

**PLEASE CHECK WWW.MOLEX.COM FOR LATEST PART INFORMATION**

**Part Number:** [0873811664](#)  
**Status:** **Active**  
**Description:** 2.00mm (.079") Pitch Milli-Grid™ Receptacle, Surface Mount, Top Entry, 0.38μm (15μ") Gold (Au) Plating, with Cap, without Locating Pegs, 16 Circuits, Lead-free

**Documents:**

[3D Model](#) [Product Specification PS-87380-002 \(PDF\)](#)  
[Drawing \(PDF\)](#) [RoHS Certificate of Compliance \(PDF\)](#)

**Agency Certification**

CSA LR19980  
 UL E29179

**General**

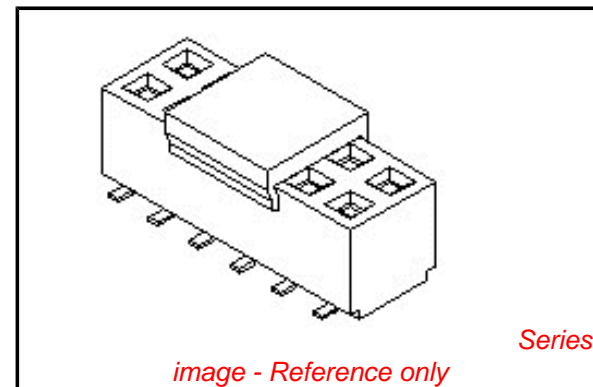
Product Family PCB Receptacles  
 Series [87381](#)  
 Application Board-to-Board  
 Comments With Cap  
 Product Literature Order No 987650-1991  
 Product Name Milli-Grid™

**Physical**

Circuits (Loaded) 16  
 Circuits (maximum) 16  
 Color - Resin Black  
 Durability (mating cycles max) 25  
 Flammability 94V-0  
 Glow-Wire Compliant No  
 Lock to Mating Part None  
 Material - Metal Phosphor Bronze  
 Material - Plating Mating Gold  
 Material - Plating Termination Tin-Lead  
 Material - Resin High Temperature Thermoplastic  
 Number of Rows 2  
 Orientation Vertical  
 PCB Locator No  
 PCB Retention None  
 PCB Thickness Recommended (in) 0.031 In  
 PCB Thickness Recommended (mm) 0.80 mm  
 Packaging Type Tube  
 Pitch - Mating Interface (in) 0.079 In  
 Pitch - Mating Interface (mm) 2.00 mm  
 Pitch - Term. Interface (in) 0.079 In  
 Pitch - Term. Interface (mm) 2.00 mm  
 Plating min: Mating (μin) 15  
 Plating min: Mating (μm) 0.38  
 Plating min: Termination (μin) 50  
 Plating min: Termination (μm) 1.27  
 Polarized to PCB No  
 Surface Mount Compatible (SMC) N/A  
 Temperature Range - Operating -55°C to +105°C  
 Termination Interface: Style Surface Mount

**Electrical**

Current - Maximum per Contact 1.9A  
 Voltage - Maximum 125V



*image - Reference only*

**EU RoHS**

**ELV and RoHS Compliant**  
**REACH SVHC Contains SVHC: No**  
**Halogen-Free Status**  
**Not Reviewed**

**China RoHS**



**Need more information on product environmental compliance?**

Email [productcompliance@molex.com](mailto:productcompliance@molex.com)  
 For a multiple part number RoHS Certificate of Compliance, [click here](#)

Please visit the [Contact Us](#) section for any non-product compliance questions.

**Search Parts in this Series**

[87381Series](#)

**Mates With**

[87758](#) Vertical, Through Hole, Stackable PCB Header, [87759](#) Vertical, Surface Mount, Stackable PCB Header, [87760](#) Right Angle, Through Hole, Stackable PCB Header, [87831](#) Vertical, Through Hole PCB Header, [87832](#) Vertical, Surface Mount PCB

**Solder Process Data**

|  |                           |
|--|---------------------------|
| Duration at Max. Process Temperature (seconds) | 12                        |
| Lead-free Process Capability                   | Reflow Capable (SMT only) |
| Max. Cycles at Max. Process Temperature        | 1                         |
| Process Temperature max. C                     | 260                       |

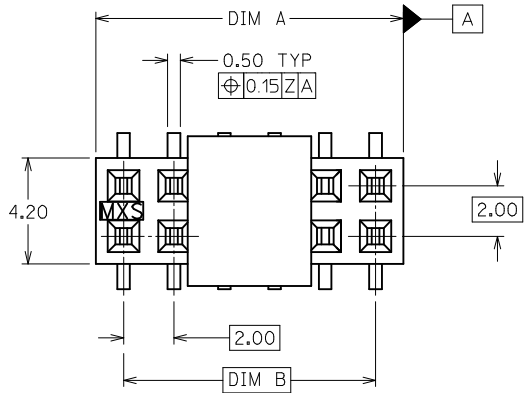
**Material Info****Reference - Drawing Numbers**

|                       |               |
|-----------------------|---------------|
| Product Specification | PS-87380-002  |
| Sales Drawing         | SD-87381-**6* |

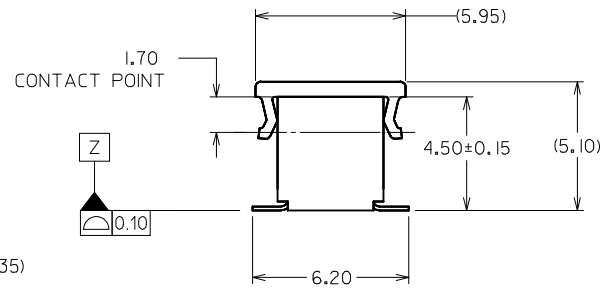
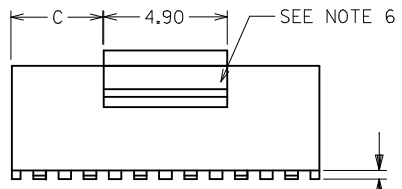
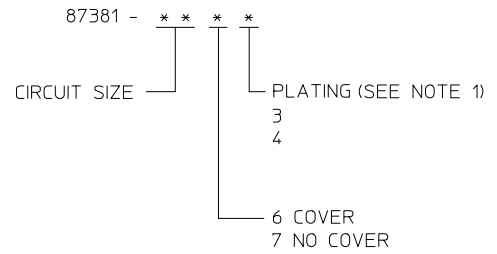
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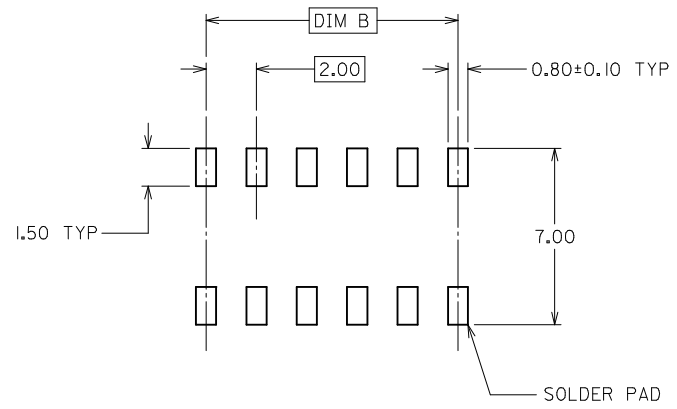
PART NO. LEGEND  
FOR TUBE PACKAGING ONLY



| PART NUMBER<br>(SEE NOTE 5) | CKT.<br>SIZE | DIM A | DIM B | DIM C |
|-----------------------------|--------------|-------|-------|-------|
| 87381-06**                  | 6            | 6.00  | 4.00  | 0.55  |
| 87381-08**                  | 8            | 8.00  | 6.00  | 1.55  |
| 87381-10**                  | 10           | 10.00 | 8.00  | 2.55  |
| 87381-12**                  | 12           | 12.00 | 10.00 | 3.55  |
| 87381-14**                  | 14           | 14.00 | 12.00 | 4.55  |
| 87381-16**                  | 16           | 16.00 | 14.00 | 5.55  |
| 87381-18**                  | 18           | 18.00 | 16.00 | 6.55  |
| 87381-20**                  | 20           | 20.00 | 18.00 | 7.55  |
| 87381-22**                  | 22           | 22.00 | 20.00 | 8.55  |
| 87381-24**                  | 24           | 24.00 | 22.00 | 9.55  |
| 87381-26**                  | 26           | 26.00 | 24.00 | 10.55 |
| 87381-28**                  | 28           | 28.00 | 26.00 | 11.55 |
| 87381-30**                  | 30           | 30.00 | 28.00 | 12.55 |
| 87381-32**                  | 32           | 32.00 | 30.00 | 13.55 |
| 87381-34**                  | 34           | 34.00 | 32.00 | 14.55 |
| 87381-36**                  | 36           | 36.00 | 34.00 | 15.55 |
| 87381-38**                  | 38           | 38.00 | 36.00 | 16.55 |
| 87381-40**                  | 40           | 40.00 | 38.00 | 17.55 |
| 87381-42**                  | 42           | 42.00 | 40.00 | 18.55 |
| 87381-44**                  | 44           | 44.00 | 42.00 | 19.55 |
| 87381-46**                  | 46           | 46.00 | 44.00 | 20.55 |
| 87381-48**                  | 48           | 48.00 | 46.00 | 21.55 |
| 87381-50**                  | 50           | 50.00 | 48.00 | 22.55 |

NOTES:

- PLATING FINISH:
  - 3 - 0.76um MIN. GOLD IN CONTACT AREA 1.27um MIN. TIN IN SOLDER TAIL AREA BOTH OVER 1.27um MIN. NICKEL OVERALL
  - 4 - 0.38um MIN. GOLD IN CONTACT AREA 1.27um MIN. TIN IN SOLDER TAIL AREA BOTH OVER 1.27um MIN. NICKEL OVERALL
- 12 CKT SIZE SHOWN FOR ASSY ILLUSTRATION ONLY. (SEE CHART FOR ALL PART SIZES), 6 CKT & 30 CKT ILLUSTRATED FOR TAPE/REEL VERSION ON SHT 2.
- PRODUCT SPECIFICATION PS-87380 APPLIES.
- COPLANARITY OF SOLDER TAILS ARE TO BE MEASURED BY RESTING THE PART ON A FLAT GAUGE SURFACE.
- TUBE PACKAGING STANDARD.
- COVER IS OPTIONAL, SEE LEGEND.
- PARTS SHALL BE PACKED IN MOISTURE BARRIER BAG.
- REFER SHT 3 FOR P/N: 87381-6000 T&R ILLUSTRATION.



RECOMMENDED PCB LAYOUT

|                     |             |                 |
|---------------------|-------------|-----------------|
| ADD P/N: 87381-3200 | 2009/04/07  | QUALITY SYMBOLS |
| EC NO: S2009-0725   | 2009/04/06  | ▽=0             |
| DRWN:SKANG          | 2009/04/06  | ∇=0             |
| CHKD:ATSEE          | 2009/04/07  |                 |
| APPR:MLONG          |             |                 |
| REV                 | DESCRIPTION |                 |
| 8                   |             |                 |

|   |                 |       |
|---|-----------------|-------|
| GENERAL TOLERANCES<br>(UNLESS SPECIFIED)                | mm              | INCH  |
|   | 4 PLACES ± ---  | ± --- |
| 3 PLACES ± ---  | 2 PLACES ± 0.20 | ± --- |
|   | 1 PLACE ± ---   | ± --- |
| ANGULAR ± 3 °   |                 |       |
| DRAFT WHERE APPLICABLE<br>MUST REMAIN WITHIN DIMENSIONS |                 |       |

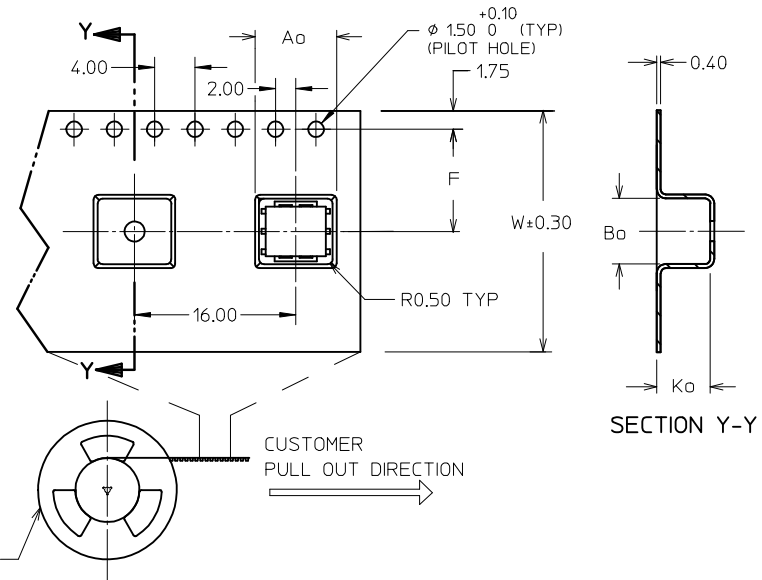
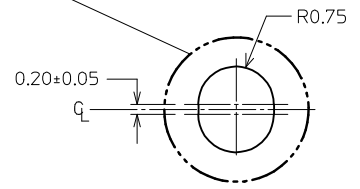
|                            |                    |
|----------------------------|--------------------|
| DIMENSION STYLE<br>MM ONLY |                    |
| DRAWN BY<br>JAMES          | DATE<br>1998/01/08 |
| CHECKED BY<br>LCHANG       | DATE<br>1999/04/23 |
| APPROVED BY<br>SQUEK       | DATE<br>1999/04/26 |
| MATERIAL NO.<br>SEE TABLE  |                    |
| SIZE<br>A3                 |                    |

|  |                        |                           |
|--|------------------------|---------------------------|
| SCALE<br>NTS   | DESIGN UNITS<br>METRIC | THIRD ANGLE<br>PROJECTION |
| TITLE<br>MGRID, TOP ENTRY RECEPT.<br>4.50MM HT., SMT |                        |                           |
| MOLEX INCORPORATED                                   |                        |                           |
| DOCUMENT NO.<br>SD-87381-***6*                       | SHEET NO.<br>1 OF 4    |                           |

9 8 7 6 5 4 3 2 1



30 CKT FOR ILLUSTRATION ONLY  
TAPE & REEL TYPE 'B'



6 CKT FOR ILLUSTRATION ONLY  
TAPE & REEL TYPE 'A'

NOTES:

- LEADER AND TRAILER TAPE
- PEELING OFF FORCE OF THE TOP TAPE: 20-80gf.  
 (PEELING DIRECTION AS SHOWN IN FOLLOWING FIGURE)
- PACKAGING STANDARD IS AS PER EIA-481.
- TAPE & REEL QUANTITY = SEE TABLE

|                     |            |
|---------------------|------------|
| ADD P/N: 87381-3200 | 2009/04/07 |
| EC NO: S2009-0725   | 2009/04/07 |
| DRWN:SKANG          | 2009/04/06 |
| CHKD:ATSEE          | 2009/04/06 |
| APPR:MLONG          | 2009/04/07 |

| REV | DESCRIPTION |
|-----|-------------|
| 8   |             |

| QUALITY SYMBOLS |     |
|-----------------|-----|
|                 | = 0 |
|                 | = 0 |

| GENERAL TOLERANCES (UNLESS SPECIFIED) |        |
|---------------------------------------|--------|
|                                       | mm     |
| 4 PLACES                              | ± 0.10 |
| 3 PLACES                              | ± 0.15 |
| 2 PLACES                              | ± 0.20 |
| 1 PLACE                               | ± 0.30 |
| ANGULAR ± 3°                          |        |

| DIMENSION STYLE |            |
|-----------------|------------|
| MM ONLY         |            |
| DRAWN BY        | DATE       |
| JAMES           | 1998/01/08 |
| CHECKED BY      | DATE       |
| LCHANG          | 1999/04/23 |
| APPROVED BY     | DATE       |
| SQUEK           | 1999/04/26 |
| MATERIAL NO.    |            |
| SEE TABLE       |            |

|   |              |                        |
|---|--------------|------------------------|
| SCALE                                       | DESIGN UNITS | THIRD ANGLE PROJECTION |
| NTS   | METRIC       |                        |
| TITLE                                       |              |                        |
| MGRID, TOP ENTRY RECEPT.<br>4.50MM HT., SMT |              |                        |
| MOLEX INCORPORATED                          |              |                        |
| DOCUMENT NO.                                | SHEET NO.    |                        |
| SD-87381-***6*                              | 2 OF 4       |                        |

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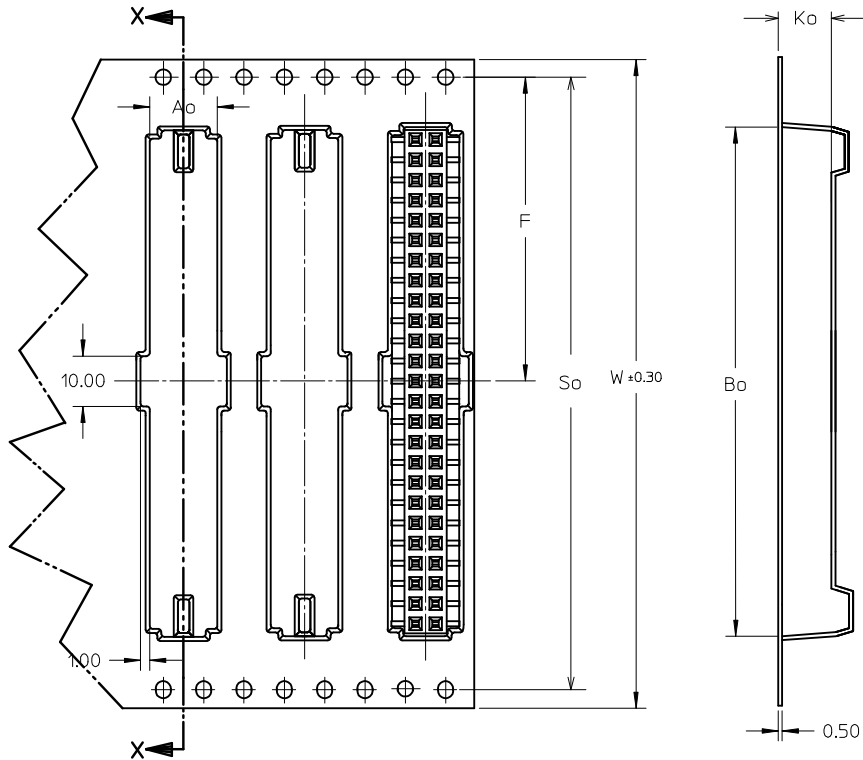
| CKT SIZE | PART NO. WITH CAP IN TUBE | PART NO. WITH CAP IN TAPE / REEL | W  | So    | Ao   | F     | Bo    | Ko   | T&R TYPE (SHT 2) | T&R QTY PER REEL |
|----------|---------------------------|----------------------------------|----|-------|------|-------|-------|------|------------------|------------------|
| 6        | 87381-0664                | 87381-9002                       | 24 | -     | 7.00 | 11.50 | 6.50  | 5.30 | A                | 500              |
| 8        | 87381-0864                | 87381-9003                       | 24 | -     | 7.00 | 11.50 | 8.50  | 5.30 | A                | 600              |
| 10       | 87381-1064                | 87381-9005                       | 24 | -     | 7.00 | 11.50 | 10.50 | 5.30 | A                | 680              |
| 14       | 87381-1464                | 87381-9006                       | 32 | 28.40 | 7.20 | 14.20 | 14.50 | 5.30 | B                | 750              |
| 16       | 87381-1664                | 87381-9004                       | 32 | 28.40 | 7.20 | 14.20 | 16.50 | 5.30 | B                | 800              |
| 18       | 87381-1864                | 87381-1800                       | 32 | 28.40 | 7.20 | 14.20 | 18.50 | 5.30 | B                | 750              |
| 20       | 87381-2063                | 87381-2000                       | 32 | 28.40 | 7.20 | 14.20 | 20.50 | 5.30 | B                | 800              |
| 22       | 87381-2264                | 87381-2200                       | 44 | 40.40 | 7.20 | 20.20 | 22.50 | 5.30 | B                | 500              |
| 30       | 87381-3064                | 87381-3000                       | 44 | 40.40 | 7.20 | 20.20 | 30.50 | 5.30 | B                | 500              |
| 32       | 87381-3264                | 87381-3200                       | 44 | 40.40 | 7.20 | 20.20 | 32.50 | 5.30 | B                | 500              |
| 44       | 87381-4464                | 87381-4400                       | 56 | 52.40 | 7.20 | 26.20 | 44.50 | 5.30 | B                | 500              |
| 46       | 87381-4664                | 87381-4600                       | 72 | 68.40 | 7.20 | 34.20 | 46.50 | 5.30 | B                | 750              |
| 50       | 87381-5063                | 87381-5030                       | 72 | 68.40 | 7.20 | 34.20 | 50.50 | 5.30 | B                | 500              |
| 50       | 87381-5064                | 87381-5000                       | 72 | 68.40 | 7.20 | 34.20 | 50.50 | 5.30 | B                | 500              |

|  |  |                    |   |   |                                      |                     |              |   |       |   |
|--|--|--------------------|---|---|--------------------------------------|---------------------|--------------|---|-------|---|
| ADD P/N: 87381-3200<br>EC NO: S2009-0725<br>DRWN:SKANG<br>CHKD:ATSEE<br>APPR:MLONG | 2009/04/07<br>2009/04/06<br>2009/04/07 | DESCRIPTION<br>REV | QUALITY SYMBOLS   | GENERAL TOLERANCES (UNLESS SPECIFIED)   | DIMENSION STYLE                      | SCALE               | DESIGN UNITS | THIRD ANGLE PROJECTION  |       |   |
|  |  |                    | $\nabla = 0$<br>$\square = 0$   | mm      INCH<br>4 PLACES ± --- ± ---<br>3 PLACES ± --- ± ---<br>2 PLACES ± 0.20 ± ---<br>1 PLACE ± --- ± ---<br>ANGULAR ± 3 ° | MM ONLY                              | NTS                 | METRIC       | DRAWN BY      DATE<br>JAMES          1998/01/08<br>CHECKED BY      DATE<br>LCHANG          1999/04/23<br>APPROVED BY      DATE<br>SQUEK            1999/04/26 | TITLE | MGRID, TOP ENTRY RECEPT.<br>4.50MM HT., SMT |
|  |  |                    | DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS  | SEE TABLE   | MOLEX INCORPORATED<br>SD-87381-***6* | SHEET NO.<br>3 OF 4 |              |   |       |   |
|  |  |                    | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |   |                                      |                     |              |   |       |   |

9 8 7 6 5 4 3 2 1

| CKT SIZE | PART NO. WITHOUT CAP IN TUBE | PART NO. WITHOUT CAP IN TAPE / REEL | W  | So    | Ao   | F     | Bo    | Ko   | T&R TYPE (SHT 2) | T&R QTY PER REEL |
|----------|------------------------------|-------------------------------------|----|-------|------|-------|-------|------|------------------|------------------|
| 50       | 87381-5074                   | 87381-6000 $\triangle/8$            | 72 | 68.40 | 6.80 | 34.20 | 50.50 | 8.00 | B                | 500              |

$\triangle/8$  ILLUSTRATION FOR P/N: 87381-6000  
50 CKT IN T&R W/O CAP



SECTION X-X

|   |  |                                       |  |                            |                      |                    |   |                        |  |  |
|---|--|---------------------------------------|--|----------------------------|----------------------|--------------------|---|------------------------|--|--|
| ADD P/N: 87381-3200<br>EC NO: S2009-0725<br>DRWN:SKANG 2009/04/07<br>CHKD:ATSEE 2009/04/06<br>APPR:MLONG 2009/04/07 | QUALITY SYMBOLS<br>$\blacktriangledown=0$<br>$\triangle=0$ | GENERAL TOLERANCES (UNLESS SPECIFIED) |  | DIMENSION STYLE<br>MM ONLY |                      | SCALE<br>NTS       | DESIGN UNITS<br>METRIC  | THIRD ANGLE PROJECTION |  |  |
|   |  |                                       | mm   | INCH                       | DRAWN BY<br>JAMES    | DATE<br>1998/01/08 | TITLE<br>MGRID, TOP ENTRY RECEPT.<br>4.50MM HT., SMT  |                        |  |  |
|   |  | 4 PLACES                              | ± ---  | ± ---                      | CHECKED BY<br>LCHANG | DATE<br>1999/04/23 | MOLEX INCORPORATED<br>DOCUMENT NO. SD-87381-***6*<br>SHEET NO. 4 OF 4   |                        |  |  |
|   |  | 3 PLACES                              | ± ---  | ± ---                      | APPROVED BY<br>SQUEK | DATE<br>1999/04/26 |   |                        |  |  |
| 2 PLACES  | ± 0.20   | ± ---                                 | ANGULAR ± 3 °  |                            | MATERIAL NO.         |                    | SEE TABLE   |                        |  |  |
| 1 PLACE   | ± ---  | ± ---                                 | DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS |                            | SIZE<br>A3           |                    | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |                        |  |  |