mm)

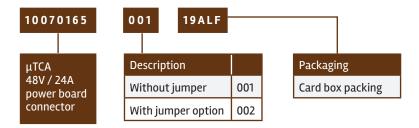
μTCA – HIGH POWER I/O CABLE CONNECTORS

FEATURES

- · Field reparable
- · Touch proof
- Stackable hoods with high retention devices
- · Cost saving jumper option for signal contacts



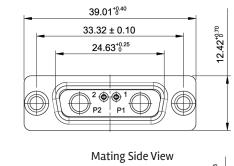
ORDERING INFORMATION

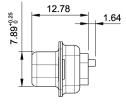


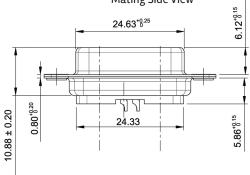
POWER CONTACTS

Description	Part Number				
30A crimp contacts	8638PSC3005LF				
40A solder bucket contacts	8638PSS4005LF				

PRODUCT DRAWING

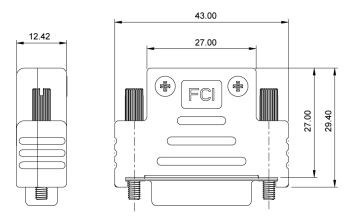






μTCA – HIGH POWER I/O CABLE CONNECTORS

HOOD (STACKABLE HOOD AND SLIM DESIGN)



Description	Part Number
HOOD (stackable hood and slim design)	10070163 - 001LF