



# PRODUCT SPECIFICATION



LANGUAGE
JAPANESE
ENGLISH

### 【1. 適用範囲 SCOPE】

本仕様書は、\_\_\_\_\_ 殿 に納入する。

1.0 mm ピッチ FPC / FFC用コネクタ について規定する。

This specification covers the 1.0mm PITCH FPC / FFC CONNECTOR series.

### 【2. 製品名称及び型番 PRODUCT NAME AND PART NUMBER】

製品名称 Product Name	無鉛 LEAD FREE	製品型番 Material Number
ハウジングアッセンブリ Housing Assembly	無鉛 LEAD FREE	52808-**-*19
52808-**-*19テーピング梱包 Embossed Tape Package For 52808-**-*19	無鉛 LEAD FREE	52808-**-*70
ハウジングアッセンブリ Housing Assembly	無鉛 LEAD FREE	52808-**-*29
52808-**-*29テーピング梱包 Embossed Tape Package For 52808-**-*29	無鉛 LEAD FREE	52808-**-*71

\* : 図面参照 Refer to the drawings.

### 【3. 定格 RATINGS】

項目 Item	規格 Standard	
最大許容電圧 Rated Voltage (MAXIMUM)	125 V	[AC (実効値 rms) / DC]
最大許容電流 Rated Current (MAXIMUM)	0.5 A	
使用温度範囲 Ambient Temperature Range	-20°C ~ +80°C*1	

\*1 : 通電による温度上昇分を含む。

Including terminal temperature rise.

REV.	A																		
SHEET	1~9																		
REVISE ON PC ONLY										TITLE:									
A 新規作成 RELEASED J2004-2426 '04/02/16 N.AIDA										1.0mm PITCH FPC / FFC CONN. NON ZIF ST. -LEAD FREE- 製品仕様書									
REV. DESCRIPTION										THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION									
DESIGN CONTROL J					STATUS					WRITTEN BY: N.AIDA		CHECKED BY: K.TOJO		APPROVED BY: M.SASAO		DATE: YR/MO/DAY 2004/02/16			
DOCUMENT NUMBER PS-52808-004															FILE NAME PS52808004.doc			SHEET 1 OF 9	



PRODUCT SPECIFICATION



LANGUAGE

JAPANESE  
ENGLISH

【4. 性能 PERFORMANCE】

4-1. 電気的性能 Electrical Performance

項目 Item	条件 Test Condition	規格 Requirement
4-1-1 接触抵抗 Contact Resistance	適合FPC/FFCを嵌合させ、開放電圧 20mV 以下、 短絡電流 10mA にて測定する。 (JIS C5402 5.4) Mate applicable FPC/FFC and measure by dry circuit , 20mV MAXIMUM, 10mA . (JIS C5402 5.4)	30 milliohms MAXIMUM
4-1-2 絶縁抵抗 Insulation Resistance	適合FPC/FFCを嵌合させ、隣接するターミナル間 及びターミナル、アース間に、DC 500Vを印加し 測定する。 (JIS C5402 5.2/MIL-STD-202 試験法 302) Mate applicable FPC/FFC and apply 500V DC between adjacent terminal and ground. (JIS C5402 5.2/MIL-STD-202 Method 302)	100 Megohms MINIMUM
4-1-3 耐電圧 Dielectric Strength	適合FPC/FFCを嵌合させ、隣接するターミナル間及 びターミナル、アース間に、AC 500V (実効値) を 1分間印加する。 (JIS C5402 5.1/MIL-STD-202 試験法 301) Mate applicable FPC/FFC and apply 500V AC(rms) for 1 minute between adjacent terminal or ground. (JIS C5402 5.1/MIL-STD-202 Method 301)	異常なきこと No Breakdown

4-2. 機械的性能 Mechanical Performance

項目 Item	条件 Test Condition	規格 Requirement
4-2-1 挿入力及び抜去力 Insertion / Withdrawal Force	適合FFCを用いて、毎分25±3mmの速さで挿入、 抜去を行う。 Insert and withdraw the applicable FFC to the connector at the speed rate of 25±3 mm per minute.	第6項参照 Refer to paragraph 6
4-2-2 ターミナル保持力 Terminal / Housing Retention Force	ターミナルを毎分25±3 mmの速さで引っ張る。 Apply axial pull out force at the speed rate of 25±3 mm per minute on the terminal assembled in the housing.	5.9N {0.6kgf} MINIMUM

REVISE ON PC ONLY

**A**

SEE SHEET 1 OF 9

TITLE:

1.0 mm PITCH FPC / FFC CONN. NON ZIF ST.  
-LEAD FREE- 製品仕様書

REV.

DESCRIPTION

THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO  
MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION

DOCUMENT NUMBER

**PS-52808-004**

FILE NAME

PS52808004.doc

SHEET

2 OF 9

EN-37-1(019)



PRODUCT SPECIFICATION



LANGUAGE

JAPANESE  
ENGLISH

4-3. その他 Environmental Performance and Others

項目 Item	条件 Test Condition	規格 Requirement	
4-3-1 繰り返し挿抜 Repeated Insertion / Withdrawal	1分間に10回以下の速さで挿入、抜去を10回繰り返す。 When mated up to 10 cycles repeatedly by the rate of 10 cycles per minute.	接触抵抗 Contact Resistance	50 milliohms MAXIMUM
4-3-2 温度上昇 Temperature Rise	適合FPC/FFCを嵌合させ、最大許容総電流を通電し、コネクタの温度上昇分を測定する。 (UL 498) Mate connectors and measure the temperature rise of contact when the maximum AC rated current is passed. (UL 498)	温度上昇 Temperature Rise	30 °C MAXIMUM
4-3-3 耐振動性 Vibration	DC 1mA 通電状態にて、嵌合軸を含む互いに垂直な3方向に掃引割合 10~55~10 Hz/分、全振幅 1.5mm の振動を各 2時間 加える。 (MIL-STD-202試験法 201) Mate connectors and subject to the following vibration conditions, for a period of 2 hours in each of 3 mutually perpendicular axes, passing DC 1 mA during the test. Amplitude : 1.5 mm P-P Frequency : 10-55-10 Hz shall be traversed in 1 minute. (MIL-STD-202, Method 201)	外観 Appearance	異状なきこと No Damage
		接触抵抗 Contact Resistance	50 milliohms MAXIMUM
		瞬断 Discontinuity	1.0 microsecond MAXIMUM
4-3-4 耐衝撃性 Shock	DC 1mA 通電状態にて、嵌合軸を含む互いに垂直な 6方向に 490m/s <sup>2</sup> {50G} の衝撃を各3回加える。 (JIS C0041 / MIL-STD-202試験法 213) Mate connectors and subject to the following shock conditions. 3 times of shocks shall be applied for each 6 directions along 3 mutually perpendicular axes, passing DC 1 mA current during the test.(Total of 18 shocks) Peak value : 490 m/s <sup>2</sup> (50 G) (JIS C0041/MIL-STD-202 Method 213)	外観 Appearance	異状なきこと No Damage
		接触抵抗 Contact Resistance	50 milliohms MAXIMUM
		瞬断 Discontinuity	1.0 microsecond MAXIMUM

REVISE ON PC ONLY		TITLE: 1.0 mm PITCH FPC / FFC CONN. NON ZIF ST. -LEAD FREE- 製品仕様書
<b>A</b>	SEE SHEET 1 OF 9	
REV.	DESCRIPTION	THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION

DOCUMENT NUMBER <b>PS-52808-004</b>	FILE NAME PS52808004.doc	SHEET 3 OF 9
--	-----------------------------	-----------------



PRODUCT SPECIFICATION



LANGUAGE

JAPANESE  
ENGLISH

項目 Item		条件 Test Condition	規格 Requirement	
4-3-5	耐熱性 Heat Resistance	適合FPC/FFCを嵌合させ、85±2°Cの雰囲気中に96時間放置後取り出し、1~2時間室温に放置する。 ( JIS C0021/MIL-STD-202 試験法 108 ) Mate FPC/FFC and expose to 85±2°C for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. ( JIS C0021/MIL-STD-202 Method 108)	外観 Appearance	異状なきこと No Damage
			接触抵抗 Contact Resistance	50 milliohms MAXIMUM
4-3-6	耐寒性 Cold Resistance	適合FPC/FFCを嵌合させ、-40±2°Cの雰囲気中に96時間放置後取り出し、1~2時間室温に放置する。 (JIS C0020) Mate FPC/FFC and expose to -40±2°C for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. (JIS C0020)	外観 Appearance	異状なきこと No Damage
			接触抵抗 Contact Resistance	50 milliohms MAXIMUM
4-3-7	耐湿性 Humidity	適合FPC/FFCを嵌合させ、40±2°C 相対湿度 90~95%の雰囲気中に96時間放置後取り出し、30分以内に測定。水滴は拭き取る。 (JIS C0022/MIL-STD-202 試験方法103) Mate FPC/FFC and expose to 40±2°C, relative humidity 90 to 95% for 96 hours. Upon completion of the exposure period, within 30 minutes which the specified measurements shall be performed. ( JIS C0022/MIL-STD-202 Method 103 )	外観 Appearance	異状なきこと No Damage
			接触抵抗 Contact Resistance	50 milliohms MAXIMUM
			耐電圧 Dielectric Strength	4-1-3項 満足の こと Must meet 4-1-3
			絶縁抵抗 Insulation Resistance	50 Megohms MINIMUM

REVISE ON PC ONLY

**A**

SEE SHEET 1 OF 9

TITLE:

1.0 mm PITCH FPC / FFC CONN. NON ZIF ST.  
-LEAD FREE- 製品仕様書

THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION

REV.

DESCRIPTION

DOCUMENT NUMBER

**PS-52808-004**

FILE NAME

PS52808004.doc

SHEET

4 OF 9

EN-37-1(019)



PRODUCT SPECIFICATION



LANGUAGE

JAPANESE  
ENGLISH

項目 Item		条件 Test Condition	規格 Requirement	
4-3-8	温度サイクル Temperature Cycling	適合FPC/FFCを嵌合させ、-55±3°Cに30分、+85±2°Cに30分、これを1サイクルとし、5サイクル繰り返す。但し、温度移行時間は3分以内とする。試験後1~2時間室温に放置する。(JIS C0025) Mate connectors and subject to the following conditions for 5 cycles. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. 1 cycle a) -55±3°C 30minutes b) +85±2°C 30minutes (Transit time shall be with in 3 minutes) (JIS C0025)	外 観 Appearance	異状なきこと No Damage
			接触抵抗 Contact Resistance	50 milliohms MAXIMUM
4-3-9	塩水噴霧 Salt Spray	適合FPC/FFCを嵌合させ、35±2°Cにて重量比 5±1%の塩水を48±4時間噴霧し、試験後常温で水洗いした後、室温で乾燥させる。(JIS C0023/MIL-STD-202 試験方法101) Mate connectors and expose to the following salt mist condition. Upon completion of the exposure period, salt deposits shall be removed by a gentle wash or dip in running water, after which the specified measurements shall be performed. NaCl solution Concentration : 5±1% Spray time : 48±4 hours Ambient temperature : 35±2°C (JIS C0023/MIL-STD-202 Method 101)	外 観 Appearance	異状なきこと No Damage
			接触抵抗 Contact Resistance	50 milliohms MAXIMUM
4-3-10	亜硫酸ガス SO <sub>2</sub> Gas	適合FPC/FFCを嵌合させ、40±2°Cにて50±5ppmの亜硫酸ガス中に24時間放置する。 Mate FPC/FFC and expose them to the following SO <sub>2</sub> gas atmosphere. Temperature 40±2°C Gas Density 50±5ppm Duration 24 hours	接触抵抗 Contact Resistance	50 milliohms MAXIMUM
4-3-11	耐アンモニア性 NH <sub>3</sub> Gas	適合FPC/FFCを嵌合させ、濃度28%のアンモニア水を入れた容器中に40分間放置する。(1Lに対して25mLの割合) Mate FPC/FFC and 40 minutes exposure to NH <sub>3</sub> gas evaporating from 28% Ammonia solution.	外 観 Appearance	異状なきこと No Damage
			接触抵抗 Contact Resistance	50 milliohms MAXIMUM

REVISE ON PC ONLY

**A**

SEE SHEET 1 OF 9

TITLE:

1.0 mm PITCH FPC / FFC CONN. NON ZIF ST.  
-LEAD FREE-  
製品仕様書

REV.

DESCRIPTION

THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION

DOCUMENT NUMBER

**PS-52808-004**

FILE NAME

PS52808004.doc

SHEET

5 OF 9

EN-37-1(019)



PRODUCT SPECIFICATION



LANGUAGE

JAPANESE  
ENGLISH

項目 Item		条件 Test Condition	規格 Requirement	
4-3-12	半田付け性 Solder Ability	端子先端より1.5mm迄、245±5℃の半田に3±0.5秒浸す。 Tip of solder tails into the molten solder (held at 245±5℃) up to 1.5mm from the bottom of the housing for 3±0.5 seconds.	濡れ性 Solder Wetting	浸漬面積の75%以上 75% of immersed area must show no voids, pin holes.
4-3-13	半田耐熱性 Resistance to Soldering Heat	(リフロー時) <u>When reflowing</u> 第7項の条件にて、2回リフローを行う。 Refer to paragraph 7, two times.	外観 Appearance	端子ガタ、割れ等 異状無き事 No Damage
		(手半田) <u>Soldering iron method</u> 端子先端より1.5mm迄、370~400℃の半田ゴテにて、最大5秒加熱する。 1.5mm from terminal tip. Soldering time : 5 seconds MAX. Solder temperature : 370~400℃		

( ) : 参考規格  
Reference Standard

【5. 外観形状、寸法及び材質 PRODUCT SHAPE, DIMENSIONS AND MATERIALS】

図面参照 Refer to the drawing.

【6. 挿抜力及び抜去力 INSERTION / WITHDRAWAL FORCE】

下記のFFCを使用した場合 (参考) In case of used the following FFC (Reference)  
厚さ : 0.3mm Thickness : 0.3mm

極数 Number of Circuit	単位 UNIT	挿入力 (最大値) Insertion Force (MAXIMUM)			抜去力 (最小値) Withdrawal Force (MINIMUM)		
		初回 1st	6回目 6th	10回目 10th	初回 1st	6回目 6th	10回目 10th
4	N (kgf)	11.2 (1.15)	14.2 (1.45)	14.2 (1.45)	0.4 (0.04)	0.3 (0.03)	0.3 (0.03)
5	N (kgf)	12.7 (1.3)	15.6 (1.6)	15.6 (1.6)	0.5 (0.05)	0.4 (0.04)	0.4 (0.04)

REVISE ON PC ONLY		TITLE: 1.0 mm PITCH FPC / FFC CONN. NON ZIF ST. -LEAD FREE- 製品仕様書	
<b>A</b>	SEE SHEET 1 OF 9	THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION	
REV.	DESCRIPTION	DOCUMENT NUMBER <b>PS-52808-004</b>	FILE NAME PS52808004.doc SHEET 6 OF 9



# PRODUCT SPECIFICATION



LANGUAGE

JAPANESE  
ENGLISH

極数 Number of Circuit	単位 UNIT	挿入力 (最大値) Insertion Force (MAXIMUM)			抜去力 (最小値) Withdrawal Force (MINIMUM)		
		初回 1st	6回目 6th	10回目 10th	初回 1st	6回目 6th	10回目 10th
6	N (kgf)	14.2 (1.45)	17.1 (1.75)	17.1 (1.75)	0.6 (0.06)	0.5 (0.05)	0.5 (0.05)
7	N (kgf)	15.6 (1.6)	18.6 (1.9)	18.6 (1.9)	0.7 (0.07)	0.6 (0.06)	0.6 (0.06)
8	N (kgf)	17.1 (1.75)	20.0 (2.05)	20.0 (2.05)	0.8 (0.08)	0.7 (0.07)	0.7 (0.07)
9	N (kgf)	18.6 (1.9)	21.5 (2.2)	21.5 (2.2)	0.9 (0.09)	0.8 (0.08)	0.8 (0.08)
10	N (kgf)	20.0 (2.05)	23.0 (2.35)	23.0 (2.35)	1.0 (0.1)	0.9 (0.09)	0.9 (0.09)
11	N (kgf)	21.5 (2.2)	24.5 (2.5)	24.5 (2.5)	1.1 (0.11)	1.0 (0.1)	1.0 (0.1)
12	N (kgf)	23.0 (2.35)	25.9 (2.65)	25.9 (2.65)	1.2 (0.12)	1.1 (0.11)	1.1 (0.11)
13	N (kgf)	24.5 (2.5)	27.4 (2.8)	27.4 (2.8)	1.3 (0.13)	1.2 (0.12)	1.2 (0.12)
14	N (kgf)	25.9 (2.65)	28.9 (2.95)	28.9 (2.95)	1.4 (0.14)	1.3 (0.13)	1.3 (0.13)
15	N (kgf)	27.4 (2.8)	30.3 (3.1)	30.3 (3.1)	1.5 (0.15)	1.4 (0.14)	1.4 (0.14)
16	N (kgf)	28.9 (2.95)	31.8 (3.25)	31.8 (3.25)	1.6 (0.16)	1.5 (0.15)	1.5 (0.15)
17	N (kgf)	30.3 (3.1)	33.3 (3.4)	33.3 (3.4)	1.7 (0.17)	1.6 (0.16)	1.6 (0.16)
18	N (kgf)	31.8 (3.25)	34.7 (3.55)	34.7 (3.55)	1.8 (0.18)	1.7 (0.17)	1.7 (0.17)
19	N (kgf)	33.3 (3.4)	36.2 (3.7)	36.2 (3.7)	1.9 (0.19)	1.8 (0.18)	1.8 (0.18)
20	N (kgf)	34.7 (3.55)	37.7 (3.85)	37.7 (3.85)	2.0 (0.2)	1.9 (0.19)	1.9 (0.19)
21	N (kgf)	36.2 (3.7)	39.2 (4.0)	39.2 (4.0)	2.1 (0.21)	2.0 (0.2)	2.0 (0.2)
22	N (kgf)	37.7 (3.85)	40.6 (4.15)	40.6 (4.15)	2.2 (0.22)	2.1 (0.21)	2.1 (0.21)
23	N (kgf)	39.2 (4.0)	42.1 (4.3)	42.1 (4.3)	2.3 (0.23)	2.2 (0.22)	2.2 (0.22)
24	N (kgf)	40.6 (4.15)	43.6 (4.45)	43.6 (4.45)	2.4 (0.24)	2.3 (0.23)	2.3 (0.23)
25	N (kgf)	42.1 (4.3)	45.0 (4.6)	45.0 (4.6)	2.5 (0.25)	2.4 (0.24)	2.4 (0.24)
26	N (kgf)	43.6 (4.45)	46.5 (4.75)	46.5 (4.75)	2.6 (0.26)	2.5 (0.25)	2.5 (0.25)
27	N (kgf)	45.0 (4.6)	48.0 (4.9)	48.0 (4.9)	2.7 (0.27)	2.6 (0.26)	2.6 (0.26)

REVISE ON PC ONLY

**A**

SEE SHEET 1 OF 9

TITLE:

1.0 mm PITCH FPC / FFC CONN. NON ZIF ST.

-LEAD FREE-

製品仕様書

THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO  
MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION

DOCUMENT NUMBER

**PS-52808-004**

FILE NAME

PS52808004.doc

SHEET

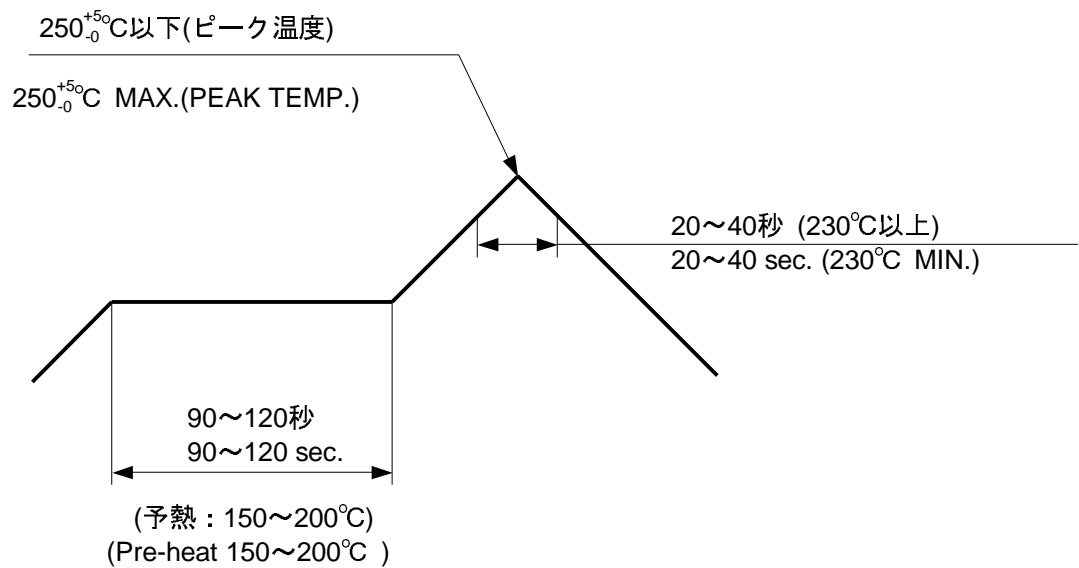
7 OF 9

EN-37-1(019)



極数 Number of Circuit	単位 UNIT	挿入力 (最大値) Insertion Force (MAXIMUM)			抜去力 (最小値) Withdrawal Force (MINIMUM)		
		初回 1st	6回目 6th	10回目 10th	初回 1st	6回目 6th	10回目 10 <sup>th</sup>
28	N (kgf)	46.5 (4.75)	49.4 (5.05)	49.4 (5.05)	2.8 (0.28)	2.7 (0.27)	2.7 (0.27)
29	N (kgf)	48.0 (4.9)	50.9 (5.2)	50.9 (5.2)	2.9 (0.29)	2.8 (0.28)	2.8 (0.28)
30	N (kgf)	49.4 (5.05)	52.4 (5.35)	52.4 (5.35)	3.0 (0.3)	2.9 (0.29)	2.9 (0.29)

【7. 赤外線リフロー条件 INFRARED REFLOW CONDITION】



**温度条件グラフ**  
(温度は基板パターン面)  
**TEMPERATURE CONDITION GRAPH**  
(TEMPERATURE ON BOARD PATTERN SIDE)

注記 : 本リフロー条件に関しては、リフロー装置及び基板などにより条件が異なりますので、事前にリフロー評価の確認をお願いします。  
NOTE : Please check the reflow soldering condition by your own devices beforehand. Because the condition changes by the soldering devisces, p.c.boards, and so on.

REVISE ON PC ONLY		TITLE: 1.0 mm PITCH FPC / FFC CONN. NON ZIF ST. -LEAD FREE- 製品仕様書	
<b>A</b>	SEE SHEET 1 OF 9	THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION	
REV.	DESCRIPTION	FILE NAME PS52808004.doc	SHEET 8 OF 9
DOCUMENT NUMBER <b>PS-52808-004</b>		EN-37-1(019)	





# PRODUCT SPECIFICATION



LANGUAGE

JAPANESE  
ENGLISH

REV.	REV. RECORD	DATE	EC NO.	WRITTEN BY :	CHECKED BY :
A	RELEASED	'04/02/16	J2004-2426	N.AIDA	K.TOJO

REVISE ON PC ONLY		TITLE: 1.0 mm PITCH FPC / FFC CONN. NON ZIF ST. <b>-LEAD FREE-</b> 製品仕様書	
<b>A</b>	SEE SHEET 1 OF 9		
THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION			
REV.	DESCRIPTION		
DOCUMENT NUMBER <b>PS-52808-004</b>		FILE NAME PS52808004.doc	SHEET 9 OF 9