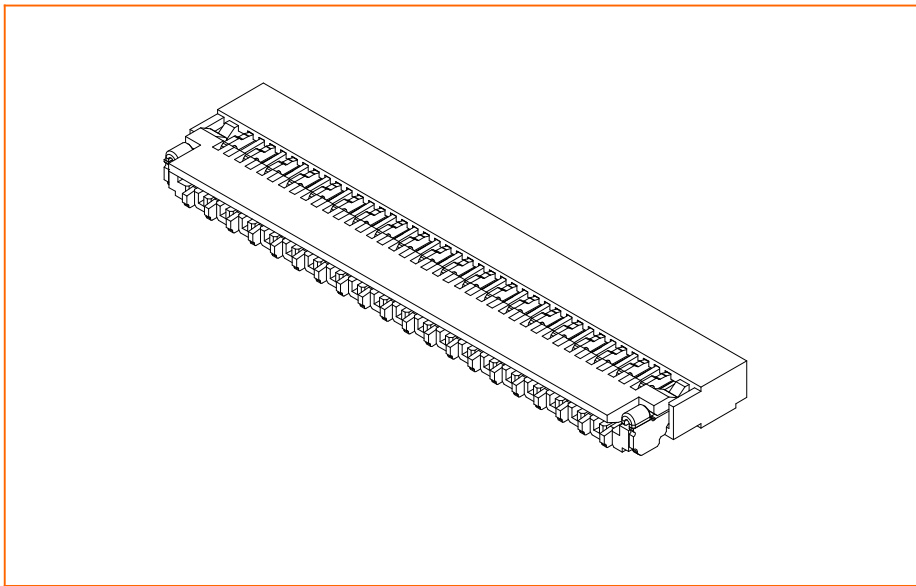


**Product Specification**

深圳臺華達科技有限公司 **SHENZHEN THD Electronics Co., Ltd.**  
T



**Product.No**

**THD0310 – xxCL – GF**

**Pitch=0.30mm,H=1.0mm FPC Connector (Front-Flip Lower Contact)**

|      |             |
|------|-------------|
| A    | Release     |
| Rev. | Description |

**Approved Signatures**

|                      |                   |
|----------------------|-------------------|
| ■Prepared By : JIM   | ■Date: 2010.06.24 |
| ■Checked By : JIM    | ■Date: 2010.06.24 |
| ■Approved By : Jacky | ■Date: 2010.06.24 |

## ■ Scope

This specification covers the 0.3 mm Pitch FPC Connector THD0310 series.

## ■ Ordering information

### THD0310 - xx CL - GF

①                      ②                      ③                      ④

|   |                                 |   |   |
|---|---------------------------------|---|---|
| ① | Series name : THD0310           | ④ | Plating :<br>GF= 1μ"~3μ" Gold Flash<br>G3= 3μ" Gold over Nickel<br>G5= 5μ" Gold over Nickel |
| ② | Number of contacts : 9 TO 71    |   |   |
| ③ | Contact type : CL:Lower contact |   |   |

## ■ Rating

| Item                        | Standard  |
|-----------------------------|---|
| Voltage Rating(Max.)        | 30V AC  |
| Current Rating(Max.)        | 0.2A DC   |
| Operating Temperature Range | -25°C ~ +85°C (Including terminal temperature rise) |

## ■ Material

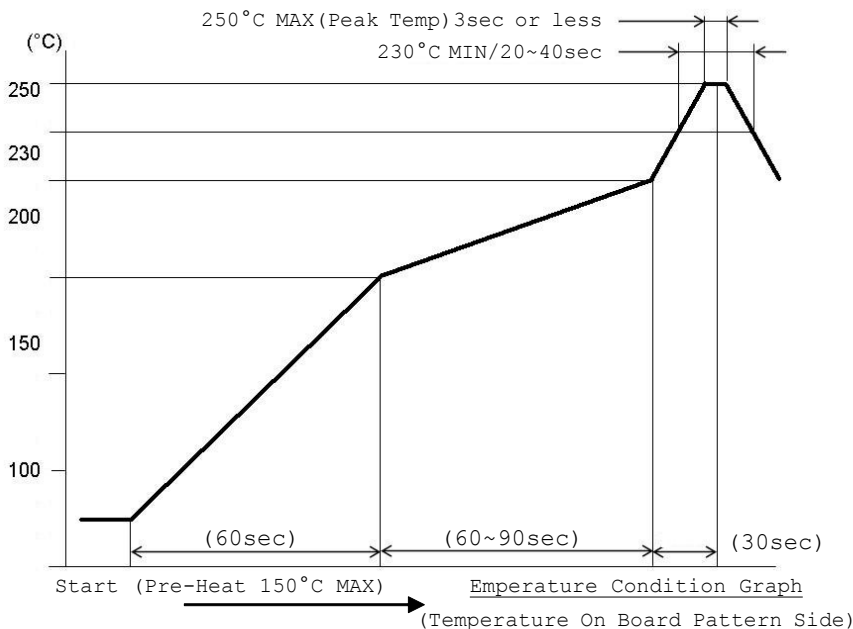
| Housing         | Actuator        | Terminal     | Solder pin   | Plating                     |
|-----------------|-----------------|--------------|--------------|-----------------------------|
| L.C.P (UL94V-0) | L.C.P (UL94V-0) | Copper alloy | Copper alloy | 1μ"~3μ"<br>Gold over Nickel |
| Color : White   | Color : Black   |              |              |                             |

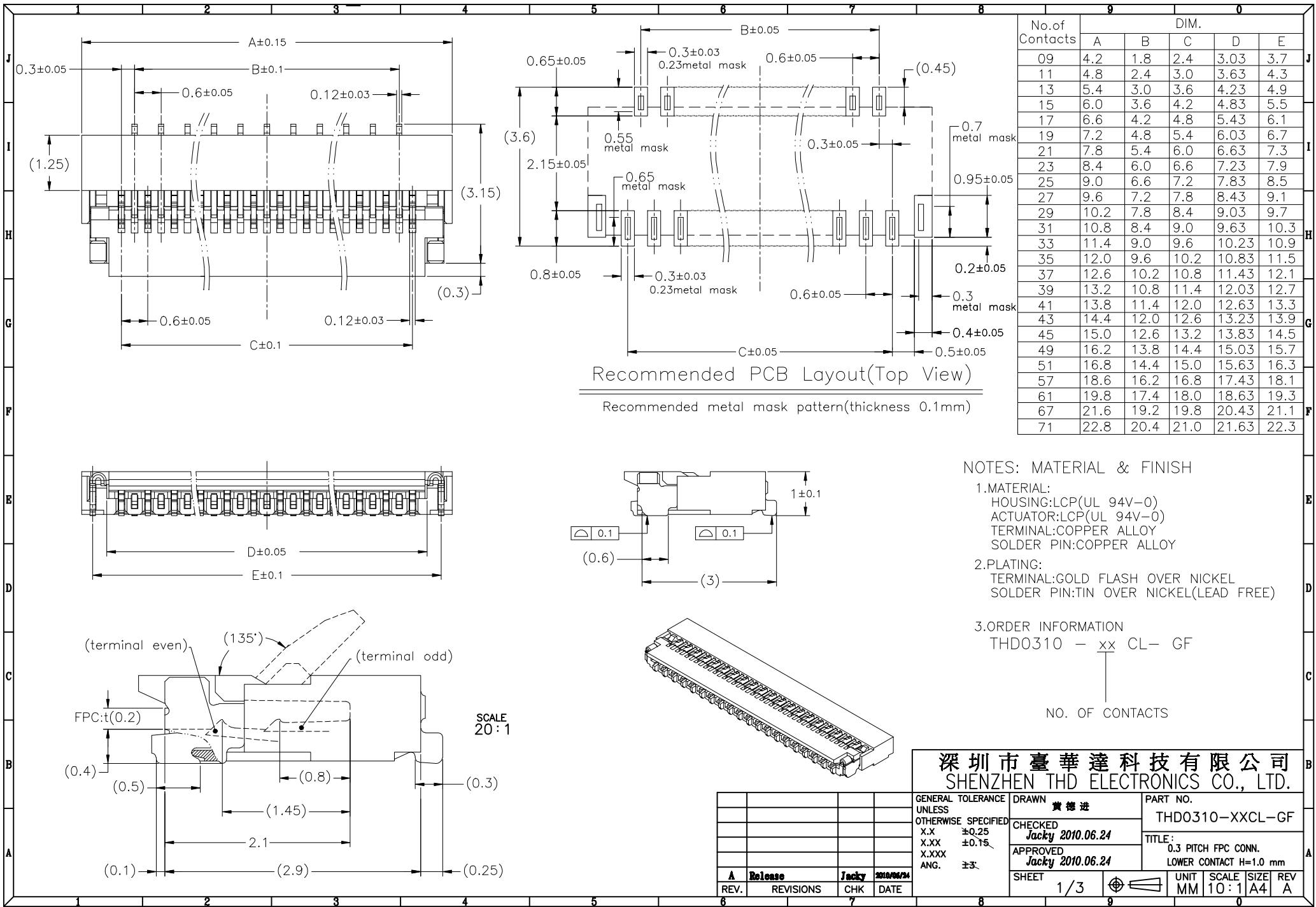
## ■ Performance

| Item                     | Test Condition  | Specification                |             |
|--------------------------|---|------------------------------|-------------|
| Contact Resistance       | Mate applicable FPC and measure by dry circuit, 20mV Max, 10mA.   | 30 mΩ Max.                   |             |
| Insulation Resistance    | Mate applicable FPC and apply 500V DC between adjacent terminal or ground.  | 100 MΩ Min.                  |             |
| Dielectric Strength      | Mate applicable FPC, apply 250V AC(rms) for 1 minute between adjacent terminal or ground.   | No Breakdown                 |             |
| FPC Retention Force      | Insert the actuator, pull the FPC at a rate of 25±3mm per minute.   | Per pin x 0.03N Min.         |             |
| Terminal Retention Force | Apply axial pull out force at the rate of 25±3 mm/minute on the terminal assembled in the housing.  | Per pin x 0.1Kgf {0.3N} Min. |             |
| Vibration                | 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.<br><br>Amplitude : 1.5mm P-P<br>Frequency : 10~55~10 Hz in 1 minute.<br>Duration : 2 hours in each of X,Y,Z axes.  | Appearance                   | No Damage   |
|                          |   | Contact Resistance           | 100 mΩ Max. |
|                          |   | Discontinuity                | 1 μsec Max. |
| Shock                    | 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.<br><br>Peak value : 490m/s <sup>2</sup> {50G}   | Appearance                   | No Damage   |
|                          |   | Contact Resistance           | 100 mΩ Max. |
|                          |   | Discontinuity                | 1 μsec Max. |
| Salt Spray               | 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.<br><br>NaCl solution<br>Concentration : 5 ± 1%<br>Spray time : 48 ± 4 hours<br>Ambient temperature : 35 ± 2°C | Appearance                   | No Damage   |
|                          |   | Contact Resistance           | 100 mΩ Max. |

| Item                    | Test Condition  | Specification         |   |
|-------------------------|---|-----------------------|---|
| Heat Resistance         | 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.  | Appearance            | No Damage   |
|                         |   | Contact Resistance    | 100 mΩ Max.   |
| Cold Resistance         | 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.   | Appearance            | No Damage   |
|                         |   | Contact Resistance    | 100 mΩ Max.   |
| Humidity                | Mate applicable FPC and expose to 60 ± 2°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.   | Appearance            | No Damage   |
|                         |   | Contact Resistance    | 100 mΩ Max.   |
|                         |   | Dielectric Strength   | No Breakdown  |
|                         |   | Insulation Resistance | 50 MΩ Min.  |
| Temperature Rise        | Mate applicable FPC and measure the temperature rise of contact when the maximum AC rated current is passed.  | Temperature rise      | 30°C Max.   |
| Temperature Cycling     | 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.<br>1 cycle<br>a) -55±3°C      30minutes<br>b) +85±3°C      30minutes<br>(Transit time shall be with in 3 minutes) | Appearance            | No Damage   |
|                         |   | Contact Resistance    | 100 mΩ Max.   |
| Solderability           | Tip of solder tails and fitting nails into the molten solder (held at 245±5°C) up to 0.1mm from the bottom of the housing for 3±0.5 seconds.  | Solder Wetting        | 95% of immersed area must show no voids, pin holes. |
| Resistance to Soldering | When reflowing refer to Infrared reflow condition <i>Soldering iron method</i><br>0.2mm from terminal tip and fitting nail tip.<br>Soldering time : 5 seconds Max.<br>Solder temperature : 370~400°C  | Appearance            | No Damage   |

### ■ Recommended Temperature Profile





| No. of Contacts | DIM. |      |      |       |      |
|-----------------|------|------|------|-------|------|
|                 | A    | B    | C    | D     | E    |
| 09              | 4.2  | 1.8  | 2.4  | 3.03  | 3.7  |
| 11              | 4.8  | 2.4  | 3.0  | 3.63  | 4.3  |
| 13              | 5.4  | 3.0  | 3.6  | 4.23  | 4.9  |
| 15              | 6.0  | 3.6  | 4.2  | 4.83  | 5.5  |
| 17              | 6.6  | 4.2  | 4.8  | 5.43  | 6.1  |
| 19              | 7.2  | 4.8  | 5.4  | 6.03  | 6.7  |
| 21              | 7.8  | 5.4  | 6.0  | 6.63  | 7.3  |
| 23              | 8.4  | 6.0  | 6.6  | 7.23  | 7.9  |
| 25              | 9.0  | 6.6  | 7.2  | 7.83  | 8.5  |
| 27              | 9.6  | 7.2  | 7.8  | 8.43  | 9.1  |
| 29              | 10.2 | 7.8  | 8.4  | 9.03  | 9.7  |
| 31              | 10.8 | 8.4  | 9.0  | 9.63  | 10.3 |
| 33              | 11.4 | 9.0  | 9.6  | 10.23 | 10.9 |
| 35              | 12.0 | 9.6  | 10.2 | 10.83 | 11.5 |
| 37              | 12.6 | 10.2 | 10.8 | 11.43 | 12.1 |
| 39              | 13.2 | 10.8 | 11.4 | 12.03 | 12.7 |
| 41              | 13.8 | 11.4 | 12.0 | 12.63 | 13.3 |
| 43              | 14.4 | 12.0 | 12.6 | 13.23 | 13.9 |
| 45              | 15.0 | 12.6 | 13.2 | 13.83 | 14.5 |
| 49              | 16.2 | 13.8 | 14.4 | 15.03 | 15.7 |
| 51              | 16.8 | 14.4 | 15.0 | 15.63 | 16.3 |
| 57              | 18.6 | 16.2 | 16.8 | 17.43 | 18.1 |
| 61              | 19.8 | 17.4 | 18.0 | 18.63 | 19.3 |
| 67              | 21.6 | 19.2 | 19.8 | 20.43 | 21.1 |
| 71              | 22.8 | 20.4 | 21.0 | 21.63 | 22.3 |

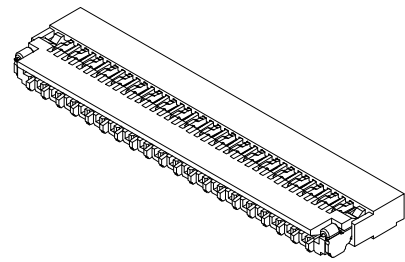
Recommended PCB Layout(Top View)  
Recommended metal mask pattern(thickness 0.1mm)

NOTES: MATERIAL & FINISH

- MATERIAL:  
HOUSING:LCP(UL 94V-0)  
ACTUATOR:LCP(UL 94V-0)  
TERMINAL:COPPER ALLOY  
SOLDER PIN:COPPER ALLOY
- PLATING:  
TERMINAL:GOLD FLASH OVER NICKEL  
SOLDER PIN:TIN OVER NICKEL(LEAD FREE)

3.ORDER INFORMATION

THD0310 - xx CL- GF  
NO. OF CONTACTS

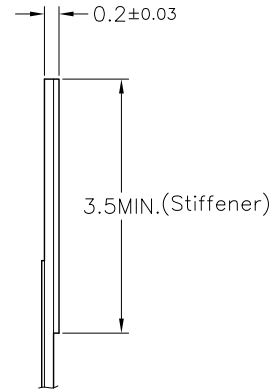
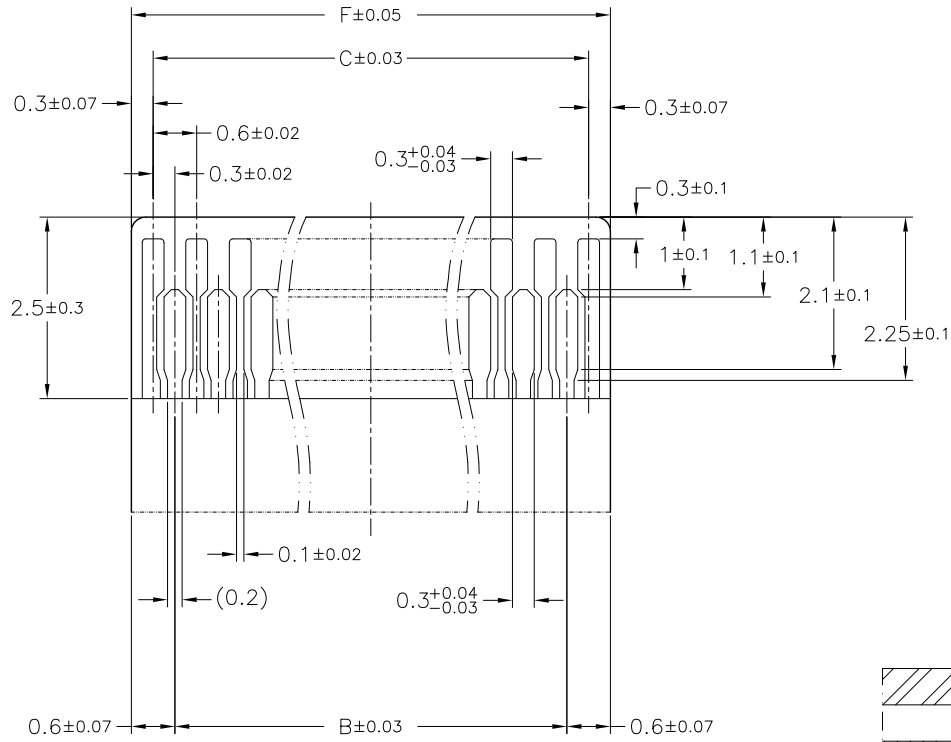


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|   |  |  |
|---|--|--|
| GENERAL TOLERANCE UNLESS OTHERWISE SPECIFIED<br>X.X ±0.25<br>X.XX ±0.15<br>X.XXX ±0.1<br>ANG. ±3° | DRAWN 黃德達<br>CHECKED Jacky 2010.06.24<br>APPROVED Jacky 2010.06.24 | PART NO.<br>THD0310-XXCL-GF<br>TITLE:<br>0.3 PITCH FPC CONN.<br>LOWER CONTACT H=1.0 mm |
| REV. A Release<br>REVISIONS<br>CHK<br>DATE 2010/06/24   | JACKY<br>2010/06/24  | SHEET 1/3<br>UNIT MM<br>SCALE 10:1<br>SIZE A4<br>REV A                                 |

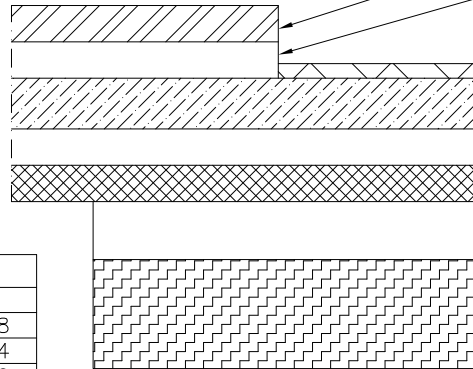
SCALE 20:1

# Recomenend FPC



# Recomenend FPC Construction

| Materoial name                       | Material               | Thickness (mm) |
|--------------------------------------|------------------------|----------------|
| Covering flim layer & Cover adhesive | Polyamide              | 0.025          |
| Surface teratment                    | Plating treatment      | 0.005          |
| Copper foil                          | Cu                     | 0.035          |
| Base adhesive                        | Heat-Hardened adhesive | 0.025          |
| Base flim                            | Polyamide              | 0.025          |
| Reinforcement material adhesive      | Heat-Hardened adhesive | 0.040          |
| Stiffener                            | Polyamide              | 0.075          |



| No. of Contacts | DIM. |     |      |
|-----------------|------|-----|------|
|                 | B    | C   | F    |
| 09              | 1.8  | 2.4 | 3.0  |
| 11              | 2.4  | 3.0 | 3.6  |
| 13              | 3.0  | 3.6 | 4.2  |
| 15              | 3.6  | 4.2 | 4.8  |
| 17              | 4.2  | 4.8 | 5.4  |
| 19              | 4.8  | 5.4 | 6.0  |
| 21              | 5.4  | 6.0 | 6.6  |
| 23              | 6.0  | 6.6 | 7.2  |
| 25              | 6.6  | 7.2 | 7.8  |
| 27              | 7.2  | 7.8 | 8.4  |
| 29              | 7.8  | 8.4 | 9.0  |
| 31              | 8.4  | 9.0 | 9.6  |
| 33              | 9.0  | 9.6 | 10.2 |

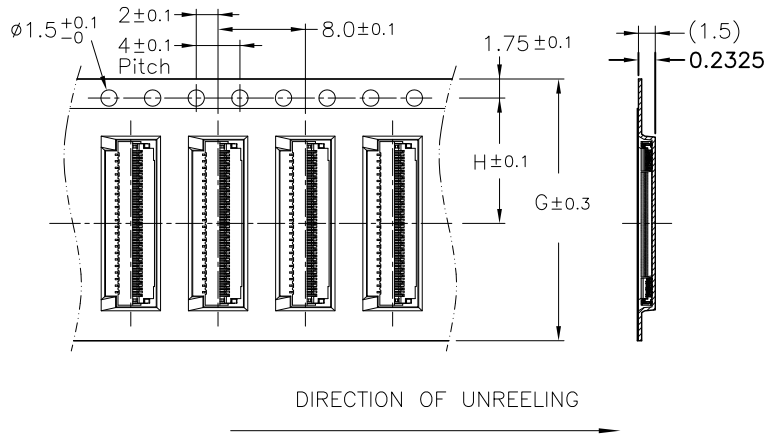
| No. of Contacts | DIM. |      |      |
|-----------------|------|------|------|
|                 | B    | C    | F    |
| 35              | 9.6  | 10.2 | 10.8 |
| 37              | 10.2 | 10.8 | 11.4 |
| 39              | 10.8 | 11.4 | 12.0 |
| 41              | 11.4 | 12.0 | 12.6 |
| 43              | 12.0 | 12.6 | 13.2 |
| 45              | 12.6 | 13.2 | 13.8 |
| 49              | 13.8 | 14.4 | 15.0 |
| 51              | 14.4 | 15.0 | 15.6 |
| 57              | 16.2 | 16.8 | 17.4 |
| 61              | 17.4 | 18.0 | 18.6 |
| 67              | 19.2 | 19.8 | 20.4 |
| 71              | 20.4 | 21.0 | 21.6 |

| REV. | REVISIONS | CHK   | DATE       |
|------|-----------|-------|------------|
| A    | Release   | Jacky | 2010/06/24 |

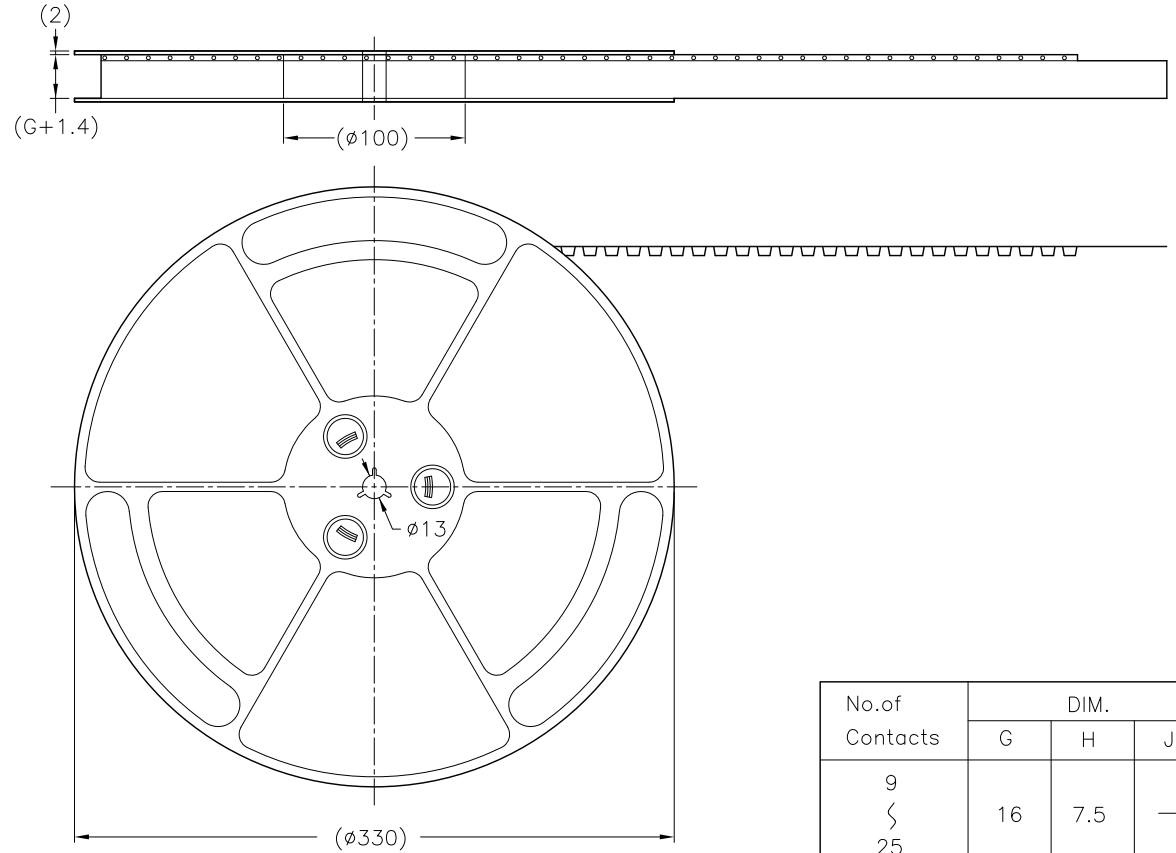
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 SHENZHEN THD ELECTRONICS CO., LTD.

|   |  |   |
|---|--|---|
| GENERAL TOLERANCE UNLESS OTHERWISE SPECIFIED<br>X.X ±0.25<br>X.XX ±0.15<br>X.XXX ±0.1<br>ANG. ±3° | DRAWN 黄德进<br>CHECKED Jacky 2010.06.24<br>APPROVED Jacky 2010.06.24 | PART NO.<br>THD0310-XXCL-GF<br>TITLE:<br>0.3 PITCH FPC CONN.<br>LOWER CONTACT H=1.0 |
| SHEET 2/3   | UNIT MM<br>SCALE 10:1  | SIZE A4<br>REV A  |

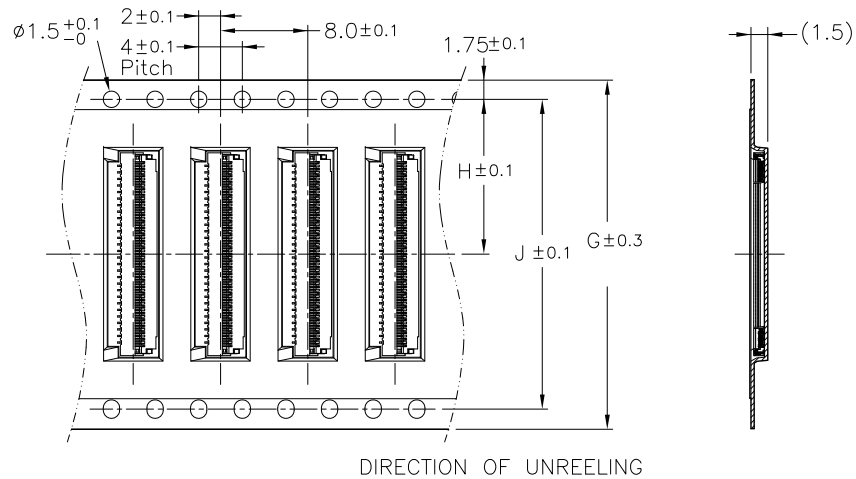
### Tape width 16 and 24 mm



### REEL Dim



### Tape width 32 and 44 mm



| No.of Contacts | DIM. |      |      |
|----------------|------|------|------|
|                | G    | H    | J    |
| 9<br>∩<br>25   | 16   | 7.5  | —    |
| 27<br>∩<br>51  | 24   | 11.5 | —    |
| 57<br>∩<br>67  | 32   | 14.2 | 28.4 |
| 71             | 44   | 20.2 | 40.4 |

#### Notes:

- 1.PER REEL : 5000pcs.
- 2.Material : Black Conductive Polystyrene Alloy.
- 3.Thickness :  $0.3 \pm 0.05$ mm.
- 4.All dimensions meet EIA-481-C requirements.

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| REV. | REVISIONS | CHK   | DATE       |
|------|-----------|-------|------------|
| A    | Release   | Jacky | 2010/06/24 |

|   |  |  |
|---|--|--|
| GENERAL TOLERANCE UNLESS OTHERWISE SPECIFIED<br>X.X ±0.25<br>X.XX ±0.15<br>X.XXX ±0.1<br>ANG. ±3' | DRAWN<br>黃德进 2010.06.24<br>CHECKED<br>jim 2010.06.24<br>APPROVED<br>Jim 2010.06.24<br>SHEET<br>3/3 | PART NO.<br>THD0310-XXCL-GF<br>TITLE:<br>0.3 PITCH FPC CONN.<br>LOWER CONTACT H=1.0MM<br>UNIT<br>MM<br>SCALE<br>A4<br>REV<br>A |
|---|--|--|

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