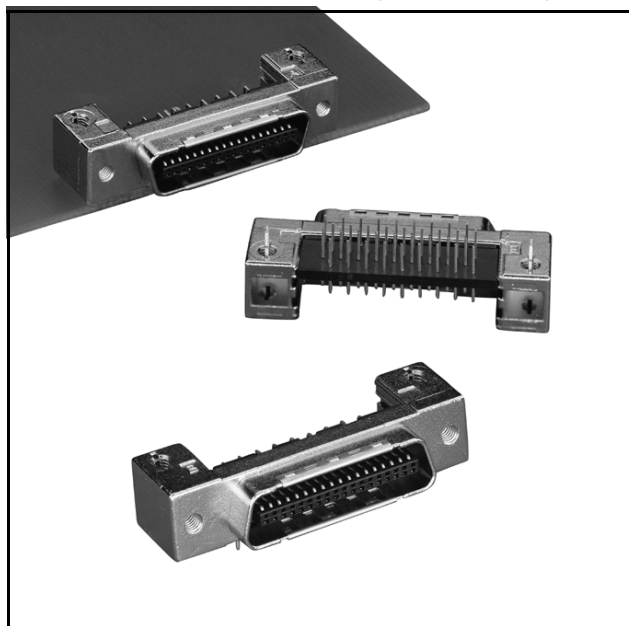


# 3M™ Mini D Ribbon (MDR) Connectors

.050" Boardmount Through-Hole Right Angle Plug - Shielded

101 Series



- Wiper-on-wiper contact for reliable repetitive plugging
- Rugged die cast metal case construction
- Screw or ground lock PCB retention
- Normal and reverse “D” interface options for board to board flexibility
- IEEE 1284C Interface as a 36 contact connector
- Contacts: 20, 26, 36 and 50
- See Regulatory Information Appendix (RIA) for chemical compliance information

Date Modified: November 26, 2007

TS-0620-B  
Sheet 1 of 4

## Physical

**Insulation Material:** Glass Reinforced Polyester Body

Flammability: UL 94V-0

Color: Black

Contact Material: Copper Alloy

### Plating

Underplating: 80  $\mu$ " [ 2.0  $\mu$ m ] Min. Nickel

Wiping Area: 30  $\mu$ " [ 0.76  $\mu$ m ] Min. Gold

Solder Tail Plating: Gold flash over Nickel (RIA E1 & C1 apply)

**Body Material:** Zinc Alloy

Plating Nickel

### Ground Lock

Material: Copper Alloy

Plating: Tin in combination with Gold flash plated tail

**Marking:** 3M Logo and Part Number

## Electrical

**Current Rating:** 1 A

**Insulation Resistance:**  $> 5 \times 10^8 \Omega$  at 500 V<sub>DC</sub>

**Withstanding Voltage:** 500 V<sub>RMS</sub> for 1 Minute

## Environmental

**Temperature Rating:** -20°C to +85°C

**Process Rating:** Solder Dip Test - 260°C for 10 secs., two times after 100°C max. preheat, 60 sec. max. duration

UL File No.: E68080



Interconnect Solutions

<http://www.3M.com/interconnects/>

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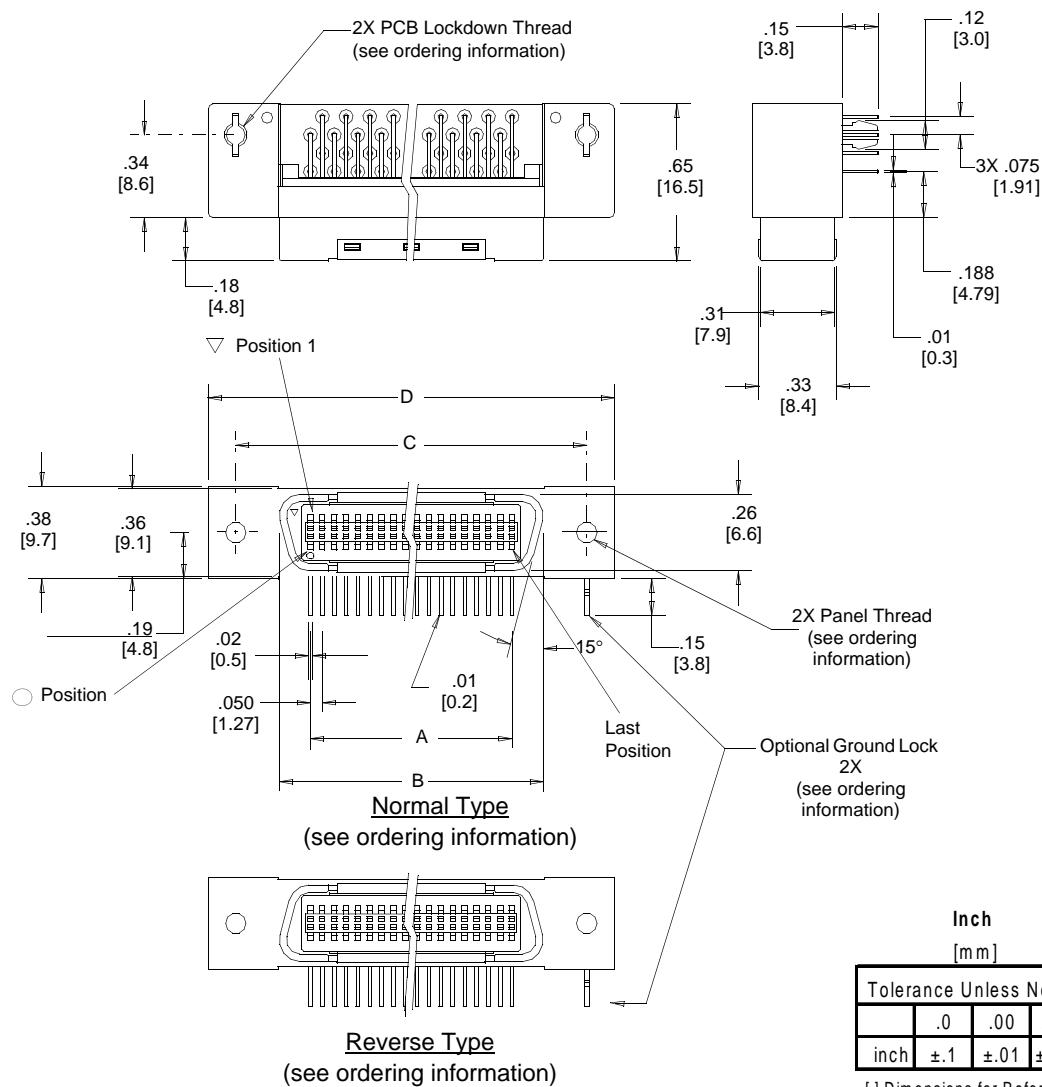
800-225-5373

# 3M™ Mini D Ribbon (MDR) Connectors

.050" Boardmount Through-Hole Right Angle Plug - Shielded

101 Series

Contact Quantity	Dimensions			
	A	B	C	D
20	.450 [11.43]	.71 [18.1]	1.081 [27.45]	1.31 [33.3]
26	.600 [15.24]	.87 [22.0]	1.231 [31.26]	1.46 [37.2]
36	.850 [21.59]	1.11 [28.3]	1.481 [37.61]	1.71 [43.5]
50	1.200 [30.48]	1.46 [37.2]	1.831 [46.5]	2.06 [52.4]



## Ordering Information

**101XX-X2X2PC**

Contact Quantity

Panel/Board Retention Feature

20, 26, 36 pos:

1 = M2.5 panel/M2.5 screw lock

B = M2.5 panel/ground lock

50 pos:

4 = 4-40 panel/4-40 screw lock

E = 4-40 panel/ground lock

Mounting Feature

5 = Boardmount Right Angle Normal Type

7 = Boardmount Right Angle Reverse Type

Use (M2.5 x 8 mm) screws to mount to panel with max. thickness of .079 [2.0].

TS-0620-B  
Sheet 2 of 4



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# 3M™ Mini D Ribbon (MDR) Connectors

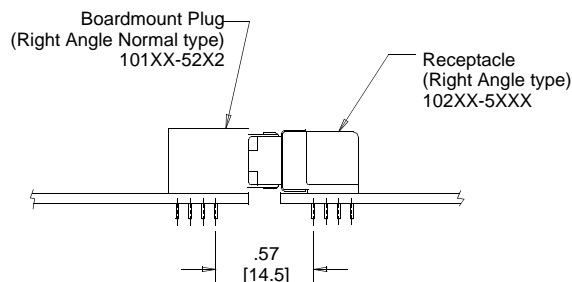
.050" Boardmount Through-Hole Right Angle Plug - Shielded

101 Series

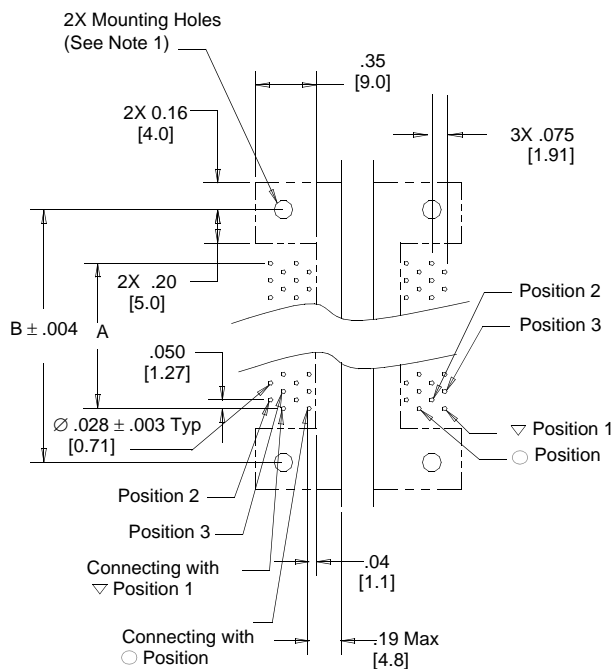
Contact Quantity	Dimensions		
	A	B	C
20	.450 [11.43]	1.081 [27.45]	.93 [23.7]
26	.600 [15.24]	1.231 [31.26]	1.08 [27.5]
36	.850 [21.59]	1.481 [37.61]	1.33 [33.9]
50	1.200 [30.48]	1.831 [46.50]	1.685 [42.80]

## Recommended Board Layout (Normal Type Plug)

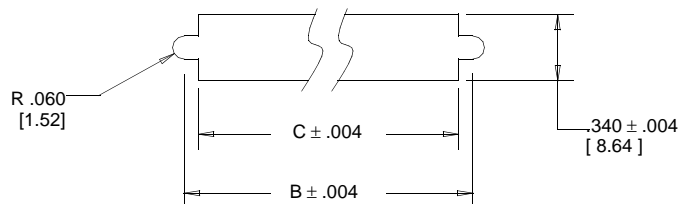
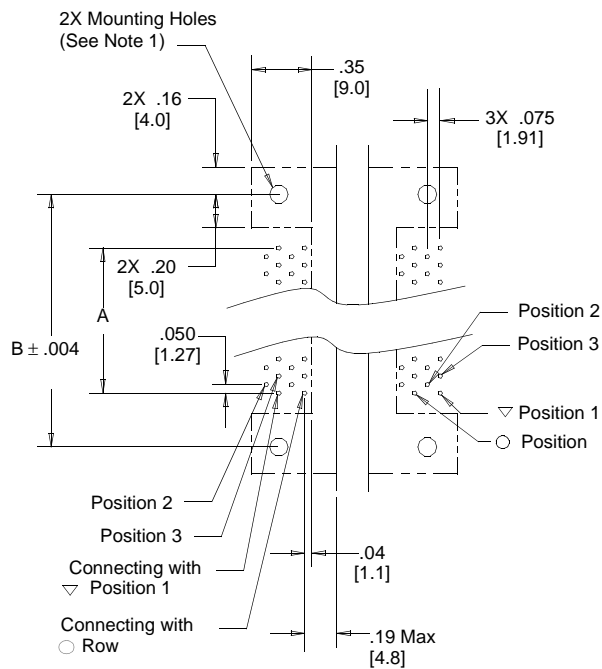
(Plug viewed from connector side; receptacle viewed from bottom side)



For 20 or 36 Position Plug Only



For 26 or 50 Position Plug Only



## Recommended Panel Cut-Out

(See Notes)

### Notes:

- Plated-through PC board mounting Holes for 0.062 [1.57] board thickness:  
Grounding Flange (Screw Lock) -  $\varnothing$  .110  $\pm$  .003 [2.79] (20, 26, 36 pos)  
Ground Lock -  $\varnothing$  .100  $\pm$  .003 [2.54]  
Grounding Flange (Screw Lock) -  $\varnothing$  .120  $\pm$  .003 [3.05] (50 pos)
- Panel thickness .079 [2.00] Max.

TS-0620-B  
Sheet 3 of 4



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# 3M™ Mini D Ribbon (MDR) Connectors

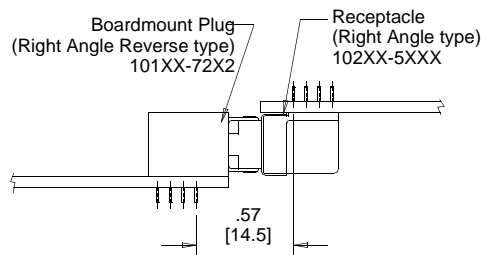
.050" Boardmount Through-Hole Right Angle Plug - Shielded

101 Series

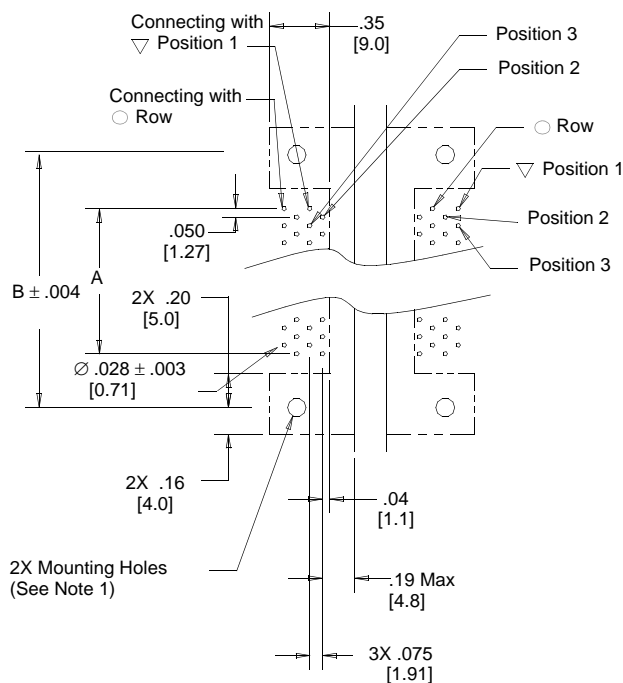
Contact Quantity	Dimensions		
	A	B	C
20	.450 [11.43]	1.081 [27.45]	.93 [23.7]
26	.600 [15.24]	1.231 [31.26]	1.08 [27.5]
36	.850 [21.59]	1.481 [37.61]	1.33 [33.9]
50	1.200 [30.48]	1.831 [46.50]	1.685 [42.80]

## Recommended Board Layout (Reverse Plug)

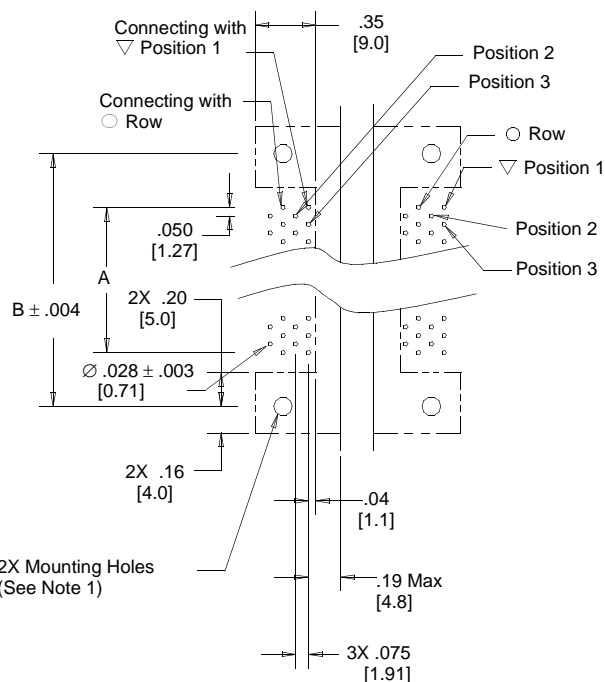
(Plug viewed from Connector side Receptacle viewed from bottom side)



For 20 or 36 Position Plug Only

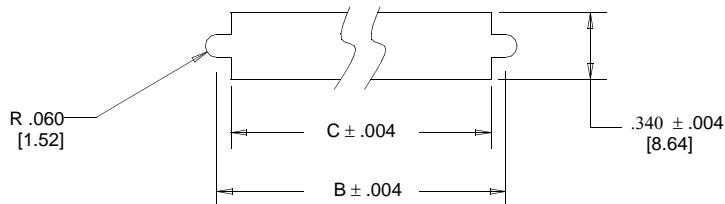


For 26 or 50 Position Plug Only



### Notes:

- Plated-through PC board mounting Holes for 0.062 [1.57] board thickness:  
Grounding Flange (Screw Lock) -  $\varnothing .110 \pm 0.003$  [2.8] (20, 26, 36 pos)  
Ground Lock -  $\varnothing .100 \pm 0.003$  [2.6]  
Grounding Flange (Screw Lock) -  $\varnothing .120 \pm 0.003$  [3.0] (50 pos)
- Panel thickness .079 [2.00] Max.



## Recommended Panel Cut-Out

(See Notes)

TS-0620-B  
Sheet 4 of 4



Interconnect Solutions

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**800-225-5373**

# Regulatory Information Appendix

## 3M Electronic Solutions Division/Interconnect

### EUROPE

#### Appendix E1: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment, as amended by EU Commission Decision 2005/618/EC.

**This product is RoHS Compliant 2005/95/EC.**

“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. Unless otherwise stated by 3M in writing, this information represents 3M’s best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M’s Regulatory Information Appendix, then 3M’s entire liability and Buyer’s exclusive remedy will be in accordance with the Warranty stated below.

#### Appendix E2: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment, as amended by EU Commission Decision 2005/618/EC.

**This product contains lead in the compliant pin area in excess of the maximum concentration value allowed but is compliant by exemption under EU Commission Decision 2005/747/EC.**

“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. Unless otherwise stated by 3M in writing, this information represents 3M’s best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M’s Regulatory Information Appendix, then 3M’s entire liability and Buyer’s exclusive remedy will be in accordance with the Warranty stated below.

#### Appendix E3: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment as amended by Commission Decision 2005/618/EC.

**This product contains lead in the solder tail area in excess of the maximum concentration value allowed.**

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In the event any product is proven not to conform with 3M’s Regulatory Information Appendix, then 3M’s entire liability and Buyer’s exclusive remedy will be in accordance with the Warranty stated below.

#### Appendix E4: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment, as amended by EU Commission Decision 2005/618/EC.

**This product contains decaBDE in the insulating material in excess of the maximum concentration value allowed but is compliant by exemption under EU Commission Decision 2005/717/EC.**

“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. Unless otherwise stated by 3M in writing, this information represents 3M’s best knowledge and belief based upon information provided by third party suppliers to 3M.

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# Appendix E5: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, as amended by EU Commission Decision 2005/618/EC.

**This product contains lead in excess of the maximum concentration value allowed but is compliant by exemption under Item 6 of the Annex to the Directive.**

“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. Unless otherwise stated by 3M in writing, this information represents 3M’s best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M’s Regulatory Information Appendix, then 3M’s entire liability and Buyer’s exclusive remedy will be in accordance with the Warranty stated below.

## CHINA

### Appendix C1: China RoHS



Electronic Industry Standard of the People’s Republic of China, SJ/T11363-2006, Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products.

This symbol, per Marking for the Control of Pollution Caused by Electronic Information Products, SJ/T11364-2006, means that the product or part **does not** contain any of the following substances in excess of the following maximum concentration values in any homogeneous material: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers; or (b) 0.01% (by weight) for cadmium. Unless otherwise stated by 3M in writing, this information represents 3M’s best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M’s Regulatory Information Appendix, then 3M’s entire liability and Buyer’s exclusive remedy will be in accordance with the Warranty stated below.

### Appendix C2: China RoHS



Electronic Industry Standard of the People’s Republic of China, SJ/T11363-2006, Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products.

This symbol, per Marking for the Control of Pollution Caused by Electronic Information Products, SJ/T11364-2006, means that the product or part **does** contain a substance, as detailed in the chart below, in excess of the following maximum concentration values in any homogeneous material: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers; or (b) 0.01% (by weight) for cadmium. Unless otherwise stated by 3M in writing, this information represents 3M’s best knowledge and belief based upon information provided by third party suppliers to 3M.

The numerical reference in the symbol above should not be construed as a representation regarding the product’s life or an extension of a product warranty. The product warranty is stated below. In the event any product is proven not to conform with 3M’s Regulatory Information Appendix, then 3M’s entire liability and Buyer’s exclusive remedy will be in accordance with the product Warranty stated below.

产品中有毒有害物质或元素的名称及含量      Name and Content of Hazardous Substances or Elements

部件名称 (Part or Component Name)	有毒有害物质或元素 (Hazardous Substances or Elements)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
端子镀层(contact plating)	×	○	○	○	○	○
○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006 标准规定的限量要求以下。(Indicates that this hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.)						
×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求。(Indicates that this hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.)						

## Appendix C3: China RoHS



Electronic Industry Standard of the People's Republic of China, SJ/T11363-2006, Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products.

This symbol, per Marking for the Control of Pollution Caused by Electronic Information Products, SJ/T11364-2006, means that the product or part **does** contain a substance, as detailed in the chart below, in excess of the following maximum concentration values in any homogeneous material: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers; or (b) 0.01% (by weight) for cadmium. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

The numerical reference in the symbol above should not be construed as a representation regarding the product's life or an extension of a product warranty. The product warranty is stated below. In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the product Warranty stated below.

产品中有毒有害物质或元素的名称及含量 Name and Content of Hazardous Substances or Elements

部件名称 (Part or Component Name)	有毒有害物质或元素 (Hazardous Substances or Elements)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
合金 (Metal alloy)	×	○	○	○	○	○
<p>○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006 标准规定的限量要求以下。(Indicates that this hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.)</p> <p>×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求。(Indicates that this hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.)</p>						

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All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. 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. Any statements related to the product which are not contained in 3M's current publications, or any contrary statements contained on your purchase order shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.

### Warranty; Limited Remedy; Limited Liability.

This product will be free from defects in material and manufacture for a period of one (1) year from the time of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.**



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101xx-52 2  
101xx-72 2

## ミニチュアデルタリボン (MDR)システム ボードマウントプラグ

ハーフピッチI/Oコネクタの「業界の標準品」MDRシステム  
プレフォース型カンチレバーコンタクト採用による高信頼性  
を確保した低挿入抜き力とこじり対策  
EMI/ESD対策品  
ダイキャストロックスタンドによる強靱な構造  
固定ネジサイズにISO規格に対応したM2.5や北米での業  
界標準#4-40も用意  
ハンダ付け前の仮固定とグラウンド処理を効率化するグラ  
ンドロックつき製品を用意  
実装・機械設計の自由度を高めるリバースタイプも用意



[ 材料及び処理 ]	部品名	材料及び処理	備考
	ボディ	ガラス入りPCT	UL94V-0
	コンタクト	銅合金	ニッケル下地金メッキ テール部ハンダメッキ
	ロックスタンド	亜鉛ダイキャスト	
	アライメントプレート	ガラス入りPBT	UL94V-0
	グラウンドプレート	銅合金：ニッケルメッキ	
	グラウンドロック	銅合金：ハンダメッキ	

勝 特 力 材 料 886-3-5753170  
勝特力電子(上海) 86-21-54151736  
勝特力電子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

[ 適合対象 ]	コネクタ	基板
	MDRリセプタクル 102XX-	厚さ 1.6mm ~ 3.0mm (グラウンドロックつきでは1.6mm)

[ 定 格 ]	項目	規格
	電流	0.5A MAX.
	電圧	AC:150V MAX. / DC:200V MAX.
	周囲温度	- 55 ~ +85

[ 電気的特性 ]	項目	特性	条件
	耐電圧	漏れ電流1mA以内で絶縁破壊が発生しないこと。	隣接ポスト間にAC500V・RMSを1分間印加。
	絶縁抵抗	500M 以上	隣接コンタクト間にDC500Vを印加し、1分後測定する。
	接触抵抗	初期接触抵抗各メッキ仕様共通50m 以下 環境試験後の接触抵抗変化 / 各メッキ仕様共通±25m 以下	抵抗測定電流1.5mA、開放電圧20mVの4端子法にて測定する。 (弊社適合コネクタとの組み合わせ時であり、バルク抵抗を含む。)

[ 機械的特性 ]	項目	特性	条件
	コンタクト 保持力	7.85N以上(0.8kgf)	抜去スピード5mm / 分で測定する。
	挿抜力	挿入力 1.47N(150gf) 以下 抜去力 0.29N(30gf) 以上	弊社コネクタとの組み合わせによる挿抜スピード5mm / 分で測定する。 規格は、単極当たりの算出値。
	ハンダ 付性	ぬれ性：95%以上	230 5秒浸漬
	ハンダ 耐熱性	試験後、機械・電気的特性を満足する事。	260 10秒浸漬
	耐振動性	試験後、機械・電気的特性を満足する事。 瞬断1μ秒以下。	振動試験時に瞬断を測定する。
	耐衝撃性	試験後、機械・電気的特性を満足する事。 瞬断1μ秒以下	50G 11秒 X・Y・Z軸方向各3回

[ 耐環境特性 ]	項目	試験条件	準拠規格	耐環境特性における各項目は、下記に示すシーケンス試験によって性能評価を行う。
	耐湿試験	- 10 ~ 65 、95%RH / 10サイクル		(1)JLメッキ
	塩水噴霧試験	塩化ナトリウム5%溶液、35 / 48時間		シーケンス : 挿抜30回 耐湿試験 塩水噴霧試験
	熱衝撃試験	- 55 25 85 25 / 5サイクル		シーケンス : 熱衝撃試験 湿度試験 耐振試験
	湿度試験(定常温度)	40 、95%RH / 96時間		シーケンス : 高温寿命試験
	高温寿命試験	定常電流 : 定格電流 × 110%、85 / 1000時間		H <sub>2</sub> Sガスシーケンス / 30回挿抜 H <sub>2</sub> Sガス試験
	H <sub>2</sub> Sガス	濃度3±1PPM 40 70~80%RH / 96時間	JEIDA-38-1984	耐久挿抜試験 / 300回
	振動試験	10 55Hz、振幅1.52mmまたは10G、1分間挿引 / X・Y・Z 軸方向各2時間		(2)VCメッキ
				シーケンス : 挿抜50回 耐湿試験 塩水噴霧試験
				シーケンス : 熱衝撃試験 湿度試験 耐振試験
				シーケンス : 高温寿命試験
				H <sub>2</sub> Sガスシーケンス / 50回挿抜 H <sub>2</sub> Sガス試験
				耐久挿抜試験 / 500回挿抜

特性値および測定基準は、すべて電氣的、機械的特性を満足すること。



101XX-52 2  
101XX-72 2

ミニチュアデルタリボン  
(MDR)システム  
ボードマウントプラグ

# オーダーインフォメーション

101XX- 2 2

メッキ仕様

VC : 金メッキ0.76 μm以上

JL : 金メッキ0.2 μm以上

パネル/基板への固定方法

0 : ネジ固定M2.6/ネジ固定M2.6

1 : ネジ固定M2.5/ネジ固定M2.5

4 : ネジ固定UNC 4-40/ネジ固定UNC 4-40

A : ネジ固定M2.6/グランドロック

B : ネジ固定M2.5/グランドロック

E : ネジ固定UNC 4-40/グランドロック

形状

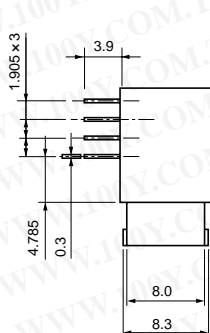
5 : ライトアングルノーマル型

7 : ライトアングルリバース型

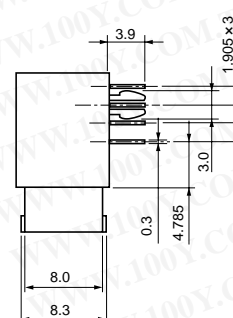
極数表示 20、26、36、50、

勝特力材料 886-3-5753170  
勝特力电子(上海) 86-21-54151736  
勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

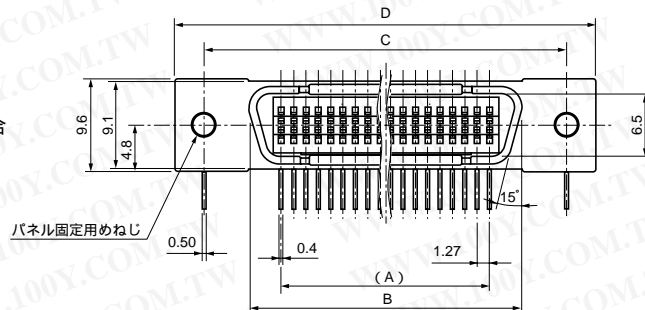
スクリーロックの場合



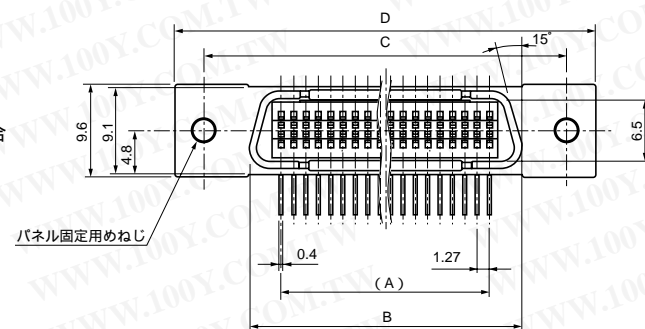
グランドロックの場合



ノーマル型の場合



リバース型の場合



極数	製品番号	A	B	C	D
20	10120- 2 2	11.43	18.1	27.45	33.3
26	10126- 2 2	15.24	22.0	31.26	37.2
36	10136- 2 2	21.59	28.3	37.61	43.5
50	10150- 2 2	30.48	37.2	46.50	52.4

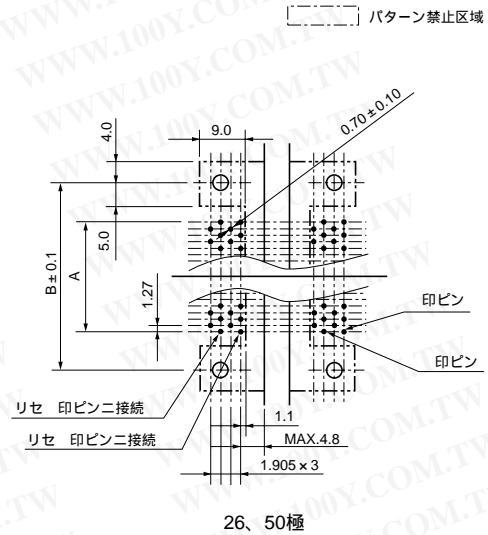
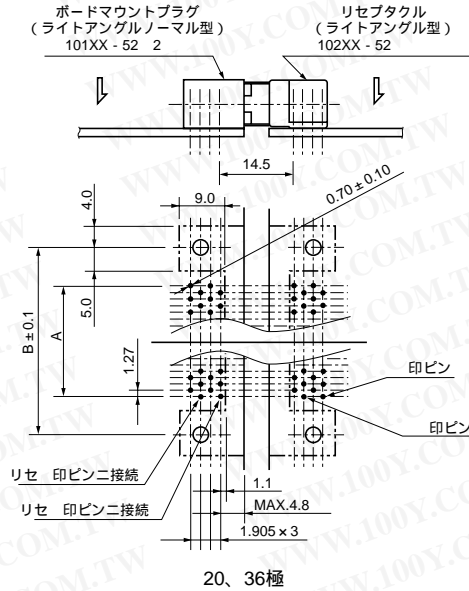
指定外寸法公差

寸法	.0	.00	.000
公差	±.3	±.15	±.150

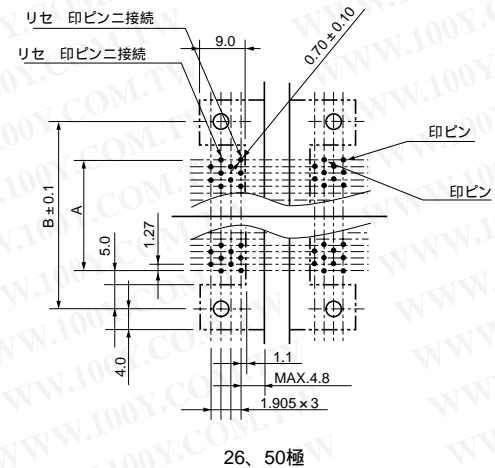
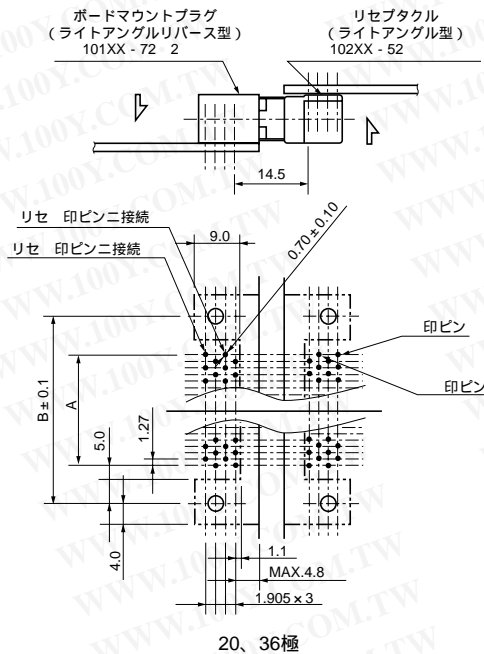
単位 = mm

G  
MDR

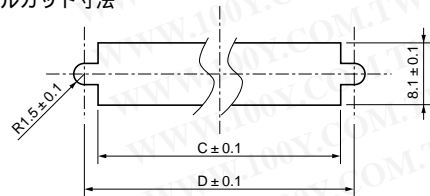
ライトアングルノーマル型 矢視方向から見た推奨ホールパターン図



ライトアングルリバース型 矢視方向から見た推奨ホールパターン図



推奨パネルカット寸法



極数	製品番号	A	B	C	D
20	10120- 2 2	11.43	27.45	23.7	27.45
26	10126- 2 2	15.24	31.26	27.5	31.26
36	10136- 2 2	21.59	37.61	33.9	37.61
50	10150- 2 2	30.48	46.50	42.8	46.50

注記 1.基板固定用穴は、スクリーロックの場合は 2.8 (但し、- 242は 3.0) グランドロックの場合は 2.6となります。  
 2.パネルの厚みは2mm以下として下さい。ワッシャーなどを使用する場合は、その厚みを含みます。

指定外寸公差			
寸法	.0	.00	.000
公差	±.3	±.15	±.150

単位 = mm