



DUAL CONTACT
ZIF BACK-FLIP TYPE

BL306 SERIES

0.3MM PITCH
0.6MM HEIGHT
FPC CONNECTOR



大 韓 電 子 有 限 公 司
Kingmate Electronic Co., Ltd.

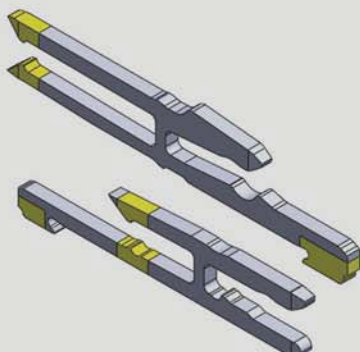
BL306 SERIES

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頂尖科技力 品質再超越

採用鍍金防爬錫設計，提高了防止爬錫的性能



► 鍍金防爬錫功能

端子設計經反覆修正，作動時應力分布均勻



► BL306-C1應力分析



► BL306-C2應力分析

概述 INTRODUCTION

BL306系列產品具有優良的產品規格，0.3mm間距，超低高度0.6毫米，和後壓式需插入力設計，它是便攜式電子產品中使用的電子連接器的最佳選擇。

BL306 Series product has excellent product specification, 0.3mm pitch, ultra-low height of 0.6mm, and Back-Flip ZIF design, it's the best choice of electronic connectors to be used in portable electronic products.

BL306系列產品特性

- 薄型化設計，節省板上高度
- 雙接觸點
- 便利的排線組裝導角設計
- 後壓式設計，縮短組裝工時
- 厚排線設計，插入不容易彎曲變形
- 避免排線鬆脫
- Ultra-thin, space saving design
- Dual Contact
- Smooth FPC cable insertion guide
- Back-Flip design, reduced assembly time
- Thick FPC cable design, not easy to be bending and deformation when insert
- Prevent FPC cable from falling out

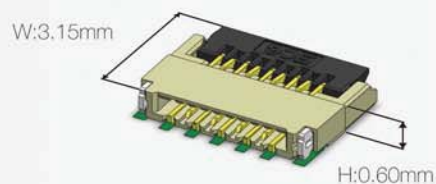
應用產品 APPLICATION PRODUCTS

智慧型手機、平板電腦、穿戴式設備、數位相機、面板

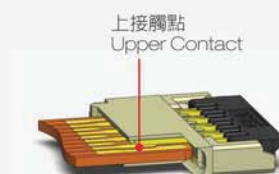
FEATURES DESCRIPTION

特色描述

◆ 薄型化設計，節省板上高度 Ultra-thin, space saving design

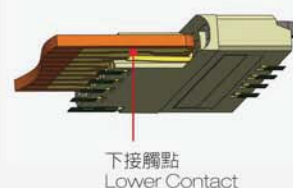


◆ 雙接觸點 Dual Contact



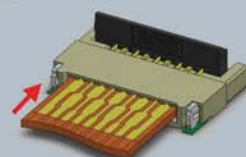
▲ FPC Cable金手指朝上使用

▼ FPC Cable金手指朝下使用

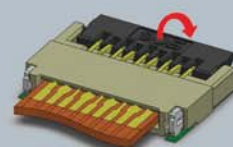


◆ 後壓式設計，縮短組裝工時 Back-Flip design, reduced assembly time

連接器上蓋呈打開狀態，可直接將排線插入
The Actuator is normal opening, direct to insert FPC.



蓋子向下旋轉壓合
Press the Actuator.

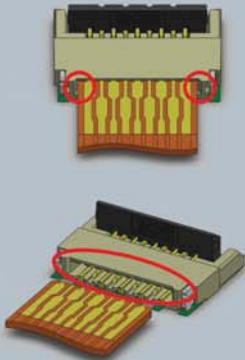




產品專利說明
台灣 M445278
中國 2963644
日本 3179769
美國、韓國 專利申請中

便利的排線組裝導角設計

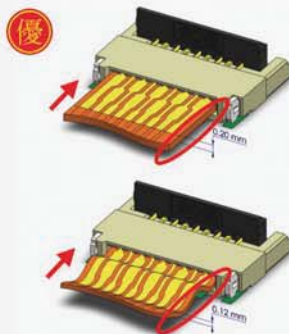
Smooth FPC cable insertion guide



主體缺口及主體兩側導角結構，讓操作者容易將排線組裝定位
Easy to insert FPC cable with the indentation and guide in both side of housing

厚排線設計，插入不容易彎曲變形

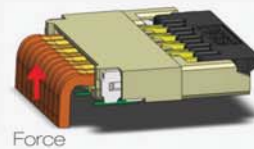
Thick FPC cable design, not easy to be bending and deformation when insert.



排線厚度0.20mm設計，較排線厚度0.12mm不易彎曲變形。
The FPC cable thickness 0.20mm design than thickness 0.12mm is not easy to be bending and deformation when insert.

後壓式避免排線鬆脫設計

Back-Flip design, prevent FPC cable falling out

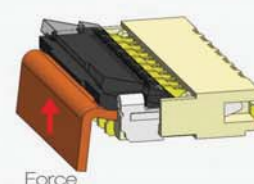


▲ 後壓式 Back-Flip Type

當排線彎折時，塑膠本體可有效抵擋排線翻折的應力，不會有掀蓋和排線脫落現象。
Prevent FPC falling out while FPC is bending.

▼ 前掀式 Front-Flip Type

當排線彎折時，蓋子有被翻折的應力頂開的疑慮，造成蓋子掀開及排線脫落。
This actuator slider probably to be lifted while FPC is bending.



ORDERING INFORMATION

產品編碼

BL 3 06 - xx S 3 1 - TA H 0
1 2 3 4 5 6 7 8 9 10

1 系列名稱 Series name	BL
2 端子間距 Pitch between contacts	3 - Pitch=0.3mm
3 高度 Height	06 - Height=0.6mm
4 接點數量 Number of contacts	07, 09, 11, 13, 15, 17, 21, 23, 25, 27, 31, 33, 35, 37, 39, 45, 51
5 電鍍方式 Plating	S - 鍍底選鍍金1 μ " ~3 μ " / 1 μ " ~3 μ " Gold Flash (Nickel Barrier)
6 對插方式 Mating	3 - 後壓式 / Back-Flip Type
7 組合樣式 Assembly style	1 - 臥式/雙接觸規格 / Right Angle/Dual Contact Type
8 包裝方式 Packaging	TA - 帶狀捲式包裝 / Embossed Tape
9 無鹵 Halogen Free	H - 無鹵 / Halogen Free
10 延伸性版本 Extended version	0 - 標準品 / Standard

材 質
Material

絕緣膠體 Housing

L.C.P
顏色 Color : 米色 Beige
耐燃等級(UL94V-0) / Flammability Rating (UL94V-0)

蓋 子 Actuator

L.C.P
顏色 Color : 黑色 Black
耐燃等級(UL94V-0) / Flammability Rating (UL94V-0)

導電端子 Contacts

磷青銅 / Phosphor Bronze

固 定 片 Solder Pad

磷青銅 / Phosphor Bronze

電鍍方式 Plating

鍍底選鍍金
1 μ " ~3 μ " / 1 μ " ~3 μ " Gold Flash (Nickel Barrier)

等級 Rating

項 目 ITEM	規 格 STANDARD
最大容許電壓 Operating Voltage (Max.)	50V AC(rms)
最大容許電流 Current Rating (Max.)	0.2A DC
使用溫度範圍 Operating Temperature range	-55°C ~ +85°C (包含電流通過所產生的上昇溫度) -55°C ~ +85°C (Including terminal temperature rise)
項 目 ITEM	規 格 STANDARD
使用溼度範圍 Operating humidity range	相對濕度85%以下 Relative humidity 85% max. (No condensation)
保存溫度範圍 Storage temperature range	-40°C ~ +50°C
保存濕度範圍 Storage humidity range	相對濕度85%以下 Relative humidity 85% max.

PERFORMANCE

性能

電氣特性 ELECTRICAL PERFORMANCE		
項 目 ITEM	測試條件 TEST CONDITION	規格 REQUIRMENT
接觸阻抗 Contact Resistance	將樣品與適合之FPC連接，測試電壓20mV，限電流10mA下進行阻抗測試。 Mate applicable FPC and measure by dry circuit, 20mV Max, 10mA.	160 mΩ 以下 160 mΩ Max.
絕緣阻抗 Insulation Resistance	將樣品與適合之FPC連接，提供相鄰端子間測試電壓500V DC進行絕緣阻抗測試。 Mate applicable FPC and apply 500V DC between adjacent terminal or ground.	50 MΩ 以上. 50 MΩ Min.
耐電壓 Dielectric Strength	將樣品與適合之FPC連接，相鄰端子間需可承受150V AC(rms) 1分鐘。 Mate applicable FPC, apply 150V AC(rms) for 1 minute between adjacent terminal or ground.	目視外觀無任何損壞異狀 No Breakdown
機械特性 MECHANICAL PERFORMANCE		
FPC保持力 FPC Retention Force	插入0.2mm標準FPC，將蓋子蓋上，以操作速度每分鐘位移25±3mm進行FPC保持力測試。 Insert the actuator, pull 0.2mm of the FPC at a rate of 25±3mm per minute.	See Retention Force table

FPC RETENTION FORCE

FPC保持力

No. of Contacts	Unit	Retention Force (Min.) FPC=0.20mm				No. of Contacts	Unit	Retention Force (Min.) FPC=0.20mm			
		1 st	5 th	10 th	15 th			1 st	5 th	10 th	15 th
07	kgf	0.147	0.133	0.119	0.105	27	kgf	0.567	0.513	0.459	0.405
09	kgf	0.189	0.171	0.153	0.135	31	kgf	0.651	0.589	0.527	0.465
11	kgf	0.231	0.209	0.187	0.165	33	kgf	0.693	0.627	0.561	0.495
13	kgf	0.273	0.247	0.221	0.195	35	kgf	0.735	0.665	0.595	0.525
15	kgf	0.315	0.285	0.255	0.225	37	kgf	0.777	0.703	0.629	0.555
17	kgf	0.357	0.323	0.289	0.255	39	kgf	0.819	0.741	0.663	0.585
21	kgf	0.441	0.399	0.357	0.315	45	kgf	0.945	0.855	0.765	0.675
23	kgf	0.483	0.437	0.391	0.345	51	kgf	1.071	0.969	0.867	0.765
25	kgf	0.525	0.475	0.425	0.375						

PERFORMANCE

性能

環境特性及其他性能 ENVIRONMENTAL PERFORMANCE AND OTHERS

項目 ITEM	測試條件 TEST CONDITION	規格 REQUIREMENT	
蓋子往返操作測試 Repeated Actuator Insertion / Withdrawal	將蓋子與FPC反覆連接，以每分鐘小於10 cycles的速度，連續操作15 cycles。 Insert and withdraw actuator up to 15 cycles at the speed rate of less than 10 cycles/minute.	接觸阻抗 Contact Resistance	160 mΩ 以下 160 mΩ Max.
溫昇 Temperature Rise	量測通過FPC最大容許電流時，樣品接觸點之溫昇。 Mate applicable FPC and measure the temperature rise of contact when the maximum AC rated current is passed.	溫昇 Temperature Rise	30°C 以下 30°C Max.
耐振性 Vibration	通過DC電流1mA，位移相對距離1.5mm，振動週期10~55~10 Hz在1分鐘內，持續2小時，方向在X,Y,Z軸做測試。 Mate connectors and subject to the following vibration conditions, for period of 2 hours in each of 3 mutually perpendicular axes, passing DC 1mA during the test. Amplitude : 1.5mm P-P Frequency : 10~55~10 Hz in 1 minute. Duration : 2 hours in each of X,Y,Z axes.	外觀 Appearance	目視外觀無任何損壞異狀 No Damage
		接觸阻抗 Contact Resistance	160 mΩ 以下 160 mΩ Max.
		瞬間斷電 Discontinuity	1 μ sec 以下 1 μ sec Max.
耐衝擊性 Shock	將樣品與適合之FPC連接，通過DC 1 mA測試條件，連續測試3次。 在X、Y、Z 3軸6個垂直方向施予重力加速度 490m/s ² {50G} 衝擊。 Mate applicable FPC 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 : 490m/s ² {50G}	外觀 Appearance	目視外觀無任何損壞異狀 No Damage
		接觸阻抗 Contact Resistance	160 mΩ 以下 160 mΩ Max.
		瞬間斷電 Discontinuity	1 μ sec. 以下 1 μ sec. Max.
耐熱性 Heat Resistance	將樣品與適合之FPC連接，置於環境溫度85±2°C測試時間96小時，再置放於室溫下1~2小時。 Mate applicable FPC 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.	外觀 Appearance	目視外觀無任何損壞異狀 No Damage
		接觸阻抗 Contact Resistance	160 mΩ 以下 160 mΩ Max.
耐寒性 Cold Resistance	將樣品與適合之FPC連接，置於環境溫度-40±2°C，測試時間96小時，再置放於室溫下1~2小時。 Mate applicable FPC 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.	外觀 Appearance	目視外觀無任何損壞異狀 No Damage
		接觸阻抗 Contact Resistance	160 mΩ 以下 160 mΩ Max.

PERFORMANCE

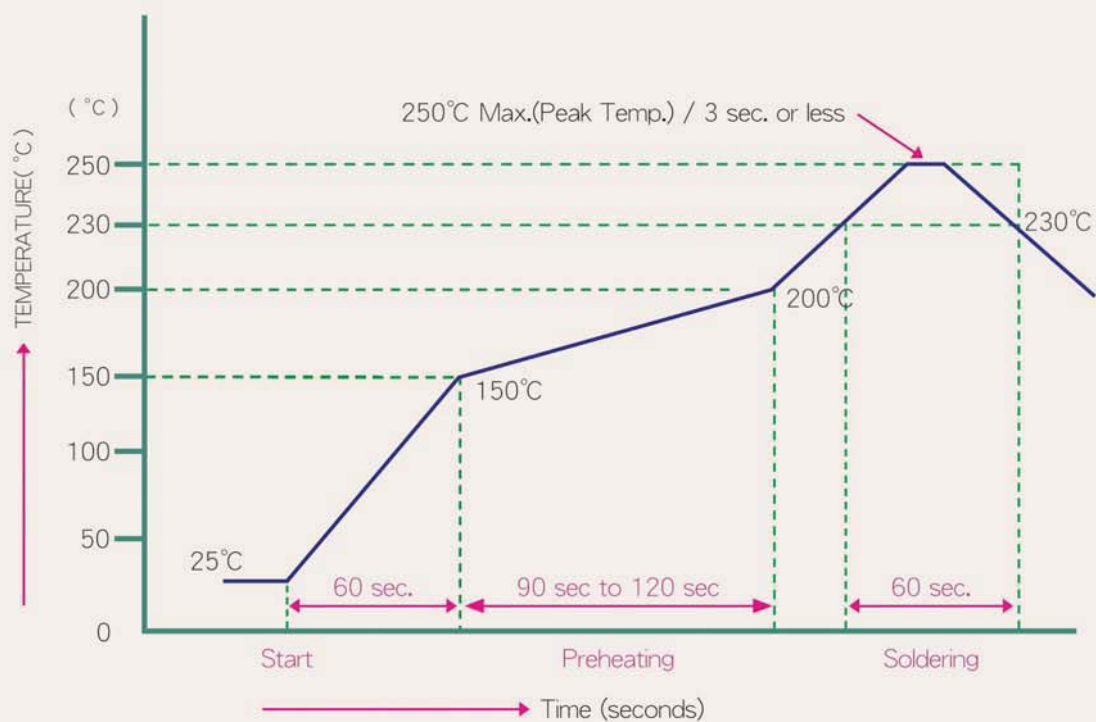
性能

環境特性及其他性能 ENVIRONMENTAL PERFORMANCE AND OTHERS

項 目 ITEM	測試條件 TEST CONDITION	規格 REQUIREMENT	
耐濕性 Humidity	將樣品與適合之FPC連接，置於環境溫度 $40 \pm 2^{\circ}\text{C}$ ，相對溼度90~95%，測試時間96小時，再置放於室溫下1~2小時。 Mate applicable FPC and expose to $40 \pm 2^{\circ}\text{C}$, relative humidity 90 to 95% 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.	外觀 Appearance	目視外觀無任何損壞異狀 No Damage
		接觸阻抗 Contact Resistance	160 mΩ 以下. 160 mΩ Max.
		耐電壓 Dielectric Strength	需能符合耐電壓測試 No Breakdown
		絕緣阻抗 Insulation Resistance	20 MΩ 以上. 20 MΩ Min.
冷熱衝擊 Temperature Cycling	將樣品與適合之FPC連接，承受5 cycles冷熱衝擊後，置放於室溫下1~2小時。 Mate applicable FPC 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 time : a) $-55 \pm 3^{\circ}\text{C}$ 30minutes b) $+85 \pm 3^{\circ}\text{C}$ 30minutes (Transit time shall be with in 3 minutes)	外觀 Appearance	目視外觀無任何損壞異狀 No Damage
		接觸阻抗 Contact Resistance	160 mΩ 以下. 160 mΩ Max.
鹽水噴霧 Salt Spray	將樣品與適合之FPC連接，使用 $5 \pm 1\%$ 濃度鹽水，測試溫度 $35 \pm 2^{\circ}\text{C}$ ，測試時間 48 ± 4 小時，後於室溫下使用清水沖洗後再乾燥。 Mate applicable FPC and expose to the following salt mist conditions. 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 : $5 \pm 1\%$ Spray time : 48 ± 4 hours Ambient temperature : $35 \pm 2^{\circ}\text{C}$	外觀 Appearance	目視外觀無任何損壞異狀 No Damage
		接觸阻抗 Contact Resistance	160 mΩ 以下. 160 mΩ Max.
焊錫性 Solderability	錫溫 $245 \pm 5^{\circ}\text{C}$ ，將導電端子浸入錫爐液面至Housing距離錫面0.2mm位置，焊錫時間 3 ± 0.5 秒。 Tip of solder tails and fitting nails into the molten solder (held at $245 \pm 5^{\circ}\text{C}$) up to 0.2mm from the bottom of the housing for 3 ± 0.5 seconds.	潤濕性 Solder Wetting	潤濕面積95%以上，並不得有漏焊針孔現象 95% of immersed area must show no voids, pin holes.
焊錫耐熱性 Resistance to Soldering Heat	使用紅外線迴焊時請參考P8，紅外線迴焊溫度曲線 When reflowing...Refer to P8, INFRARED REFLOW CONDITION 使用烙鐵手焊時須可符合下述鐸錫條件 Soldering iron method 0.2mm from terminal tip and fitting nail tip. Soldering time : 5 seconds Max. Solder temperature : $370 \sim 400^{\circ}\text{C}$	外觀 Appearance	目視外觀無任何損壞異狀 No Damage

INFRARED REFLOW CONDITION

紅外線迴焊溫度曲線

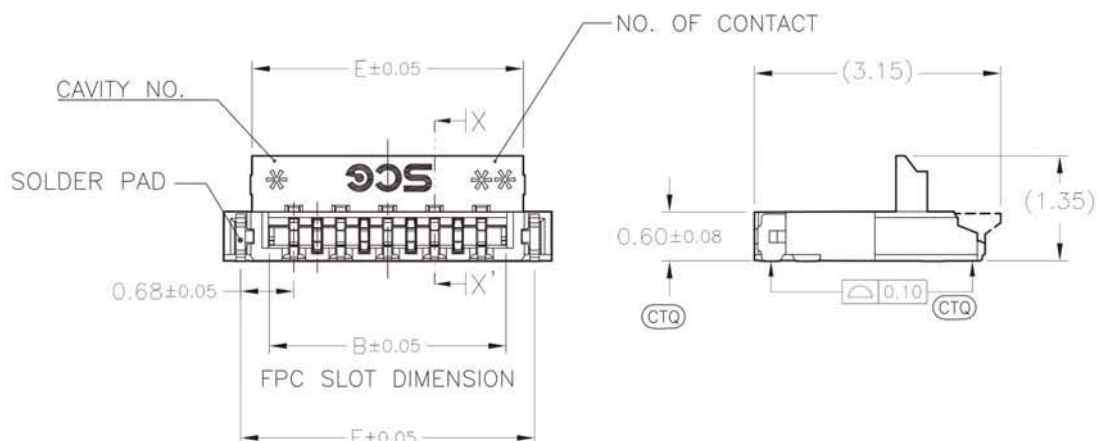
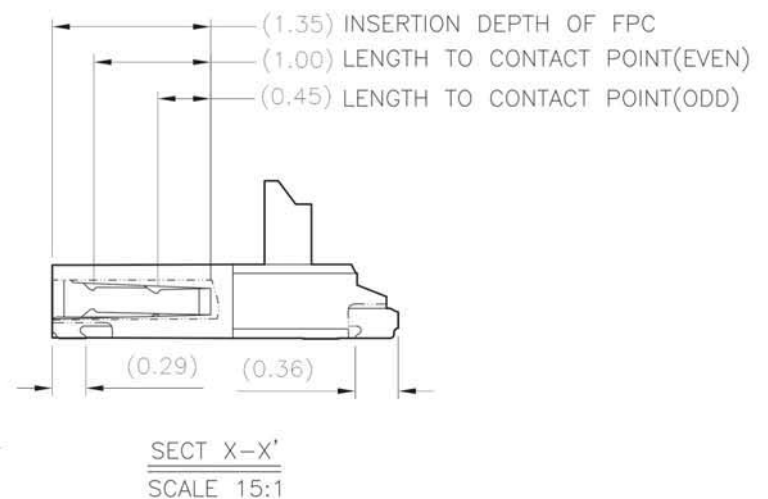
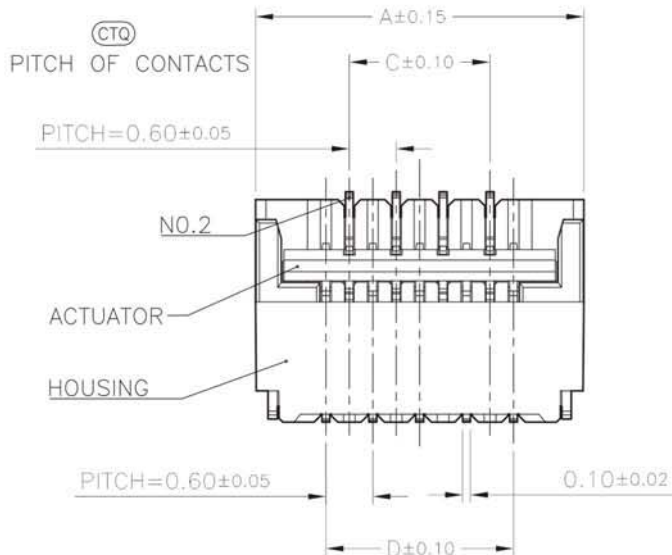


溫度條件TEMPERATURE CONDITION GRAPH
(基板表面溫度) (TEMPERATURE ON BOARD PATTERN SIDE)

CONNECTOR DIMENSIONS

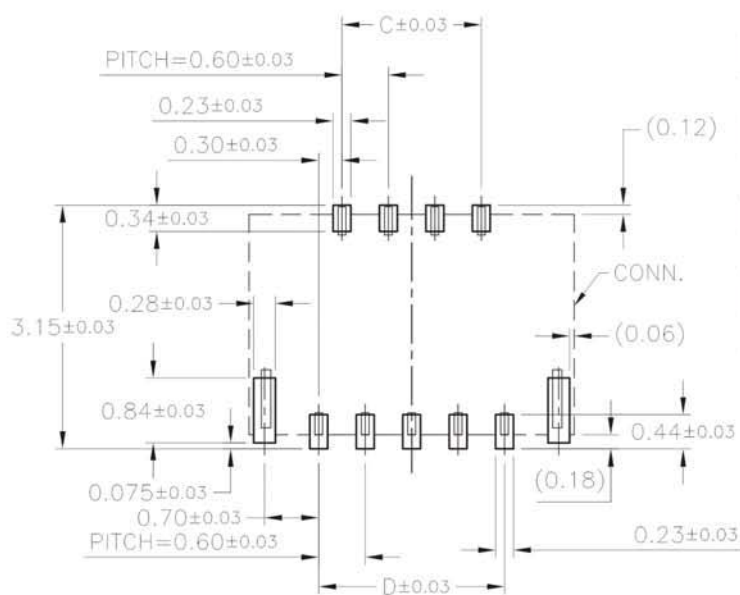
外觀尺寸

NO.OF CONTACTS	PART NUMBER	DIM. A	DIM. B	DIM. C	DIM. D	DIM. E	DIM. F
07	BL306-07S31	3.60	2.43	1.20	1.80	2.87	3.16
09	BL306-09S31	4.20	3.03	1.80	2.40	3.47	3.76
11	BL306-11S31	4.80	3.63	2.40	3.00	4.07	4.36
13	BL306-13S31	5.40	4.23	3.00	3.60	4.67	4.96
15	BL306-15S31	6.00	4.83	3.60	4.20	5.27	5.56
17	BL306-17S31	6.60	5.43	4.20	4.80	5.87	6.16
21	BL306-21S31	7.80	6.63	5.40	6.00	7.07	7.36
23	BL306-23S31	8.40	7.23	6.00	6.60	7.67	7.96
25	BL306-25S31	9.00	7.83	6.60	7.20	8.27	8.56
27	BL306-27S31	9.60	8.43	7.20	7.80	8.87	9.16
31	BL306-31S31	10.80	9.63	8.40	9.00	10.07	10.36
33	BL306-33S31	11.40	10.23	9.00	9.60	10.67	10.96
35	BL306-35S31	12.00	10.83	9.60	10.20	11.27	11.56
37	BL306-37S31	12.60	11.43	10.20	10.80	11.87	12.16
39	BL306-39S31	13.20	12.03	10.80	11.40	12.47	12.76
45	BL306-45S31	15.00	13.83	12.60	13.20	14.27	14.56
51	BL306-51S31	16.80	15.63	14.40	15.00	16.07	16.36

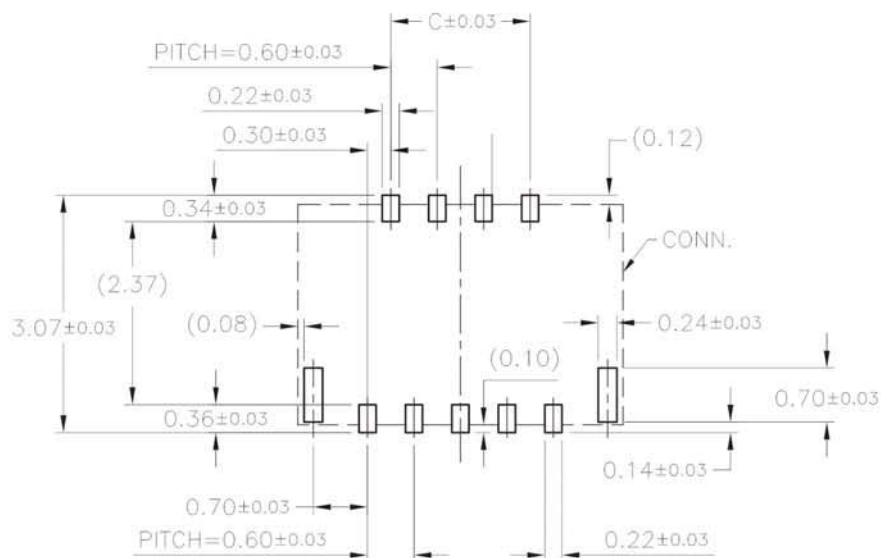


PCB LAYOUT

PCB尺寸



↑
FPC INSERT DIRECTION
PCB LAYOUT



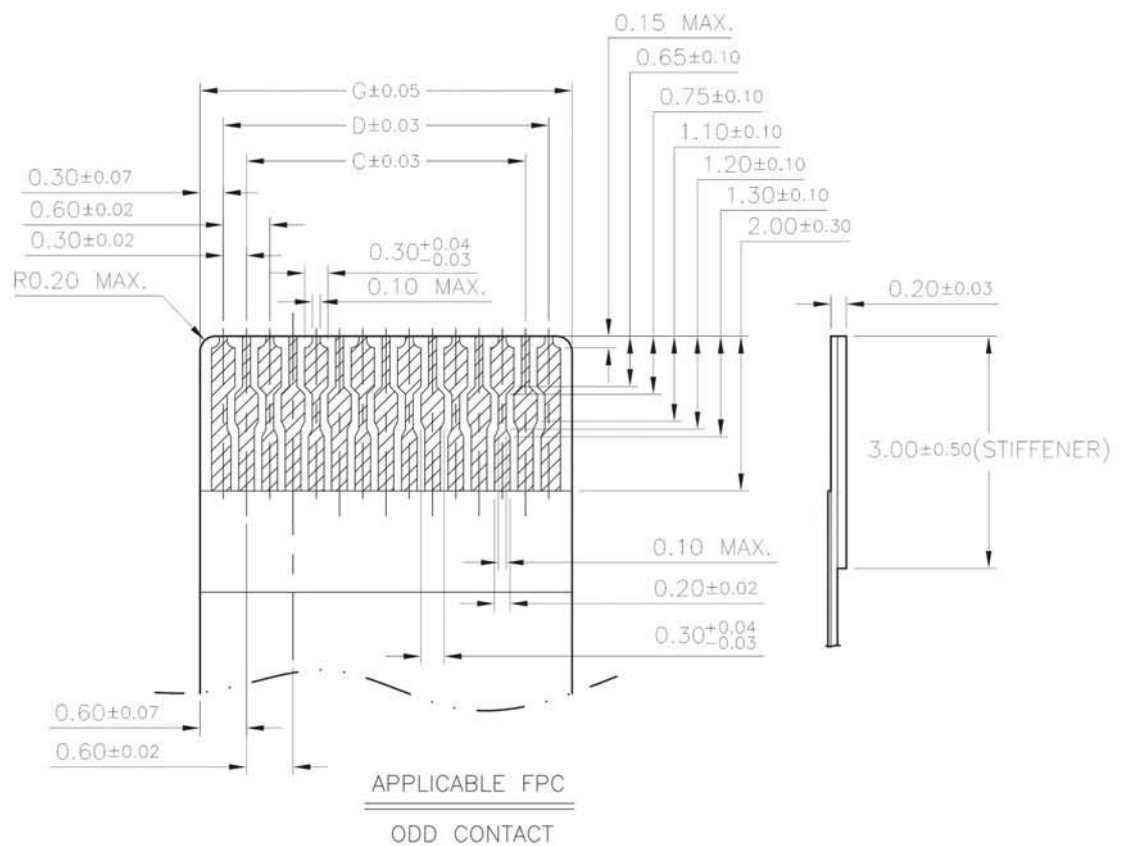
RECOMMENDED METAL MASK PATTERN(THICKNESS 0.1mm)

NO.OF CONTACTS	PART NUMBER	DIM. C	DIM. D
07	BL306-07S31	1.20	1.80
09	BL306-09S31	1.80	2.40
11	BL306-11S31	2.40	3.00
13	BL306-13S31	3.00	3.60
15	BL306-15S31	3.60	4.20
17	BL306-17S31	4.20	4.80
21	BL306-21S31	5.40	6.00
23	BL306-23S31	6.00	6.60
25	BL306-25S31	6.60	7.20
27	BL306-27S31	7.20	7.80
31	BL306-31S31	8.40	9.00
33	BL306-33S31	9.00	9.60
35	BL306-35S31	9.60	10.20
37	BL306-37S31	10.20	10.80
39	BL306-39S31	10.80	11.40
45	BL306-45S31	12.60	13.20
51	BL306-51S31	14.40	15.00

FPC RECOMMENDED DIMENSIONS DIAGRAM

FPC建議尺寸圖

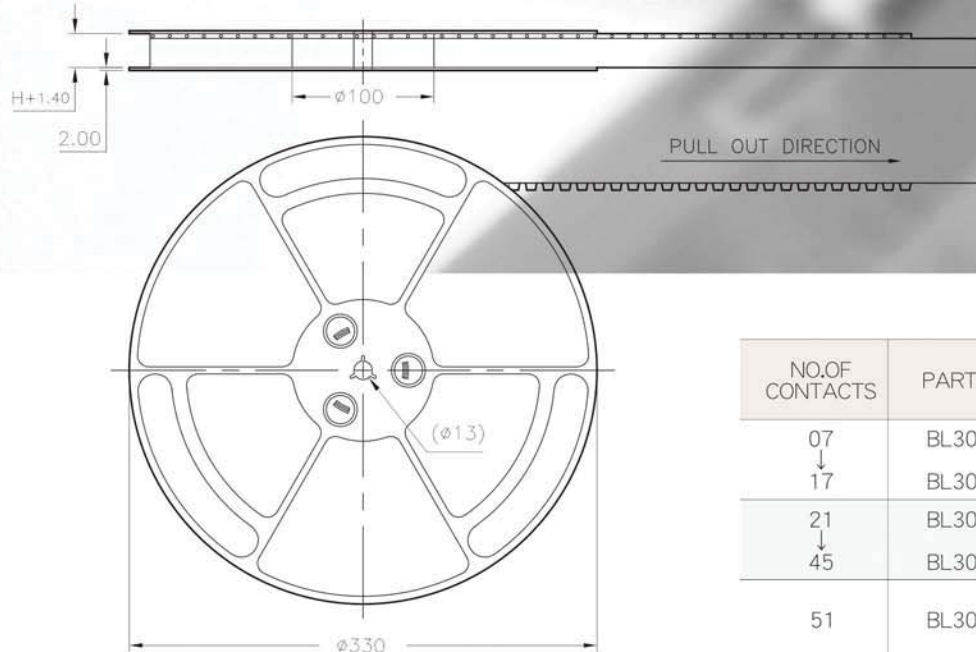
NO.OF CONTACTS	PART NUMBER	DIM. C	DIM. D	DIM. G
07	BL306-07S31	1.20	1.80	2.40
09	BL306-09S31	1.80	2.40	3.00
11	BL306-11S31	2.40	3.00	3.60
13	BL306-13S31	3.00	3.60	4.20
15	BL306-15S31	3.60	4.20	4.80
17	BL306-17S31	4.20	4.80	5.40
21	BL306-21S31	5.40	6.00	6.60
23	BL306-23S31	6.00	6.60	7.20
25	BL306-25S31	6.60	7.20	7.80
27	BL306-27S31	7.20	7.80	8.40
31	BL306-31S31	8.40	9.00	9.60
33	BL306-33S31	9.00	9.60	10.20
35	BL306-35S31	9.60	10.20	10.80
37	BL306-37S31	10.20	10.80	11.40
39	BL306-39S31	10.80	11.40	12.00
45	BL306-45S31	12.60	13.20	13.80
51	BL306-51S31	14.40	15.00	15.60



REEL DIMENSIONS

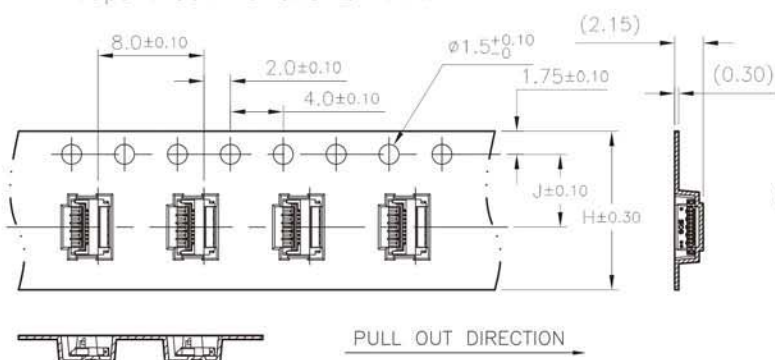
包裝尺寸圖

EMBOSSED TAPE PACKAGING BL306 SERIES



NO.OF CONTACTS	PART NUMBER	DIM. H	DIM. I	DIM. J
07 ↓ 17	BL306-07S31 ↓ BL306-17S31	16	—	7.5
21 ↓ 45	BL306-21S31 ↓ BL306-45S31	24	—	11.5
51	BL306-51S31	32	28.4	14.2

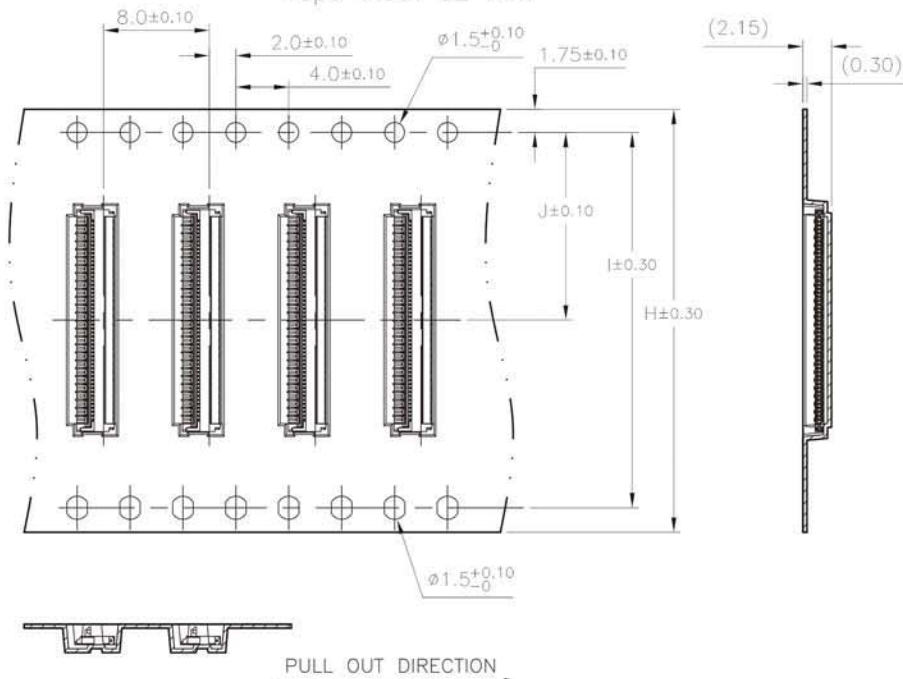
Tape width 16 and 24 mm



NOTE:

- 1.10 SPROCKET HOLE PITCH CUMULATIVE TOLERANCE $\pm 0.2\text{mm}$
- 2.CARRIER CAMBER IS WITHIN 1 mm IN 250mm.
- 3.MATERIAL : BLACK CONDUCTIVE POLYSTYRENE ALLOY.
- 4.THICKNESS : $0.3 \pm 0.05\text{mm}$.
- 5.COMPONENT LOAD PER 13" REEL : 4000 PCS

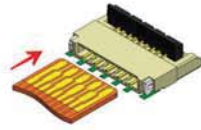
Tape width 32 mm



◆ 排線組裝說明

STEP.1

將FPC排線平行插入連接器中。



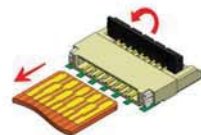
STEP.2

將FPC排線完全插入且沒有移動，往下輕壓上蓋至定位。



STEP.3

掀起上蓋，將FPC排線退出。



INSTRUCTION UPON USAGE

操作注意事項



警告說明



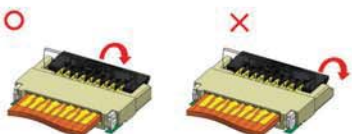
當FPC排線未插入連接器時，不可往下壓上蓋。



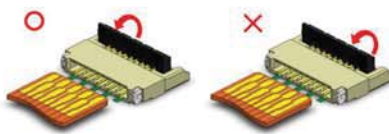
旋轉的角度不可大於90度。



PCB 板平整度必須在0.1mm Max.。



施壓的力量應該要平均且要上蓋的中心部位。



掀蓋的力量應該要平均且要上蓋的中心部位。



在PCB 上板(過迴焊爐)之前，禁止將蓋子蓋下。

TREASURE RESOURCES,

Defend the Earth

珍惜資源，守護地球



SCG

大 樟 電 子 有 限 公 司

Kingmate Electronic Co., Ltd.

台灣新竹縣竹北市光明六路東一段243號14樓
14F., No.243, Dong Sec. 1, Guangming 6th Rd.,
Jhubei City, Hsinchu County 30264, Taiwan
TEL: 886-3-658-7281 FAX: 886-3-658-7151
Website: www.kingmate.com.tw

大陸工廠：

廣東慎凱巨電子科技有限公司

廣東省東莞市寮步鎮繆邊村祥豐路2號

