

3M Interconnect Products
Molded-On Cable Assemblies



Smart Designs

Creative Connections

3M™ Molded-On Cable Assemblies offer a rugged, one-piece design, fully customized to your specifications. Product portfolio includes socket, PCB, and DIP connector options, various cable options, and special features to meet the durability, versatility and affordability needs in a wide variety of uses and applications.



3M™ Molded-On Cable Assemblies

Design

3M's molded cable assemblies offer a rugged, one-piece design, fully customized to your specifications. This design, combined with our extra-strong beryllium copper contacts, produces a connector/cable assembly that stands up to repeated insertions and withdrawals. The molded design also offers outstanding protection from the elements for maximum electrical performance. An added bonus of this process is a connector with integral strain relief and closed connector ends, resulting in a space-saving lower height profile.

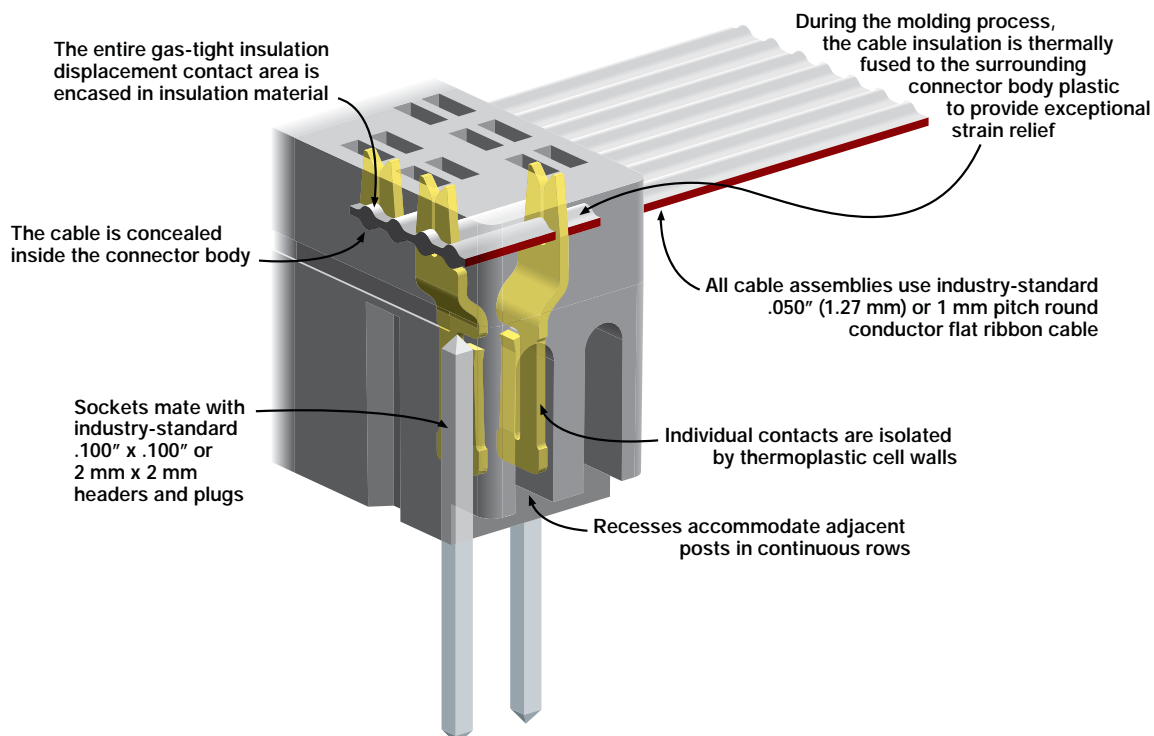
Flexibility

3M's molded cable assemblies also offer the versatility you need. In addition to the standard molded harnesses like socket, PCB, and DIP assemblies, this product can be customized for special needs. It comes in a wider selection of sizes than you will find elsewhere and can be mated with industry standard .100" and 2 mm spacing applications. Special features include high and low profile sockets, matte tin and gold pin plating options, board retention options, latching ears, polarization, pull tabs, keying and custom labeling.

Real World Applications

- Network and telecommunications equipment
- Test and measurement equipment
- Data processing equipment
- Printers and other computer peripherals
- High vibration applications
- Medical monitors, MRIs and other specialized equipment

3M™ Molded-On Cable Assembly, .100" x .100" Socket



3M™ Molded-On Cable Assemblies

Features and Benefits

Features	Advantages	Benefits
Molded-on process produces a low-profile connector	Lower height profile	Space-saving, unrestricted cooling air flow in high density applications
Integrated (molded-in) strain relief	No assembly of additional strain relief required: additional product security	Cost and time savings; lower parts count helps reduce costs and accelerates installation time
Multiple keying and polarization options	Insures correct position and orientation of connection	Helps reduce assembly time and costs in preventing defects in installation
Optional pull tabs	Prevents damage to cable and connectors when unplugging assemblies	Provides quick and easy disassembly for reconfiguration and repair; helps reduce replacement costs
Optional hold down feature (compliant pin tail) on PCB and DIP connectors	Holds connection in place during soldering process	No need for applying weights for processing; less rework; lower applied cost
Multiple industry standard cable options	Adaptable for many applications	Only one system for different requirements and specifications
Rugged one-piece interconnect	Long life span, high reliability	Low lifetime cost, no purchase of necessary spare parts

Cable Options

Cable Series	Technical Data Sheet	Pitch	AWG	Conductor Type	Insulation Material	Special Feature	.100" Connector Spacing	2 mm Connector Spacing
3306	TS-0066	.050"	26 AWG	Solid	PVC		✓	
3801	TS-0063	.050"		Stranded	PVC			
3811	TS-0122	.050"		Stranded	PVC	Color-Coded		
3302	TS-0123	.050"	28 AWG	Stranded	PVC	Color-Coded	✓	
3319	TS-0059	.050"		Stranded	PVC	High-Flex		
3365	TS-0080	.050"		Stranded	PVC			
3539	TS-0058	.050"		Stranded	PVC	Medium-Flex		
3601	TS-0553	.050"		Stranded	FEP			
3709	TS-0419	.050"		Solid	PVC			
3625	TS-0452	1 mm	28 AWG	Stranded	PVC			✓

*"RoHS Compliant 2005/95/EC" means that the product or part ("Product") does not contain any of the substances in excess of the maximum concentration values in EU Directive 2002/95/EC, as amended by Commission Decision 2005/618/EC, unless the substance is in an application that is exempt under EU RoHS. This information represents 3M's knowledge and belief, which may be based in whole or in part on information provided by third party suppliers to 3M.

3M™ Molded-On Connectors

Description	.100" x .100" Molded-on Socket, Low and High Profile	.100" x .100" Molded-on Two-Row, PCB, Standard and Retention Contacts	.100" x .300" and .100" x .600" Molded-on DIP, Standard and Retention Contacts	2 mm x 2 mm Molded-on Socket, Low Profile	2 mm x 2 mm Molded-on Two-Row, PCB, Low Profile
Cable Pitch	.050" (1.27 mm)	.050" (1.27 mm)	.050" (1.27 mm)	1 mm (0.039")	1 mm (0.039")
Physical					
Insulation Material	Glass Filled Polyester (PBT)- Flammability Rating: UL 94V0	Glass Filled Polyester (PBT)- Flammability Rating: UL 94V0	Glass Filled Polyester (PBT)- Flammability Rating: UL 94V0	Glass Filled Polyester (PBT)- Flammability Rating: UL 94V0	Glass Filled Polyester (PBT)- Flammability Rating: UL 94V0
Color	Gray	Gray	Gray	Gray	Gray
Contact Material	Copper Alloy	Copper Alloy	Copper Alloy	Copper Alloy	Copper Alloy
Plating	In Socket Wiping Area, 30 μ" [0.76 μm] Gold, Underplated with 50-150 μ" [1.27-3.81 μm] Nickel	300-400 μ" [7.62-10.16 mm] Matte Tin, Underplated with 50-150 μ" [1.27-3.81 μm] Nickel	300-400 μ" [7.62-10.16 μm] Matte Tin or 15 μ" [0.38 μm] or 30 μ" [0.76 μm] Gold, Underplated with 50-150 μ" [1.27-3.81 μm] Nickel	Wiping Area, 30 μ" Average Gold, Underplate and U-Slot: 50-150 μ" [1.27-3.81 μm] Nickel	300-400 μ" [7.62-10.16 μm] Matte Tin, Underplate and U-Slot: 50-150 μ" [1.27-3.81 μm] Nickel
Marking	Low Profile: 3M logo and Orientation Triangle High Profile: Orientation Triangle	3M logo	3M logo and Orientation Triangle	3M logo and Orientation Triangle	3M logo
Wire Accomodation	26 & 28 AWG Solid or Stranded	26 & 28 AWG Solid or Stranded	26 & 28 AWG Solid or Stranded	28 AWG Stranded	28 AWG Stranded
Electrical					
Current Rating	1A	1A	1A	1A	1A
Insulation Resistance	>1 x 10 ⁹ Ω	>1 x 10 ⁹ Ω	>1 x 10 ⁹ Ω	>1 x 10 ⁹ Ω	>1 x 10 ⁹ Ω
Withstanding Voltage	1000V	1000V	1000V	1000V	1000V
Environmental					
Temperature Rating	-55°C to 105°C	-55°C to 105°C	-55°C to 105°C	-55°C to 105°C	-55°C to 105°C
Technical Data Sheet Number	TS-0632	TS-2153	TS-2152	TS-0525	TS-2151

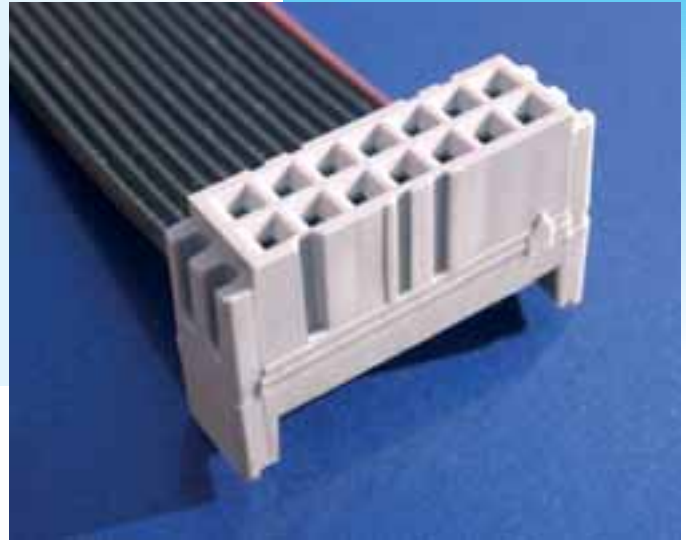
UL Recognized for US and Canadian Markets File E86982

Molded-On Sockets Mating Chart

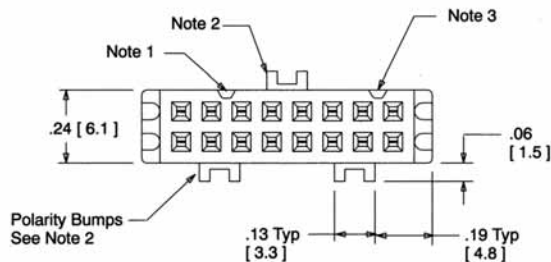
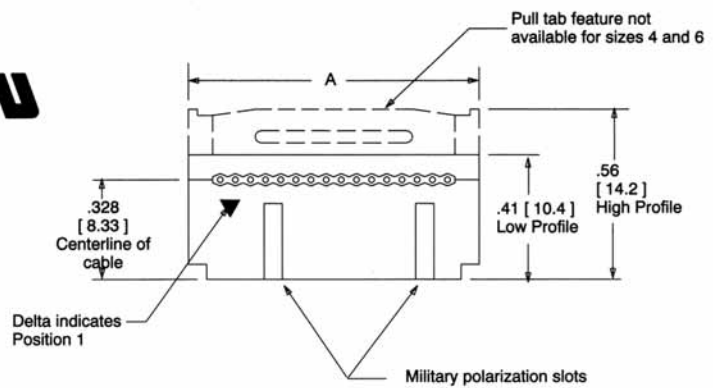
Part Number	Technical Sheet	Boardmount Header	Technical Sheet	Pinless Header	Technical Sheet	Wiremount Plug	Technical Sheet
1M Series Sockets (10, 16, 19, 30, 36, 39)	TS-2149	2500 Series	TS-0770	6400 Series	TS-0161	4600 Series	TS-0086
		3000 Series	TS-0771 TS-0772 TS-0478				
		303 Series	TS-0818				
		N4600 Series	TS-0168				
2M AA Series	TS-2150	1512 Series	TS-0808				
2M AB Series							
2M AC Series	TS-2150	1512 Series 1552 Series	TS-0808 TS-2199				
2M AD Series							

3M™ Molded-On Socket, .100" x .100"

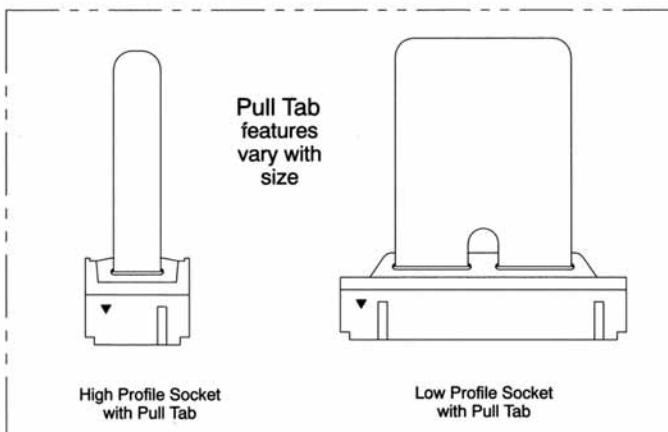
- Mates with industry standard .025 mm square pins on .100 x .100 inch centers
- High and low profiles available
- Both accommodate typical header latches (short and long)
- Slotted ends allow mating to continuous row headers
- Industry standard polarization
- Molded on polarity keys available in selective positions
- One-piece, molded-on construction with integral strain relief
- Closed-end construction
- Modular tooling allows customized designs



Contact Quantity	Dimension A
6	.48 [12.2]
8	.58 [14.7]
10	.68 [17.3]
12	.78 [19.8]
14	.88 [22.4]
16	.98 [24.9]
20	1.10 [30.0]
24	1.38 [35.1]
26	1.48 [37.6]
30	1.68 [42.7]
34	1.88 [47.8]
36	1.98 [50.3]
40	2.18 [55.4]
50	2.68 [68.1]
60	3.18 [80.8]
64	3.38 [85.9]



- Notes:
1. This polarization slot is nonexistent on sizes 6, 8, 10, 12 and 14.
 2. Optional centerbump polarity feature.
 3. This polarization slot is nonexistent on sizes 6 and 8.

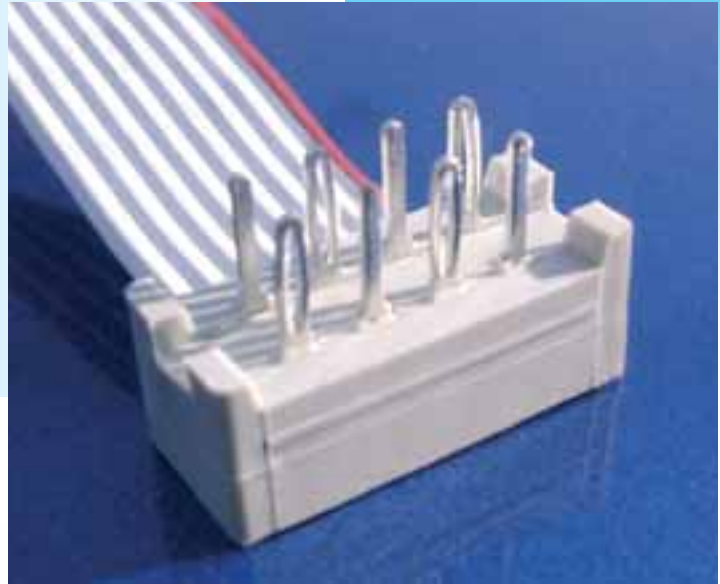


Inch [mm]			
Tolerance Unless Noted			
	.0	.00	.000
Inch	±.1	±.01	±.005

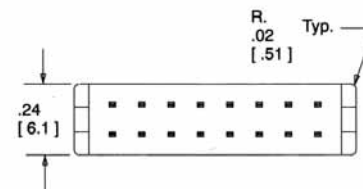
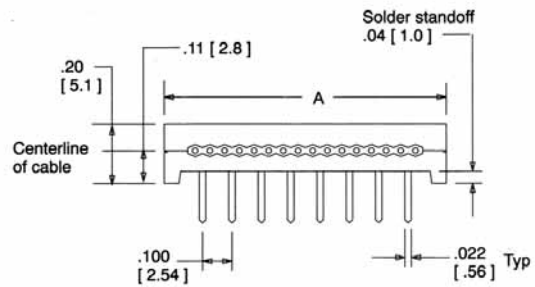
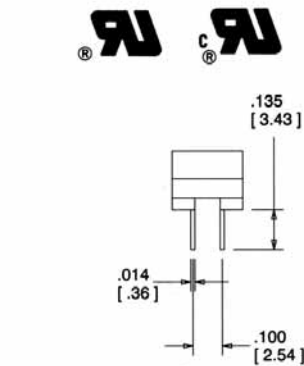
[] Dimensions for Reference only

3M™ Molded-On PCB, .100" x .100"

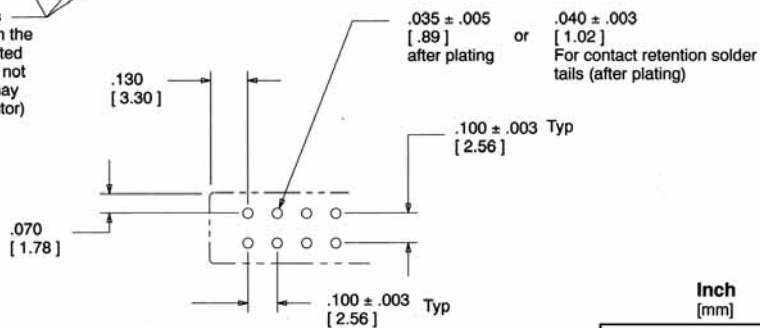
- Mates with industry standard .100 x .100 inch board pattern
- Standard and retention contacts available
- .040 inch high solder stand-off facilitates flux removal; additional heights available
- Low profile permits close PC board spacing
- One-piece, molded-on construction with integral strain relief
- Closed-end construction
- Modular tooling allows customized designs



Number of Contacts	Dimension A
06	.46 [11.7]
08	.56 [14.2]
10	.66 [16.8]
14	.86 [21.8]
16	.96 [24.4]
20	1.16 [29.5]
24	1.36 [34.5]
26	1.46 [37.1]
30	1.66 [42.1]
34	1.86 [47.2]
36	1.96 [49.8]
40	2.16 [54.9]
44	2.36 [59.9]
50	2.66 [67.6]
60	3.16 [80.3]
64	3.36 [85.3]



Retention contacts oriented as shown every other contact with the first and second row order shifted by one contact. (Orientation is not based on Delta location and may vary from connector to connector)



Recommended Mounting Hole Pattern

(Shown from mounting side of board)

Inch [mm]			
Tolerance Unless Noted			
	.0	.00	.000
Inch	±.1	±.01	±.005

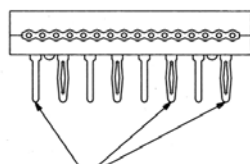
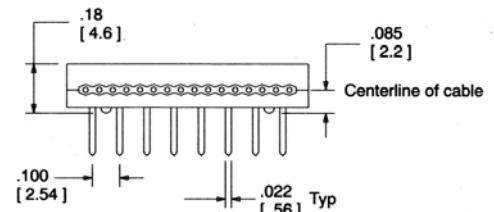
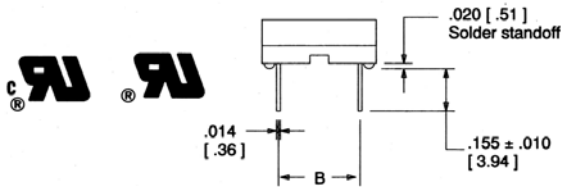
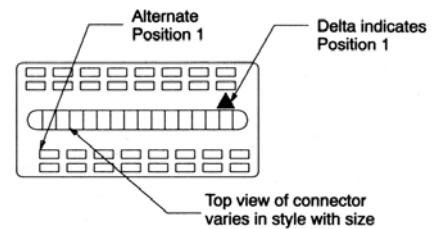
[] Dimensions for Reference only

3M™ Molded-On DIP, .100" x .300" and .100" x .600"

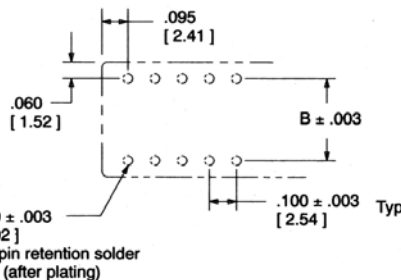
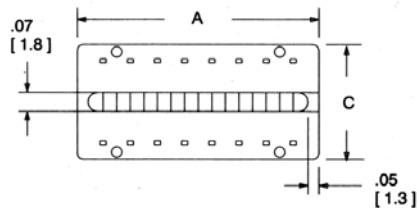
- Mates with industry standard IC sockets /.100" x .300" up to 28 positions and .100" x .600" between 24 and 40 positions
- One of the lowest profiles available in the industry
- Molded on solder stand-offs facilitate flux removal
- Gold or matte tin plating options
- One-piece, molded-on construction with integral strain relief
- Closed-end construction
- Modular tooling allows customized designs



Number of Contacts	Dimensions		
	A	B	C
6	.39 [9.9]	.300 [7.62]	.42 [10.7]
8	.49 [12.4]	.300 [7.62]	.42 [10.7]
14	.79 [20.1]	.300 [7.62]	.42 [10.7]
16	.89 [22.6]	.300 [7.62]	.42 [10.7]
18	.99 [25.1]	.300 [7.62]	.42 [10.7]
20	1.09 [27.1]	.300 [7.62]	.42 [10.7]
24	1.29 [32.8]	.600 [15.24]	.72 [18.3]
28	1.49 [37.8]	.300 [7.62]	.42 [10.7]
28	1.49 [37.8]	.600 [15.24]	.72 [18.3]
40	2.09 [53.1]	.600 [15.24]	.72 [18.3]



Retention contacts oriented as shown every other contact with the first and second row order shifted by one contact. (Orientation is not based on Delta location and may vary from connector to connector)



.035 ± .005 [.89] after plating

or

.040 ± .003 [1.02] For pin retention solder tails (after plating)

Inch [mm]		
Tolerance Unless Noted		
	.0	.00 .000
Inch	±.1	±.01 ±.005

[] Dimensions for Reference only

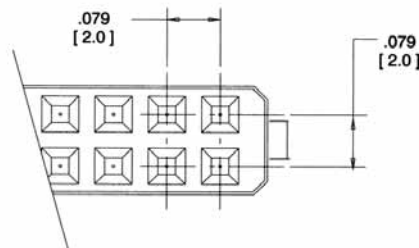
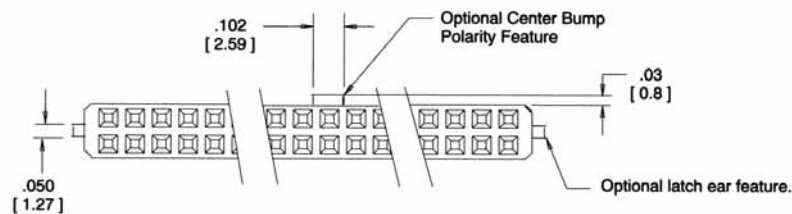
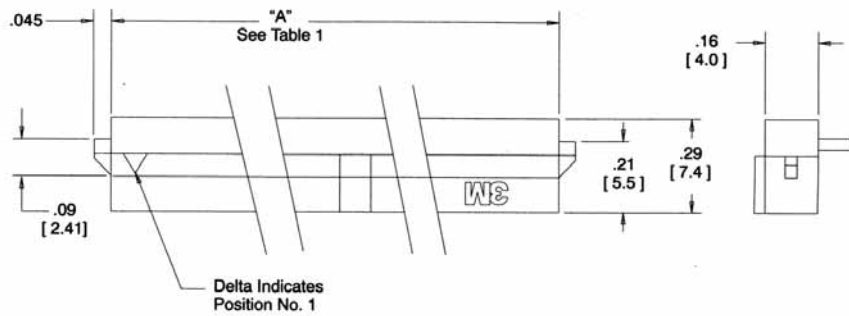
Recommended Mounting Hole Pattern

3M™ Molded-On Socket, 2 mm x 2 mm

- Mates with industry standard 2 mm x 2 mm headers
- Optional latching ear feature to mate to latch/eject headers
- Center bump polarity feature available
- Low profile allows close stacking between components and boards
- One-piece, molded-on construction with integral strain relief
- Closed-end construction
- Modular tooling allows customized designs

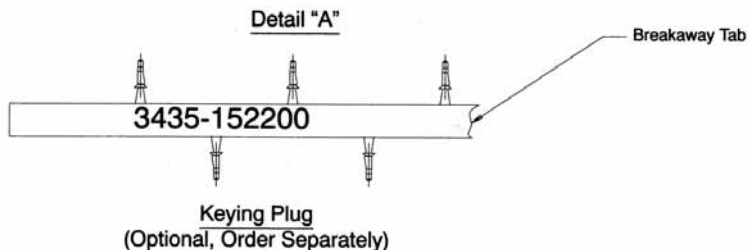


Contact Quantity	Dimension A
06	.27 [6.9]
08	.38 [9.6]
10	.46 [11.6]
16	.69 [17.6]
20	.85 [21.6]
22	.93 [23.6]
24	1.01 [25.6]
26	1.09 [27.6]
30	1.24 [31.6]
34*	1.40 [35.6]
40	1.64 [41.6]
44	1.79 [45.5]
50	2.03 [51.6]



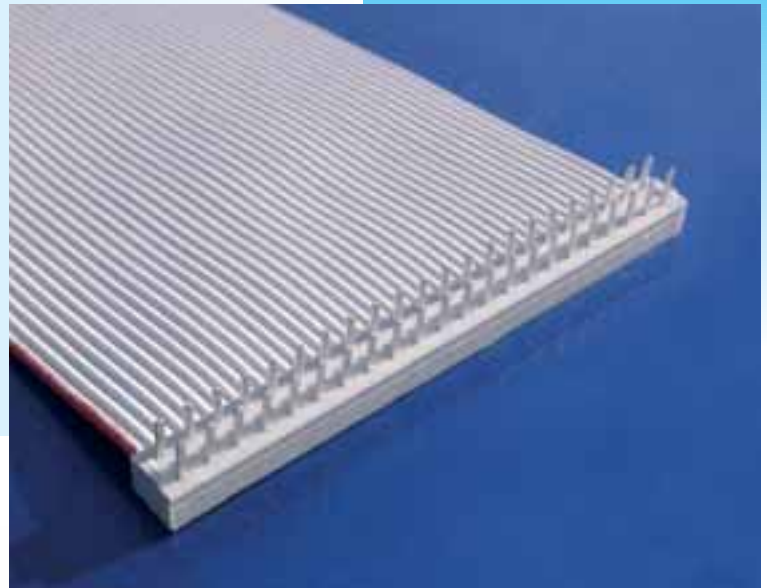
Inch [mm]			
Tolerance Unless Noted			
	.0	.00	.000
Inch	±.1	±.01	±.005

[] Dimensions for Reference only

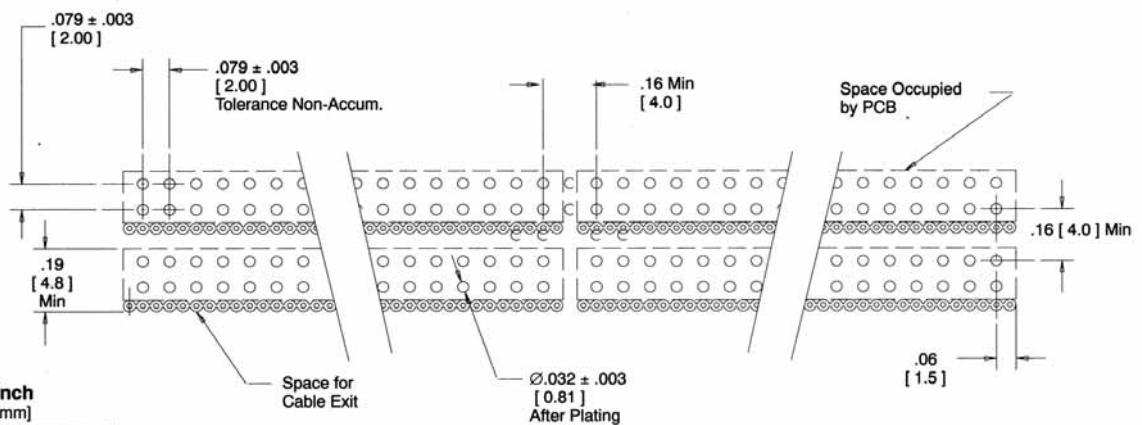
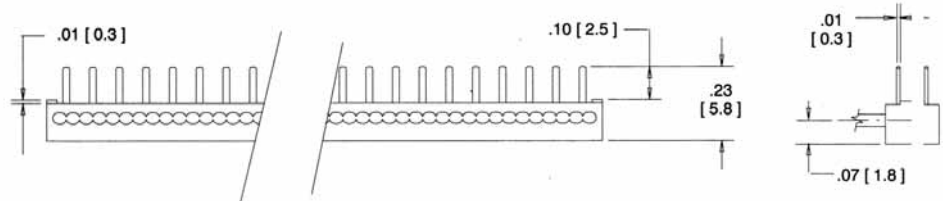
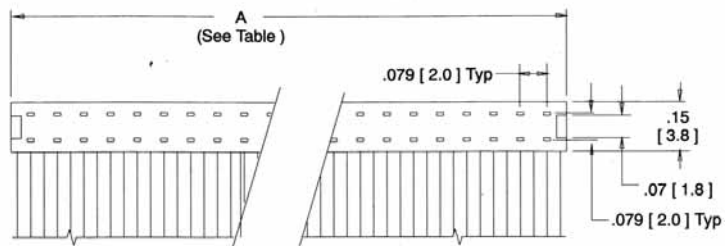


3M™ Molded-On PCB, 2 mm x 2 mm

- Mates with industry standard 2 mm x 2 mm board pattern
- Eliminates header socket for lower installed cost
- Minimizes PC board space
- Low profile allows close stacking between components and boards
- One-piece, molded-on construction with integral strain relief
- Closed-end construction
- Modular tooling allows customized designs



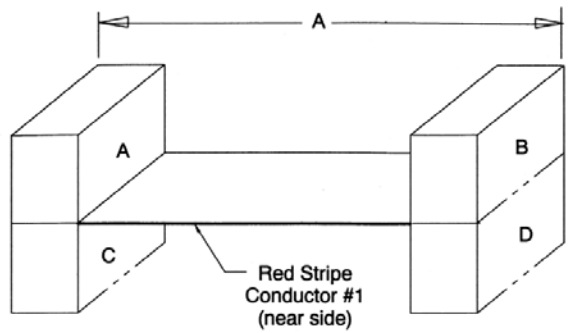
Contact Quantity	Dimension A
06	.27 [6.9]
08	.35 [8.9]
10	.43 [10.9]
12	.51 [12.9]
16	.67 [16.9]
20	0.82 [20.9]
26	1.06 [26.9]
30	1.22 [31.0]
36	1.46 [37.0]
40	1.61 [41.0]
44	1.77 [45.0]
50	2.01 [51.1]



Tolerance Unless Noted			
	.0	.00	.000
Inch	±.1	±.01	±.005

[] Dimensions for Reference only

Ordering Information



Length (Dim A) Tolerance		
Min	Max	Tol
1.7	10.0	± 0.3
10.0	20.0	± 0.5
20.0	40.0	± 0.6
40.0	120.0	± 1.0
120.0		± 2.0

3M™ Cable Assembly, .100"

Connector Types (Left and Right)

Socket, Low Profile (.41")

- 10 = with Military Polarization slots
- 16 = with Centerbump and Military Polarization slots
- 19 = with Dual Bump and Military Polarization slots

Socket, Regular Profile (.56")

- 30 = with Military Polarization slots
- 36 = with Centerbump and Military Polarization slots
- 39 = with Dual Bump and Military Polarization slots

PCB, 2-Row

- A0 = Straight Matte Sn Solder Tail
- A1 = Retention Matte Sn Solder Tail
- DIP, .1" x .3"
- B0 = Matte Sn Plating, Straight Solder Tail
- B1 = Matte Sn Plating, Retention Solder Tail
- 50 = 15 Au Plating, Straight Solder Tail
- 51 = 15 Au Plating, Retention Solder Tail
- 60 = 30 Au Plating, Straight Solder Tail
- 61 = 30 Au Plating, Retention Solder Tail
- DIP, .1" x .6"
- C0 = Matte Sn Plating, Straight Solder Tail
- C1 = Matte Sn Plating, Retention Solder Tail
- 80 = 15 Au Plating, Straight Solder Tail
- 81 = 15 Au Plating, Retention Solder Tail
- 90 = 30 Au Plating, Straight Solder Tail
- 91 = 30 Au Plating, Retention Solder Tail

1M XX XX - XXX - XXXX - XXX.X - XX - XX - XX - X

Number of Cable Conductors

Cable Product Series 26 AWG

- 3306 = Solid, PVC
- 3801 = Stranded, PVC
- 3811 = Stranded, PVC, Color Coded

28 AWG

- 3302 = Stranded, PVC, Color Coded
- 3319 = Stranded, PVC, High Flex Life
- 3365 = Stranded, PVC
- 3539 = Stranded, PVC, Medium Flex Life
- 3601 = Stranded, FEP
- 3709 = Solid, PVC

Assembly Length

Tip-to-Tip inches
(Dim A in inches)
Example:
001.7 = 1.7" Min

Marking

- 0 = No Marking
- 1 = Label - Date Code
- 2 = Inkstamp - Date Code

Left Right

- #### Centerbump Orientation Options
- 0 = None
 - 1 = Inside
 - 2 = Outside

Connector Orientation Options (Left and Right)

- AB = Up-Up
- AD = Up-Down
- CB = Down-Up
- CD = Down-Down

Left Right

Connector Feature Options

- 0 = No Pull Tab or Keying Required
- 1 = Pull Tab (Socket only)
- 2 = Keying Required, specify position(s)
- 3 = Pull Tab and Keying Required, specify position(s)

3M™ Cable Assembly, 2 mm

2M XX XX - XXX - XXXX - XXX.X - XX - XX - XX - X

Connector Types (Left and Right)

Socket, Low Profile (.29")

- AA = no Centerbump, no Latching Ear
- AB = Centerbump, no Latching Ear
- AC = no Centerbump, with Latching Ear
- AD = Centerbump, with Latching Ear

PCB, 2-Row

- BD = Matte Sn Plating, Straight Solder Tail

Number of Cable Conductors

Cable Product Series 28 AWG

- 3625 = Stranded, PVC

Assembly Length

Tip-to-Tip inches
(Dim A in inches)
Example:
001.7 = 1.7" Min

Marking

- 0 = No Marking
- 1 = Label - Date Code
- 2 = Inkstamp - Date Code

Left Right

- #### Centerbump Orientation Options
- 0 = None
 - 1 = Inside
 - 2 = Outside

Connector Orientation Options (Left and Right)

- AB = Up-Up
- AD = Up-Down
- CB = Down-Up
- CD = Down-Down

Connector Feature Options

- 0 = No Keying Required
- 4 = Keying Required, specify position(s)

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Important Notice

Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use.

Warranty; Limited Remedy; Limited Liability.

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3M Electronics
Electronic Solutions Division

6801 River Place Blvd.
Austin, TX 78726-9000
U.S.A.
1-800-225-5373
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