

PLEASE CHECK WWW.MOLEX.COM FOR LATEST PART INFORMATION

Part Number: [0873812000](#)
Status: **Active**
Description: 2.00mm (.079") Pitch Milli-Grid™ Receptacle, Surface Mount, Top Entry, 0.76µm (30µ") Gold (Au) Plating, without Cap, without Locating Peg, 20 Circuits, Tape and Reel, Leadfree

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
 Product Name Milli-Grid™

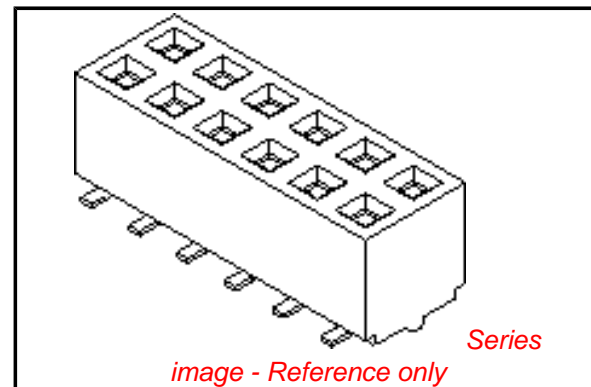
Physical

Circuits (Loaded) 20
 Circuits (maximum) 20
 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
 Packaging Type Embossed Tape on Reel
 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) 30
 Plating min: Mating (µm) 0.76
 Plating min: Termination (µin) 50
 Plating min: Termination (µm) 1.27
 Polarized to Mating Part No
 Polarized to PCB No
 Stackable Yes
 Surface Mount Compatible (SMC) Yes
 Temperature Range - Operating -55°C to +105°C
 Termination Interface: Style Surface Mount

Electrical

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

Solder Process Data



EU RoHS

ELV and RoHS Compliant
REACH SVHC Contains SVHC: No
Halogen-Free Status

China RoHS



Not Halogen-Free

Need more information on product environmental compliance?

Email 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

| | |
|--|---------------------------|
| 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

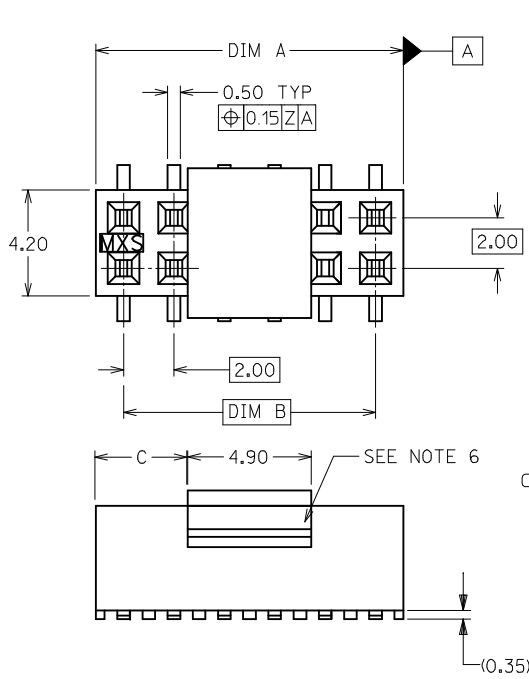
Reference - Drawing Numbers

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

This document was generated on 03/18/2010

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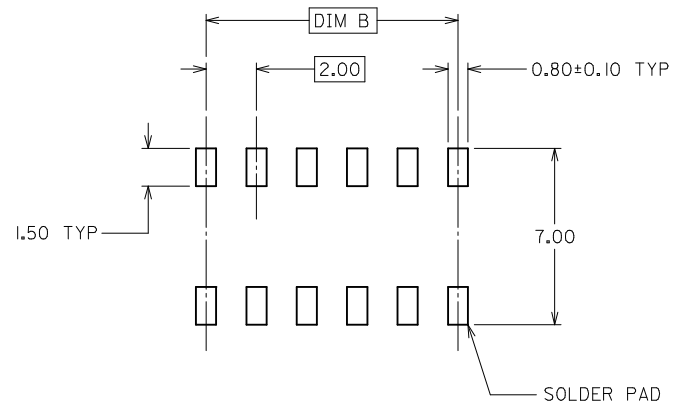
PART NO. LEGEND
FOR TUBE PACKAGING ONLY



| PART NUMBER (SEE NOTE 5) | CKT. 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 EC NO: S2009-0725 DRWN:SKANG CHKD:ATSEE APPR:MLONG | REV | 2009/04/01 | 2009/04/06 | 2009/04/07 |
| | | 2009/04/01 | 2009/04/06 | 2009/04/07 |

| | | |
|--|-----------------------|----------------------|
| QUALITY SYMBOLS | ▽=0 | ∇=0 |
| | ▽=0 | ∇=0 |
| GENERAL TOLERANCES (UNLESS SPECIFIED) | mm | INCH |
| | 4 PLACES ± --- ± --- | 3 PLACES ± --- ± --- |
| DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS | 2 PLACES ± 0.20 ± --- | 1 PLACE ± --- ± --- |
| | ANGULAR ± 3 ° | |

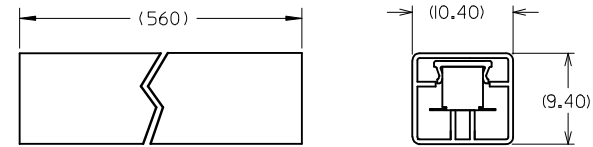
| | | | | |
|----------------------------|--------------------|--|------------------------|------------------------|
| DIMENSION STYLE MM ONLY | | SCALE NTS | DESIGN UNITS METRIC | THIRD ANGLE PROJECTION |
| DRAWN BY JAMES | DATE 1998/01/08 | TITLE MGRID, TOP ENTRY RECEPT. 4.50MM HT., SMT | | |
| CHECKED BY LCHANG | DATE 1999/04/23 | MOLEX INCORPORATED | | |
| APPROVED BY SQUEK | DATE 1999/04/26 | DOCUMENT NO. SD-87381-**6* | | |
| MATERIAL NO. | | SHEET NO. 1 OF 4 | | |

| | | | | |
|----------------------|--|---------------------|--|--|
| DRAWN BY JAMES | | DATE 1998/01/08 | TITLE MGRID, TOP ENTRY RECEPT. 4.50MM HT., SMT | |
| CHECKED BY LCHANG | | DATE 1999/04/23 | MOLEX INCORPORATED | |
| APPROVED BY SQUEK | | DATE 1999/04/26 | DOCUMENT NO. SD-87381-**6* | |
| MATERIAL NO. | | SHEET NO. 1 OF 4 | | |

9 8 7 6 5 4 3 2 1

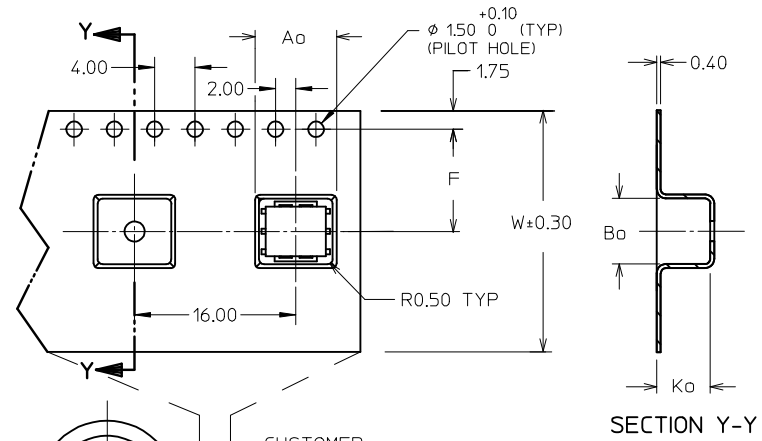
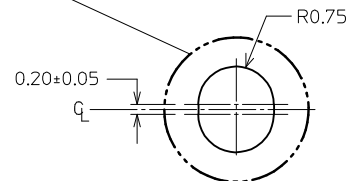


CONNECTOR ORIENTATION IN TUBE



SECTION Z-Z

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



SECTION Y-Y

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 | INCH |
| 4 PLACES | ± --- ± --- |
| 3 PLACES | ± --- ± --- |
| 2 PLACES | ± 0.20 ± --- |
| 1 PLACE | ± --- ± --- |
| 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. 4.50MM HT., SMT | | |
| MOLEX INCORPORATED | | SHEET NO. |
| DOCUMENT NO. | | 2 OF 4 |
| SD-87381-***6* | | |

10 9 8 7 6 5 4 3 2 1

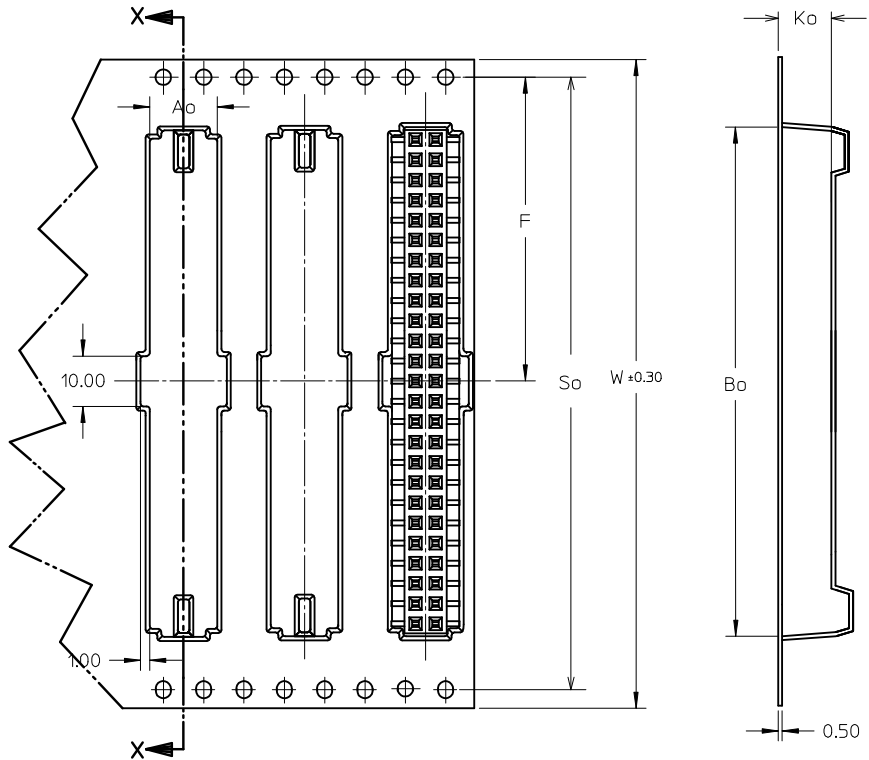
| CKT SIZE | PART NO. WITH CAP IN TUBE | PART NO. WITH CAP IN TAPE / REEL | W | So | Ao | F | Bo | Ko | T&R TYPE (SHT 2) | T&R QTY PER REEL |
|----------|---------------------------|----------------------------------|----|-------|------|-------|-------|------|------------------|------------------|
| 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 EC NO: S2009-0725 DRWN:SKANG CHKD:ATSEE APPR:MLONG | 2009/04/07 2009/04/06 2009/04/07 | DESCRIPTION REV | QUALITY SYMBOLS | GENERAL TOLERANCES (UNLESS SPECIFIED) | DIMENSION STYLE | SCALE | DESIGN UNITS | THIRD ANGLE PROJECTION | | |
| | | | $\nabla = 0$ $\square = 0$ | mm INCH 4 PLACES ± --- ± --- 3 PLACES ± --- ± --- 2 PLACES ± 0.20 ± --- 1 PLACE ± --- ± --- ANGULAR ± 3 ° | MM ONLY | NTS | METRIC | DRAWN BY: JAMES DATE: 1998/01/08 CHECKED BY: LCHANG DATE: 1999/04/23 APPROVED BY: SQUEK DATE: 1999/04/26 | TITLE | MGRID, TOP ENTRY RECEPT. 4.50MM HT., SMT |
| | | | | DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS | SEE TABLE | MOLEX INCORPORATED SD-87381-***6* | SHEET NO. 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 EC NO: S2009-0725 DRWN:SKANG 2009/04/07 CHKD:ATSEE 2009/04/06 APPR:MLONG 2009/04/07 | QUALITY SYMBOLS $\nabla=0$ $\square=0$ | GENERAL TOLERANCES (UNLESS SPECIFIED) | | DIMENSION STYLE MM ONLY | | SCALE NTS | DESIGN UNITS METRIC | THIRD ANGLE PROJECTION | | |
| | | | mm | INCH | DRAWN BY JAMES | DATE 1998/01/08 | TITLE MGRID, TOP ENTRY RECEPT. 4.50MM HT., SMT | | | |
| | | 4 PLACES | ± --- | ± --- | CHECKED BY LCHANG | DATE 1999/04/23 | MOLEX INCORPORATED DOCUMENT NO. SD-87381-***6* SHEET NO. 4 OF 4 | | | |
| | | 3 PLACES | ± --- | ± --- | APPROVED BY SQUEK | DATE 1999/04/26 | | | | |
| 2 PLACES | ± 0.20 | ± --- | ANGULAR ± 3 ° | | MATERIAL NO. | | SEE TABLE | | | |
| 1 PLACE | ± --- | ± --- | DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS | | SIZE A3 | | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION | | | |