



Size 22 Contacts,
Removable Crimp and
Solder Printed Board Mount

Two Performance Levels For
Best Cost / Performance Ratio

UL Recognized
File #E49351

CSA Recognized
File #LR54219

Telecommunication
UL File #E140980



ODD series connectors are professional / industrial quality high density connectors recommended for use in sheltered, non-corrosive indoor environments having normal ventilation. ODD series connectors utilize precision machined, removable contacts having closed barrel crimp terminations and solder cup wire terminations. For printed board mount application, straight solder printed board mount and right angle (90°) angled solder

terminations are available.

Six standard contact variants are offered in arrangements of 15, 26, 44, 62, 78, and 104 contacts. ODD series connectors are mateable and compatible with other high density D-subminiature connectors conforming to MIL-DTL-24308, and are UL and CSA recognized. A wide variety of unique accessories are available.

ODD SERIES TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

Insulators:	Glass filled polyester per ASTM D5927, UL 94V-0, black color.
Contacts:	Precision machined copper alloy.
Contact Plating:	Professional quality - gold flash over nickel plate. Other finishes available upon request.
Interfacial Seal:	Thermoplastic Elastomer (TPE), Santoprene™ or equivalent.
Shells:	Steel with tin plate; zinc plate or stainless steel passivated. Other materials and finishes available upon request.
Mounting Spacers:	Nylon; copper alloy or steel with zinc plate or tin plate; phosphor bronze with tin plate; stainless steel, passivated.
Vibration Lock Systems:	Slide lock and lock tabs, steel with nickel plate.
Push-On Fasteners:	Phosphor bronze or beryllium copper with tin plate.
Jackscrew Systems:	Brass or steel with zinc plate or clear zinc plate or tin plate; stainless steel, passivated.
Hoods:	Composite and plastic, UL 94V-0; brass or steel with zinc plate. Aluminum; aluminum with electroless nickel plate. For aluminum hoods, zinc content is 1% maximum. Die cast zinc.

Low magnetic versions are available, contact Technical Sales.

MECHANICAL CHARACTERISTICS:

Removable Contacts:	Insert contact to rear face of insulator and release from rear face of insulator. Size 22 contact, male - 0.030 inch [0.76mm] mating diameter. Female - rugged open entry design.
Fixed Contacts, Board Mounted Applications:	Female open entry contacts
Contact Retention In Insulator:	9 lbs. [40 N].

Contact Terminations:	Closed barrel crimp, wire sizes 22 AWG [0.3mm ²] through 30 AWG [0.05mm ²]. Solder cup wire, 0.035 inch [0.89mm] hole diameter for 22 AWG [0.3mm ²] wire maximum. 0.020 inch [0.5mm] or 0.030 inch [0.76mm] termination diameter straight and Right Angle (90°) printed board mount contact terminations.
Shells:	Male shells may be dimpled for EMI/ESD ground paths.
Polarization:	Trapezoidally shaped shells and polarized jackscrews.
Mounting To Angle Brackets:	Jackscrews and riveted fasteners with 0.120 inch [3.05mm] clearance hole, and threaded riveted fasteners with 4-40 threads and polyester lock inserts.
Mounting To Printed Board:	Rapid installation push-on fasteners and mounting posts.
Locking Systems:	Jackscrews and vibration locking systems.
Mechanical Operations:	500 operations minimum per IEC 60512-5 for open entry female contact.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating:	
Open Entry Contacts:	5 amperes nominal
Initial Contact Resistance:	0.010 ohms maximum for open entry.
Proof Voltage:	1000 V r.m.s.
Insulation Resistance:	5 G ohms.
Clearance and Creepage Distance [minimum]:	0.042 inch [1.06mm].
Working Voltage:	300 V r.m.s.

CLIMATIC CHARACTERISTICS:

Temperature Range:	-55°C to +125°C.
Damp Heat, Steady State:	10 days.



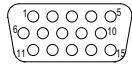
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PROFESSIONAL / INDUSTRIAL QUALITY
FIXED AND REMOVABLE CONTACTS
HIGH DENSITY D-SUBMINIATURE

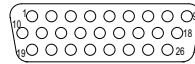
D-Sub

CONTACT VARIANTS

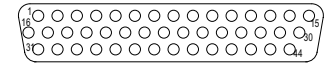
FACE VIEW OF MALE OR REAR VIEW OF FEMALE



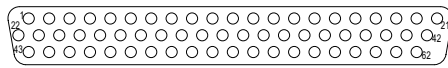
ODD 15



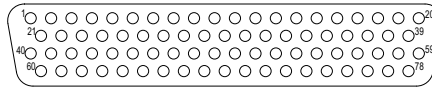
ODD 26



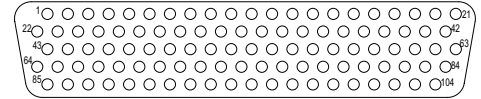
ODD 44



ODD 62

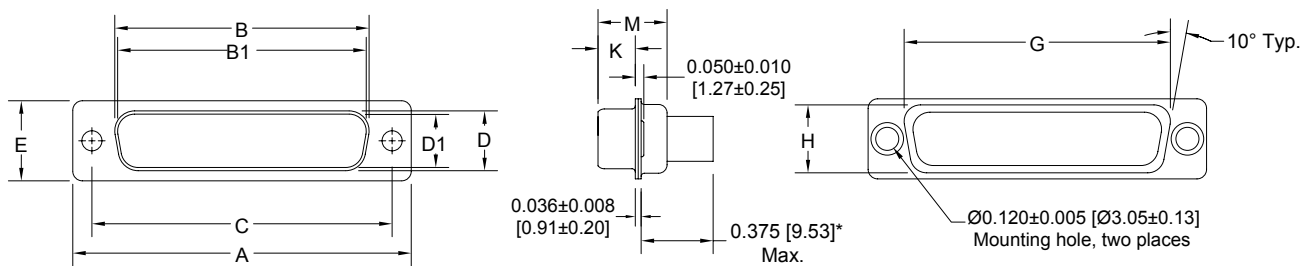


ODD 78

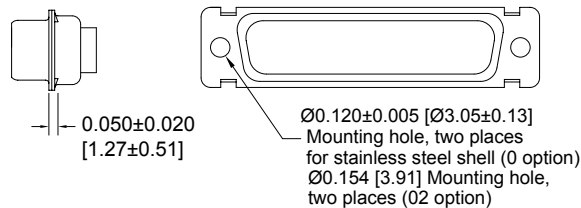


ODD 104

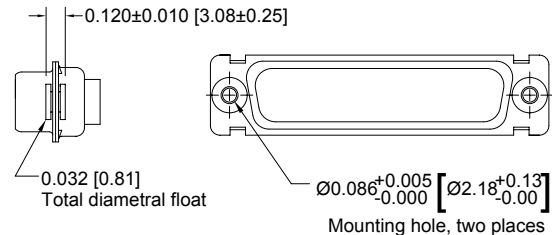
STANDARD SHELL ASSEMBLY



OPTIONAL SHELL ASSEMBLY [0, 02]



OPTIONAL SHELL ASSEMBLY WITH UNIVERSAL FLOAT MOUNTS [F]



CONNECTOR VARIANT SIZES	A ± 0.015 [0.38]	B ± 0.005 [0.13]	B1 ± 0.005 [0.13]	C ± 0.005 [0.13]	D ± 0.005 [0.13]	D1 ± 0.005 [0.13]	E ± 0.015 [0.38]	G ± 0.010 [0.25]	H ± 0.010 [0.25]	K ± 0.005 [0.13]	M ± 0.010 [0.25]
ODD 15 M	1.213 [30.81]		0.666 [16.92]	0.984 [24.99]		0.329 [8.36]	0.494 [12.55]	0.759 [19.28]	0.422 [10.72]	0.233 [5.92]	0.422 [10.72]
ODD 15 F ODD 15 S	1.213 [30.81]	0.643 [16.33]		0.984 [24.99]	0.311 [7.90]		0.494 [12.55]	0.759 [19.28]	0.422 [10.72]	0.243 [6.17]	0.429 [10.90]
ODD 26 M	1.541 [39.14]		0.994 [25.25]	1.312 [33.32]		0.329 [8.36]	0.494 [12.55]	1.083 [27.51]	0.422 [10.72]	0.233 [5.92]	0.422 [10.72]
ODD 26 F ODD 26 S	1.541 [39.14]	0.971 [24.66]		1.312 [33.32]	0.311 [7.90]		0.494 [12.55]	1.083 [27.51]	0.422 [10.72]	0.243 [6.17]	0.429 [10.90]
ODD 44 M	2.088 [53.04]		1.534 [38.96]	1.852 [47.04]		0.329 [8.36]	0.494 [12.55]	1.625 [41.28]	0.422 [10.72]	0.230 [5.84]	0.426 [10.82]
ODD 44 F ODD 44 S	2.088 [53.04]	1.511 [38.38]		1.852 [47.04]	0.311 [7.90]		0.494 [12.55]	1.625 [41.28]	0.422 [10.72]	0.243 [6.17]	0.429 [10.90]
ODD 62 M	2.729 [69.32]		2.182 [55.42]	2.500 [63.50]		0.329 [8.36]	0.494 [12.55]	2.272 [57.71]	0.422 [10.72]	0.230 [5.84]	0.426 [10.82]
ODD 62 F ODD 62 S	2.729 [69.32]	2.159 [54.84]		2.500 [63.50]	0.311 [7.90]		0.494 [12.55]	2.272 [57.71]	0.422 [10.72]	0.243 [6.17]	0.429 [10.90]
ODD 78 M	2.635 [66.93]		2.079 [52.81]	2.406 [61.11]		0.441 [11.20]	0.605 [15.37]	2.178 [55.32]	0.534 [13.56]	0.230 [5.84]	0.426 [10.82]
ODD 78 F ODD 78 S	2.635 [66.93]	2.064 [52.43]		2.406 [61.11]	0.423 [10.74]		0.605 [15.37]	2.178 [55.32]	0.534 [13.56]	0.243 [6.17]	0.429 [10.90]
ODD 104 M	2.729 [69.32]		2.212 [56.18]	2.500 [63.50]		0.503 [12.78]	0.668 [16.97]	2.302 [58.47]	0.596 [15.14]	0.230 [5.84]	0.426 [10.82]
ODD 104 F ODD 104 S	2.729 [69.32]	2.189 [55.60]		2.500 [63.50]	0.485 [12.32]		0.668 [16.97]	2.302 [58.47]	0.596 [15.14]	0.243 [6.17]	0.429 [10.90]

DIMENSIONS ARE IN INCHES [MILLIMETERS].
34 ALL DIMENSIONS ARE SUBJECT TO CHANGE.

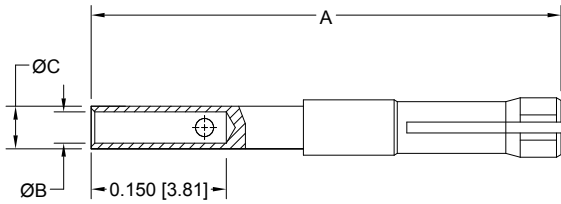


**REMOVABLE CRIMP CONTACTS
CODE 1**

CONTACTS MAY BE SUPPLIED WITH CONNECTOR OR ORDERED SEPARATELY.

Note: Connectors can be kitted with all applicable crimp/solder contacts, contact Technical Sales for connector part number.

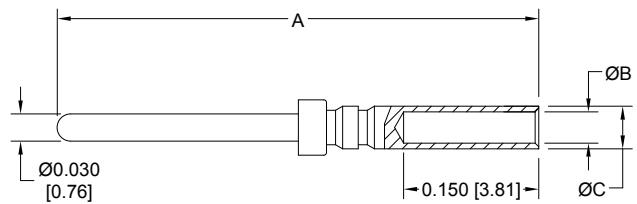
FEMALE CONTACT



Part Number: FC8122D

FEMALE PART NUMBER	WIRE SIZE AWG/[mm ²]	A	ØB	ØC
FC8122D	22 / 24 / 26 / 28 / 30 [0.3/0.25/0.12/0.08/0.05]	0.529 [13.44]	0.035 [0.89]	0.047 [1.19]

MALE CONTACT



Part Number: MC8022D

MALE PART NUMBER	WIRE SIZE AWG/[mm ²]	A	ØB	ØC
MC8022D	22 / 24 / 26 / 28 / 30 [0.3/0.25/0.12/0.08/0.05]	0.531 [13.49]	0.035 [0.89]	0.047 [1.19]

PLATING:

STANDARD FINISH: Gold flash over nickel plate.

OPTIONAL FINISHES: 0.000030 [0.76] gold over nickel by adding "-14" suffix onto part number. Example: FC8122D-14

For information regarding crimp tools & crimping tool techniques, see page 69.

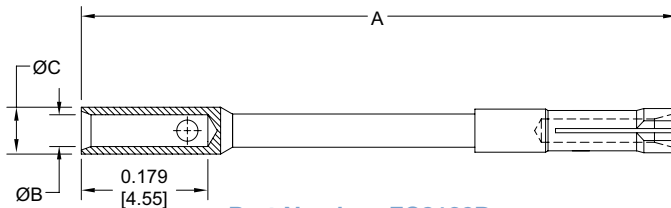


REMOVABLE CRIMP CONTACTS
20 AWG CONTACTS

20 AWG [0.5 mm²]

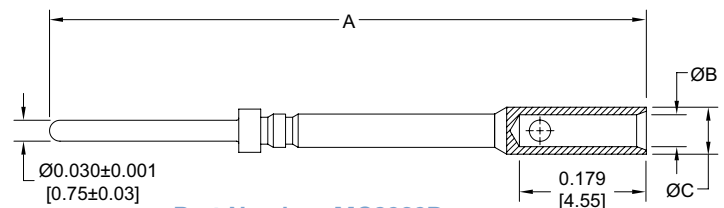
CONTACTS MAY BE SUPPLIED WITH CONNECTOR OR ORDERED SEPARATELY.

***FEMALE CONTACT**



Part Number: FC8120D

MALE CONTACT



Part Number: MC8020D

FEMALE PART NUMBER	WIRE SIZE AWG/[mm ²]	A	ØB	ØC
FC8120D	20 [0.5] max	0.852 [21.64]	0.045 [1.14]	0.066 [1.68]

MALE PART NUMBER	WIRE SIZE AWG/[mm ²]	A	ØB	ØC
MC8020D	20 [0.5] max	0.853 [21.66]	0.045 [1.14]	0.066 [1.68]

PLATING:

STANDARD FINISH: Gold flash over nickel plate.

OPTIONAL FINISHES: 0.000030 [0.76] gold over nickel by adding "-14" suffix onto part number. Example: FC8120D-14

The crimp area of this contact is not protected when fully seated in the connector molding. These contacts require shrink tubing after installation. Wire cannot be removed from molding after insertion. Not suitable for fully loaded connector.

Note: Connectors can be kitted with all applicable crimp/solder contacts, contact Technical Sales for connector part number.

ODD SERIES

For information regarding crimp tools & crimping tool techniques, see page 69.

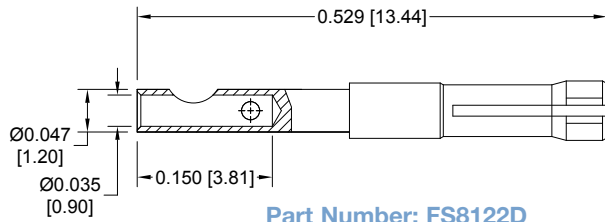


REMOVABLE SOLDER CUP CONTACTS
CODE 2

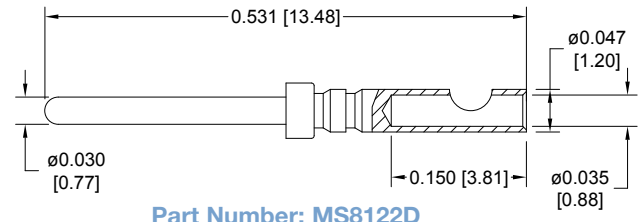
CONTACTS MAY BE SUPPLIED WITH CONNECTOR OR ORDERED SEPARATELY.

Note: Connectors can be kitted with all applicable crimp/solder contacts, contact Technical Sales for connector part number.

FEMALE CONTACT



MALE CONTACT



PLATING:

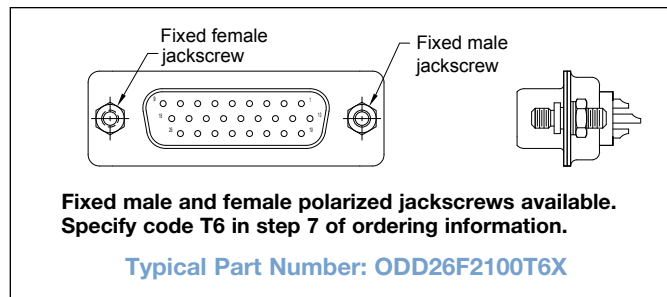
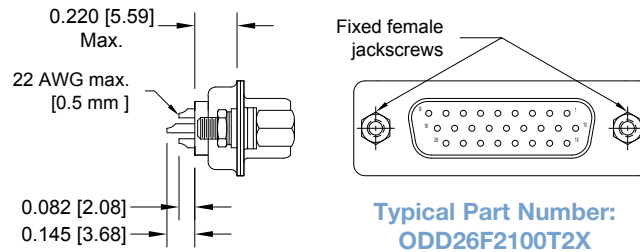
STANDARD FINISH: Gold flash over nickel plate.

OPTIONAL FINISHES: 0.000030 [0.76] gold over nickel by adding "-14" suffix onto part number. Example: FS8122D-14

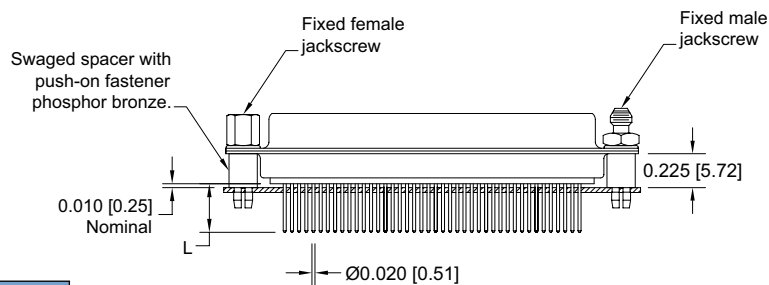
For information regarding crimp tools & crimping tool techniques, see page 69.



FIXED SOLDER CUP TERMINATION CODE 21



STRAIGHT PRINTED BOARD MOUNT TERMINATION CODE 3 AND 32



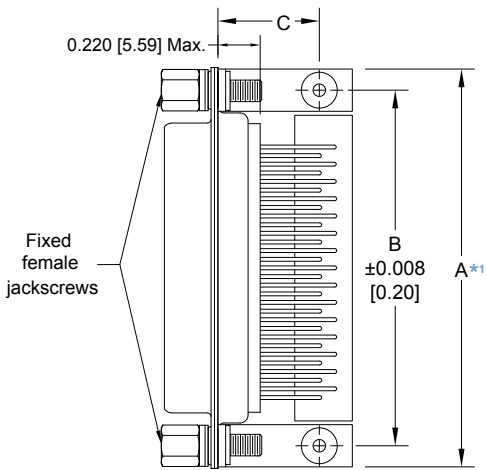
Code No.	L
3	0.150 [3.81]
32	0.300 [7.62]

Typical Part Number: **ODD62F3S60T6X**

For straight printed board mount contacts specify code no. in step 4 of ordering information

RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION

CODE 5, 0.450 [11.43] CONTACT EXTENSION

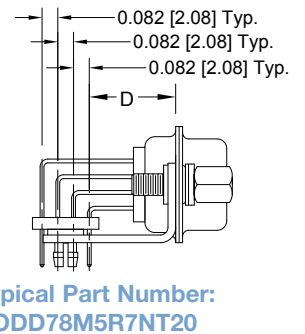
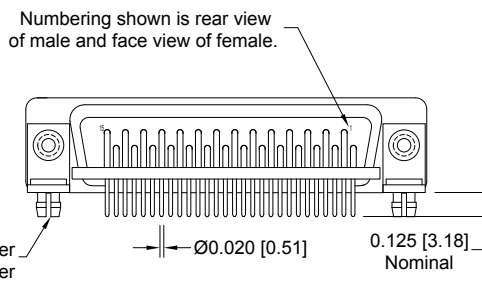
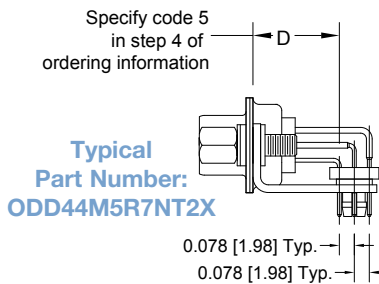


ODD**5**** 0.450 [11.43] CONTACT EXTENSION				
PART NUMBER	A*1	B	C	D
ODD15*5****	1.204 [30.58]	0.984 [24.99]	0.528 [13.41]	0.450 [11.43]
ODD26*5****	1.532 [38.91]	1.312 [33.32]	0.528 [13.41]	0.450 [11.43]
ODD44*5****	2.072 [52.63]	1.852 [47.04]	0.528 [13.41]	0.450 [11.43]
ODD62*5****	2.720 [69.09]	2.500 [63.50]	0.528 [13.41]	0.450 [11.43]
ODD78*5****	2.626 [66.70]	2.406 [61.11]	0.573 [14.55]	0.450 [11.43]

See next page for size 104 Right Angle (90°) Connectors.

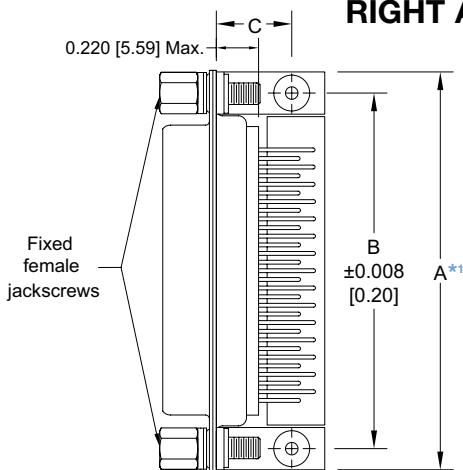
NOTE:

*1 "A" dimension applies for metal angle brackets only. Consult Accessories D-subminiature catalog for "A" dimension when plastic brackets are used.



RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION

CODE 4, 0.314 [7.98] CONTACT EXTENSION

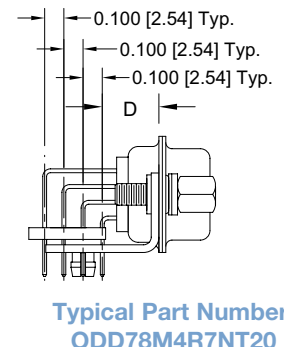
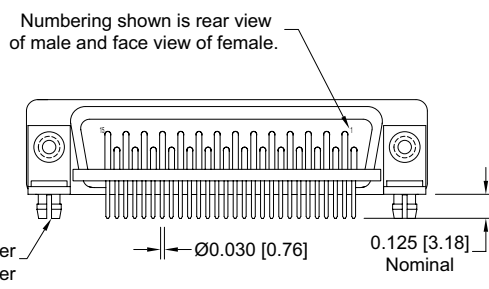
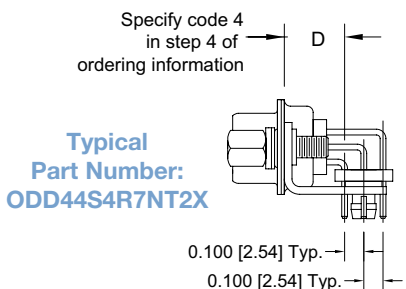


ODD**4**** 0.314 [7.98] CONTACT EXTENSION				
PART NUMBER	A*1	B	C	D
ODD15*4****	1.204 [30.58]	0.984 [24.99]	0.414 [10.52]	0.314 [7.98]
ODD26*4****	1.532 [38.91]	1.312 [33.32]	0.414 [10.52]	0.314 [7.98]
ODD44*4****	2.072 [52.63]	1.852 [47.04]	0.414 [10.52]	0.314 [7.98]
ODD62*4****	2.720 [69.09]	2.500 [63.50]	0.414 [10.52]	0.314 [7.98]
ODD78*4****	2.626 [66.70]	2.406 [61.11]	0.414 [10.52]	0.314 [7.98]

See next page for size 104 Right Angle (90°) Connectors.

NOTE:

*1 "A" dimension applies for metal angle brackets only. Consult Accessories D-subminiature catalog for "A" dimension when plastic brackets are used.





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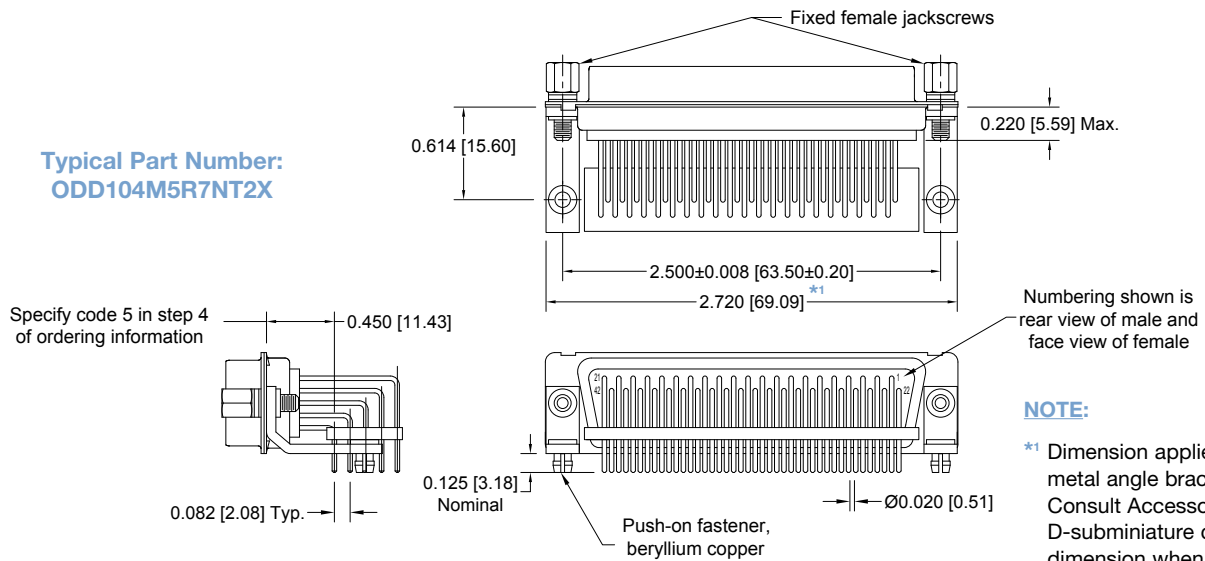
PROFESSIONAL / INDUSTRIAL QUALITY
FIXED AND REMOVABLE CONTACTS
HIGH DENSITY D-SUBMINIATURE

D-Sub

RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION

CODE 5, 0.450 [11.43] CONTACT EXTENSION
CONTACT VARIANT 104

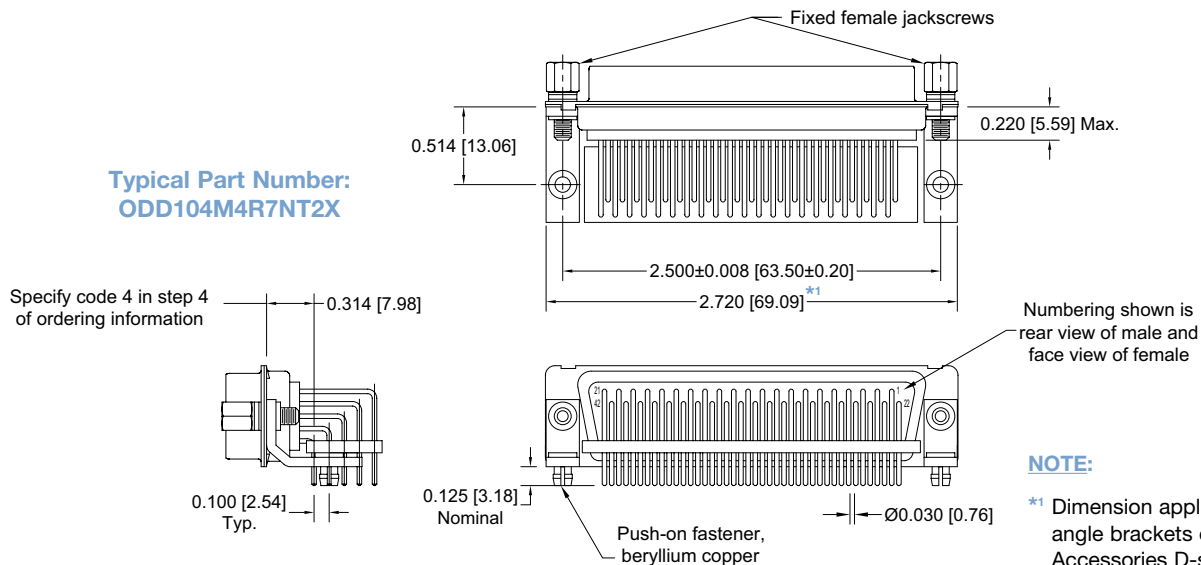
Typical Part Number:
ODD104M5R7NT2X



RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION

CODE 4, 0.314 [7.98] CONTACT EXTENSION
CONTACT VARIANT 104

Typical Part Number:
ODD104M4R7NT2X



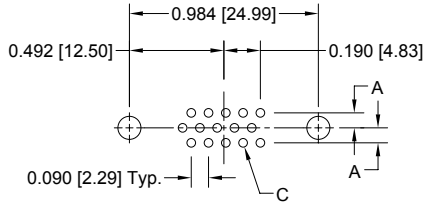


RIGHT ANGLE (90°) AND STRAIGHT PRINTED BOARD CONTACT HOLE PATTERN

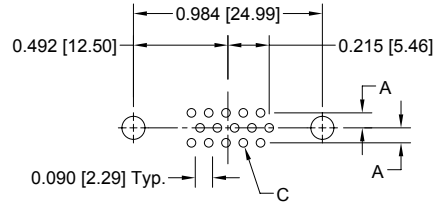
MOUNT CONNECTOR WITH MATING FACE POSITIONED TO FOLLOW DIRECTION OF ARROWS.

Contact Technical Sales for hole dimensions using lead-free solder.

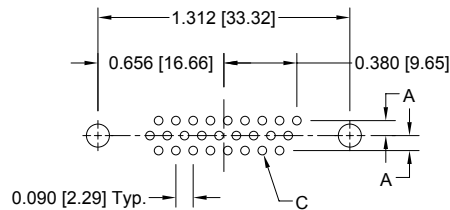
ODD15 MALE



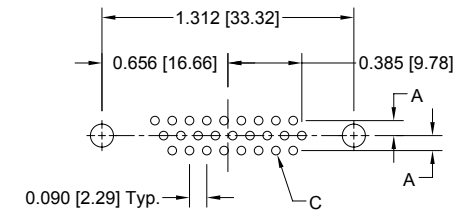
ODD15 FEMALE



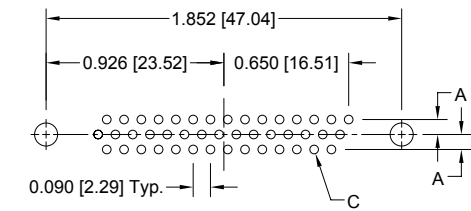
ODD26 MALE



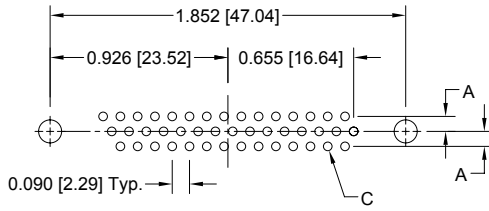
ODD26 FEMALE



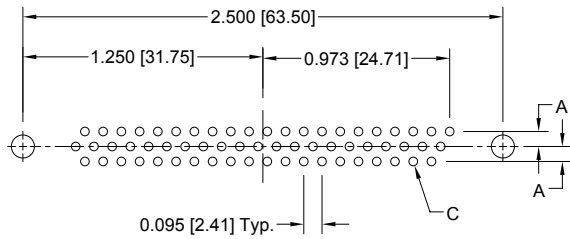
ODD44 MALE



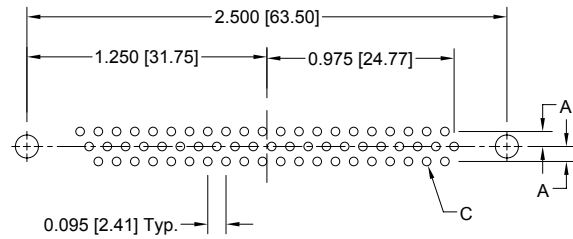
ODD44 FEMALE



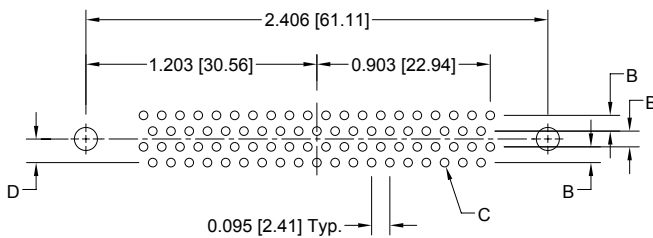
ODD62 MALE



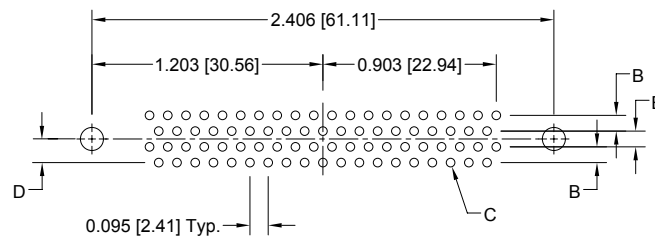
ODD62 FEMALE



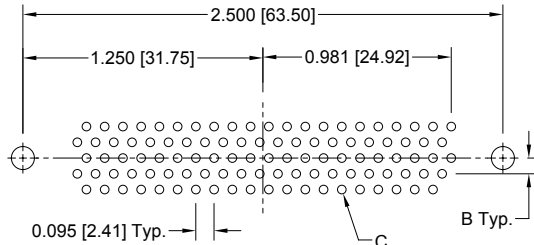
ODD78 MALE



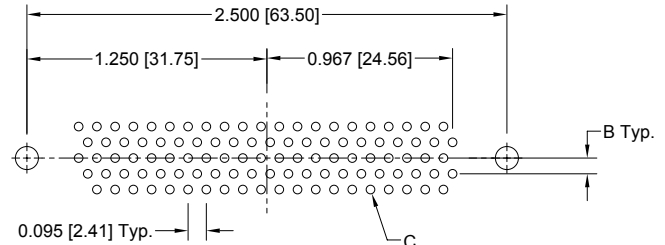
ODD78 FEMALE



ODD104 MALE



ODD104 FEMALE



CODE NUMBER	A	B	ØC	D
4	0.100 [2.54]	0.100 [2.54]	0.045 [1.14]	0.100 [2.54]
3, 32, 5	0.078 [1.98]	0.082 [2.08]	0.035 [0.89]	0.123 [3.12]

SUGGESTED PRINTED BOARD HOLE SIZES:

Suggest 0.123 ±0.003 [3.12 ±0.08] Ø hole for mounting connector with push-on fasteners.



ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Selecting An Option From Step 1 Through 8

STEP	1	2	3	4	5	6	7	8	9	10
EXAMPLE	ODD	62	F	5	R7	N	T6	S	/AA	-14
STEP 1 - BASIC SERIES ODD series										STEP 10 - SPECIAL OPTIONS -14 - 0.000030 [0.76µ] gold over nickel. CONTACT TECHNICAL SALES FOR SPECIAL OPTIONS
STEP 2 - CONNECTOR VARIANTS 15, 26, 44, 62, 78, 104**										STEP 9 - ENVIRONMENTAL COMPLIANCE OPTIONS /AA - RoHS Compliant NOTE: If compliance to environmental legislation is not required, this step will not be used. Example: ODD62F5R7NT6S
STEP 3 - CONNECTOR GENDER M - Male P - Male with interfacial seal F - Female - Professional level open entry contacts										STEP 8 - Shell Options 0 - Zinc plated. S - Stainless steel, passivated. X - Tin plated. Z - Tin plated and dimpled (male connectors only).
STEP 4 - CONTACT TERMINATION TYPE 0 - Contacts ordered separately, see pages 40-42. 1 - Crimp, 22 AWG-30 AWG [0.3mm ² -0.05mm ²]. 2 - Removable, solder cup, 22 AWG-30 AWG [0.3mm ² -0.05mm ²]. 21 - Fixed, solder cup, 22 AWG-30 AWG [0.3mm ² -0.05mm ²]. 3 - Solder, straight printed board mount with 0.150 [3.81] tail length. 32 - Solder, straight printed board mount with 0.300 [7.62] tail length. 4 - Solder, right angle (90°) printed board mount with 0.314 [7.98] contact extension. 5 - Solder, right angle (90°) printed board mount with 0.450 [11.43] contact extension.										*1 STEP 7 - LOCKING AND POLARIZING SYSTEMS 0 - None. *3 V3 - Lock tab, connector front panel mounted. *3 V5 - Lock tab, connector rear panel mounted. *3 VL - Lock lever, used with hoods Only. T - Fixed female jackscrews. T2 - Fixed female jackscrews. T6 - Fixed male and female polarized jackscrews. E - Rotating male jackscrews. E2 - Rotating male screw locks. E3 - Rotating male with internal hex for 3/32 hex drives E6 - Rotating male and female polarized jackscrews.
*1 STEP 5 - MOUNTING STYLE 0 - Mounting hole, 0.120 [3.05] Ø. 02 - Mounting hole, 0.154 [3.91] Ø. B3 - Bracket, mounting, right angle (90°) metal with cross bar. B8** - Bracket, mounting, right angle (90°) plastic with cross bar. F - Float mounts, universal. P - Threaded post, brass, 0.225 [5.71] length. P2 - Threaded post, nylon, 0.225 [5.71] length. R2 - Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 thread fixed female jackscrews with cross bar. R6 - Bracket, mounting, right angle (90°) metal, swaged to connector with 0.120 [3.05] Ø mounting hole with cross bar. R7 - Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 threads with cross bar. R8 - Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 locknut with cross bar. S - Swaged spacer, 4-40 threads, 0.225 [5.71] length. S2 - Swaged spacer, 4-40 threads, 0.125 [3.18] length. S5 - Swaged locknut, 4-40 threads. S6 - Swaged spacer with push-on fasteners, 4-40 threads, 0.225 [5.71] length. S7 - Swaged spacer with push-on fastener for use with ferrite inductor, 4-40 threads, 0.375 [9.53] length.										*1 STEP 6 - HOODS 0 - None. J - Hood, top opening, plastic. L - Hood, side opening, plastic. Y - Hood, top opening, plastic with rotating male jackscrews. Available in size 78 and 104 only. Y6 - Hood, top opening, plastic with rotating male and female polarized jackscrews. Available in size 78 and 104 only. Z - Hood, top or side opening, robust extended height, composite and plastic with rotating male jackscrews. Available in size 15, 26, 44, 62 and 78 only. H - hood, top opening, metal. available in size 26, 44, 62, and 78 only. G - Hood, EMI/RFI, Die Cast Zinc. AN - Lightweight aluminum hood, nickel finish. AL - Lightweight aluminum hood, nickel finish, low-profile. W - Hood, top or side opening, plastic. Available in size 15, 26, and 44 only. N - Push-on fastener, for right angle (90°) mounting. *2 F - Ferrite inductor. *2 Q - Ferrite inductor with push-on fastener, for right angle (90°) mounting brackets.
*1 For additional information on accessories listed in steps 5, 6 and 7, see Accessory Catalog. *2 Ferrite inductor is available on contact types 32 and 5 only. For more information on ferrite inductors, see page 7. *3 VL, V3 and V5 locking systems are not available for connector variants 62, 78 and 104. Jackscrews are highly recommended to minimize damage to contacts on variants with high mating forces. ** Mounting style - B8 bracket is not available for use with the 104 variant.										

ODD SERIES