

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

**Part Number:** [0878310621](#)  
**Status:** **Active**  
**Overview:** milligrid  
**Description:** 2.00mm (.079") Pitch Milli-Grid™ Header, Vertical, Through Hole, Shrouded, Lead-free, 6 Circuits, 0.76µm (30µ") Gold (Au) Plating, without Center Polarization Slot, without Locking Window, without PCB Locator, Tube

**Documents:**

[3D Model](#) [Product Specification PS-87831-027 \(PDF\)](#)  
[Drawing \(PDF\)](#) [RoHS Certificate of Compliance \(PDF\)](#)

**Agency Certification**

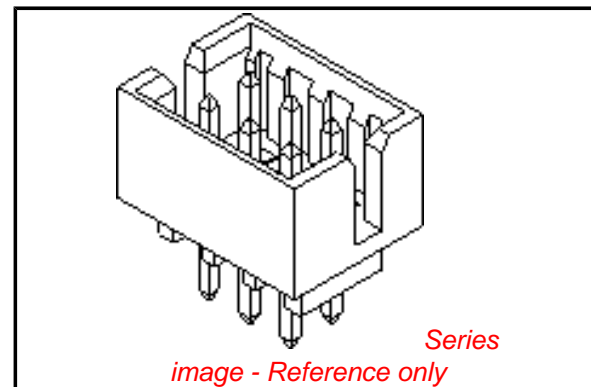
CSA LR19980  
 UL E29179

**General**

Product Family PCB Headers  
 Series [87831](#)  
 Application Wire-to-Board  
 Comments Contact Molex for application in automotive industry  
 Overview [milligrid](#)  
 Product Name Milli-Grid™

**Physical**

Breakaway No  
 Circuits (Loaded) 6  
 Circuits (maximum) 6  
 Color - Resin Black  
 First Mate / Last Break No  
 Flammability 94V-0  
 Glow-Wire Compliant No  
 Guide to Mating Part No  
 Keying to Mating Part None  
 Lock to Mating Part None  
 Material - Metal Brass  
 Material - Plating Mating Gold  
 Material - Plating Termination Tin  
 Material - Resin Nylon  
 Number of Rows 2  
 Orientation Vertical  
 PC Tail Length (in) 0.098 In  
 PC Tail Length (mm) 2.50 mm  
 PCB Locator No  
 PCB Retention None  
 PCB Thickness Recommended (in) 0.062 In  
 PCB Thickness Recommended (mm) 1.60 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) 30  
 Plating min: Mating (µm) 0.76  
 Plating min: Termination (µin) 76  
 Plating min: Termination (µm) 1.88  
 Polarized to Mating Part Side Slots (2)



**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**

[87831Series](#)

**Mates With**

[50394](#) Wire-to-Board Terminals. [51110](#) Wire-to-Board Crimp Housing. [87568](#) Wire-to-Board IDT Housings. [79107](#) Board-to-Board Top Entry Through Hole Receptacle. [79108](#) Board-to-Board FFC/FPC Top Entry Through Hole Receptacle. L

|                                |                 |
|--------------------------------|-----------------|
| Polarized to PCB               | No              |
| Shrouded                       | Fully           |
| Stackable                      | No              |
| Surface Mount Compatible (SMC) | Yes             |
| Temperature Range - Operating  | -55°C to +105°C |
| Termination Interface: Style   | Through Hole    |

#### **Electrical**

|                               |      |
|-------------------------------|------|
| Current - Maximum per Contact | 2A   |
| Voltage - Maximum             | 125V |

#### **Solder Process Data**

|  |                        |
|--|------------------------|
| Duration at Max. Process Temperature (seconds) | 10                     |
| Lead-free Process Capability                   | Wave Capable (TH only) |
| Max. Cycles at Max. Process Temperature        | 1                      |
| Process Temperature max. C                     | 260                    |

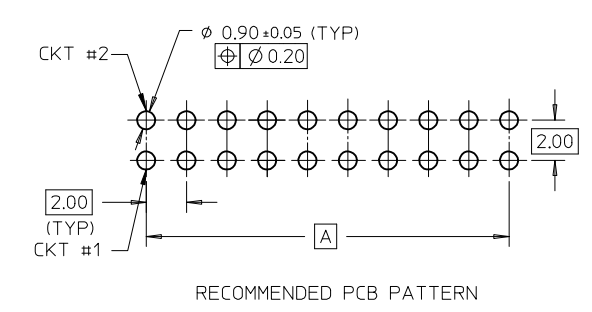
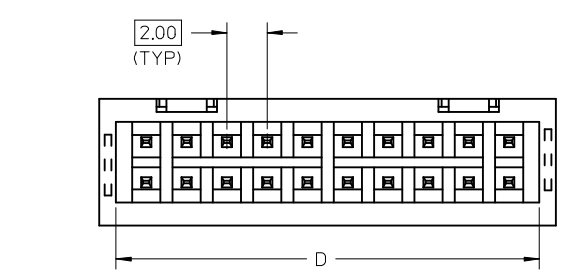
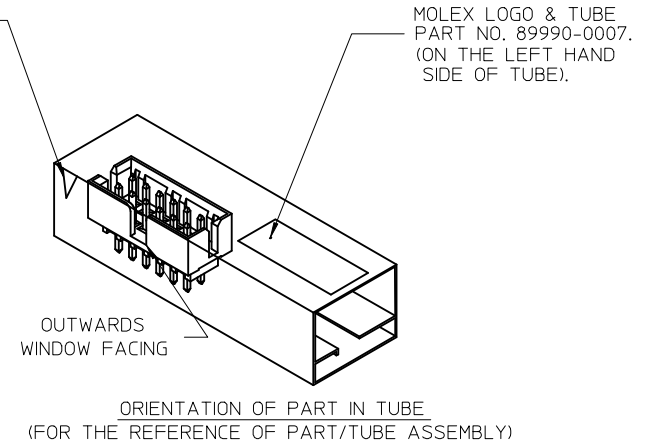
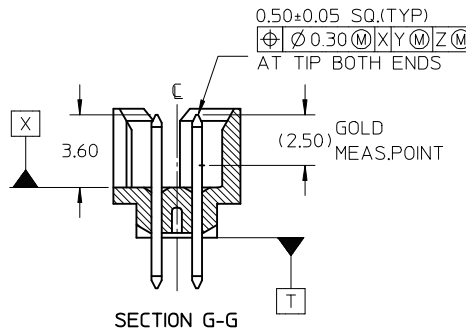
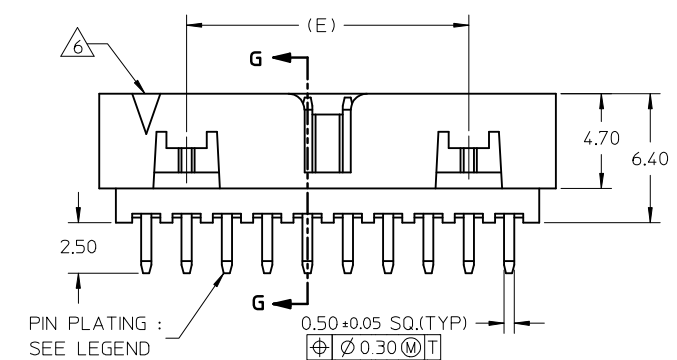
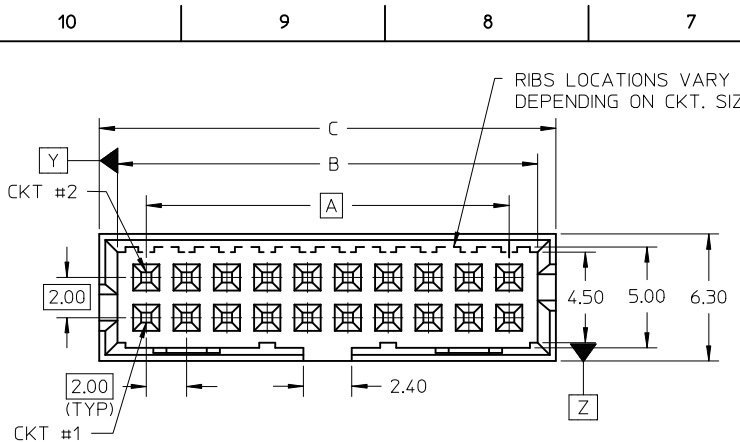
#### **Material Info**

#### **Reference - Drawing Numbers**

|                       |              |
|-----------------------|--------------|
| Product Specification | PS-87831-027 |
| Sales Drawing         | SD-87831-011 |

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**PART NUMBER LEGEND :**  
 87831 - \* \* \* \* \*  
**PLATING OPTION**  
 19 - 0.05-0.13um/2-5uin GOLD IN CONTACT AREA AND 1.88um/75uin MIN. TIN IN SOLDER TAIL AREA OVER 1.27um/50uin MIN. NICKEL OVERALL.  
 20 - 0.38um/15uin GOLD IN CONTACT AREA AND 1.88um/75uin MIN. TIN IN SOLDER TAIL AREA OVER 1.27um/50uin MIN. NICKEL OVERALL.  
 21 - 0.76um/30uin GOLD IN CONTACT AREA AND 1.88um/75uin MIN. TIN IN SOLDER TAIL AREA OVER 1.27um/50uin MIN. NICKEL OVERALL.

- NOTES:**
- FOR ILLUSTRATION PURPOSES, 20 CIRCUIT SIZE WAFER IS SHOWN.
  - MATERIAL :**  
 HOUSING : 30% G.F., NYLON 46, UL94V-0, COLOR BLACK.  
 PIN : 0.50MM SQ.PHOSPHOR BRONZE.
  - PRODUCT SPECIFICATION PS-87831-027 APPLIES.
  - NO CENTRE POLARIZATION SLOT FOR CKT SIZE 4 & 6 (EXCEPT FOR 87831-5119).
  - NO SIDE LOCKING SLOT FROM 4 TO 12 CKT SIZE.
  - CKT 4 AND 6 HAS NO IDENTIFICATION TAG.
  - REFER TO PART 87831-\*\*4\* FOR CENTRE LOCKING SLOT OPTION FOR 4 TO 12 CKT.
  - THIS HEADER MATES WITH MOLEX :  
 a) CRIMP RECEPTACLE HOUSING, 51110 SERIES WITH CRIMP TERMINAL, 50394 SERIES.  
 b) 2MM MILLIGRID DUAL ROW IDT, 87568 SERIES.
  - PARTS TO BE PACKED IN TUBE WITH MOISTURE BARRIER BAG.

|  |  |                               |                                       |       |  |                       |  |                              |                        |  |  |  |
|--|--|-------------------------------|---------------------------------------|-------|--|-----------------------|--|------------------------------|------------------------|--|--|--|
| REVISED<br>EC NO: S2009-0559<br>DRWN:SKANG<br>CHKD:ATSEE<br>APPR:MLONG | 2009/02/23<br>2009/02/23<br>2009/02/23 | QUALITY SYMBOLS<br>▽=0<br>◻=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>ATSEE  | DATE<br>2003/10/03    | TITLE<br>MGRID, SHROUDED HEADER<br>VERTICAL<br>W/SLOT & STANDOFF |                              |                        |  |  |  |
| A14  | REV                                    | DESCRIPTION                   | 4 PLACES                              | ± --- | ± ---  | CHECKED BY<br>KCL ING | DATE<br>2003/11/07   | MOLEX INCORPORATED           |                        |  |  |  |
|  |  |                               | 3 PLACES                              | ± --- | ± ---  | APPROVED BY<br>SKTOH  | DATE<br>2003/11/07   | DOCUMENT NO.<br>SD-87831-011 |                        |  |  |  |
|  |  |                               | 2 PLACES                              | ± 0.2 | ± ---  | MATERIAL NO.          |  | SHEET NO.<br>1 OF 2          |                        |  |  |  |
|  |  |                               | 1 PLACE                               | ± --- | ± ---  | ANGULAR ± 3 °         |  | SEE TABLE                    |                        |  |  |  |
| DRAFT WHERE APPLICABLE<br>MUST REMAIN<br>WITHIN DIMENSIONS             |  |                               | SIZE<br>A3                            |       | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX<br>INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |                       |  |                              |                        |  |  |  |

| P/N IN TUBE | CKT SIZE | VOID POSITION | DIMENSION |       |       |       |       |
|-------------|----------|---------------|-----------|-------|-------|-------|-------|
|             |          |               | A         | B     | C     | D     | E     |
| 87831-04**  | 4        | -----         | 2.00      | 4.85  | 6.65  | 5.00  | ----- |
| 87831-06**  | 6        | -----         | 4.00      | 6.85  | 8.65  | 7.00  | ----- |
| 87831-08**  | 8        | -----         | 6.00      | 8.85  | 10.65 | 9.00  | ----- |
| 87831-10**  | 10       | -----         | 8.00      | 10.85 | 12.65 | 11.00 | ----- |
| 87831-12**  | 12       | -----         | 10.00     | 12.85 | 14.65 | 13.00 | ----- |
| 87831-14**  | 14       | -----         | 12.00     | 14.85 | 16.65 | 15.00 | 8.00  |
| 87831-16**  | 16       | -----         | 14.00     | 16.85 | 18.65 | 17.00 | 10.00 |
| 87831-18**  | 18       | -----         | 16.00     | 18.85 | 20.65 | 19.00 | 12.00 |
| 87831-20**  | 20       | -----         | 18.00     | 20.85 | 22.65 | 21.00 | 14.00 |
| 87831-22**  | 22       | -----         | 20.00     | 22.85 | 24.65 | 23.00 | 16.00 |
| 87831-24**  | 24       | -----         | 22.00     | 24.85 | 26.65 | 25.00 | 18.00 |
| 87831-26**  | 26       | -----         | 24.00     | 26.85 | 28.65 | 27.00 | 20.00 |
| 87831-28**  | 28       | -----         | 26.00     | 28.85 | 30.65 | 29.00 | 22.00 |
| 87831-30**  | 30       | -----         | 28.00     | 30.85 | 32.65 | 31.00 | 24.00 |
| 87831-32**  | 32       | -----         | 30.00     | 32.85 | 34.65 | 33.00 | 26.00 |
| 87831-34**  | 34       | -----         | 32.00     | 34.85 | 36.65 | 35.00 | 28.00 |
| 87831-36**  | 36       | -----         | 34.00     | 36.85 | 38.65 | 37.00 | 30.00 |
| 87831-38**  | 38       | -----         | 36.00     | 38.85 | 40.65 | 39.00 | 32.00 |
| 87831-40**  | 40       | -----         | 38.00     | 40.85 | 42.65 | 41.00 | 34.00 |
| 87831-42**  | 42       | -----         | 40.00     | 42.85 | 44.65 | 43.00 | 36.00 |
| 87831-44**  | 44       | -----         | 42.00     | 44.85 | 46.65 | 45.00 | 38.00 |
| 87831-46**  | 46       | -----         | 44.00     | 46.85 | 48.65 | 47.00 | 40.00 |
| 87831-48**  | 48       | -----         | 46.00     | 48.85 | 50.65 | 49.00 | 42.00 |
| 87831-50**  | 50       | -----         | 48.00     | 50.85 | 52.65 | 51.00 | 44.00 |
| 87831-5120  | 12       | 1             | 10.00     | 12.85 | 14.65 | 13.00 | ----- |
| 87831-5220  | 44       | 20            | 42.00     | 44.85 | 46.65 | 45.00 | 38.00 |
| 87831-5320  | 24       | 13            | 22.00     | 24.85 | 26.65 | 25.00 | 18.00 |
| 87831-5420  | 34       | 3             | 32.00     | 34.85 | 36.65 | 35.00 | 28.00 |
| 87831-5520  | 20       | 20            | 18.00     | 20.85 | 22.65 | 21.00 | 14.00 |
| 87831-5620  | 28       | 13            | 26.00     | 28.85 | 30.65 | 29.00 | 22.00 |
| 87831-5119  | 6        | -----         | 4.00      | 6.85  | 8.65  | 7.00  | ----- |
| 87831-5720  | 34       | 15            | 32.00     | 34.85 | 36.65 | 35.00 | 28.00 |
| 87831-5820  | 40       | 25            | 38.00     | 40.85 | 42.65 | 41.00 | 34.00 |
| 87831-5920  | 20       | 13            | 18.00     | 20.85 | 22.65 | 21.00 | 14.00 |
| 87831-6020  | 24       | 20            | 22.00     | 24.85 | 26.65 | 25.00 | 18.00 |

} NO CENTRE POLARIZATION SLOT

|  |                 |  |   |   |   |                        |
|--|-----------------|--|---|---|---|------------------------|
| <b>REVISED</b><br>EC NO: S2009-0559<br>DRWN:SKANG 2009/02/23<br>CHKD:ATSEE 2009/02/23<br>APPR:MLONG 2009/02/23 | QUALITY SYMBOLS | GENERAL TOLERANCES (UNLESS SPECIFIED)  | DIMENSION STYLE   | SCALE   | DESIGN UNITS  | THIRD ANGLE PROJECTION |
|  | = 0<br>= 0      | mm    INCH   | MM ONLY   | NTS   | METRIC  |                        |
|  |                 | 4 PLACES ± --- ± ---<br>3 PLACES ± --- ± ---<br>2 PLACES ± 0.2 ± ---<br>1 PLACE ± --- ± ---<br>ANGULAR ± 3 ° | DRAWN BY    DATE<br>ATSEE      2003/10/03<br>CHECKED BY    DATE<br>KCLING      2003/11/07<br>APPROVED BY    DATE<br>SKTOH        2003/11/07 | TITLE   | MGRID, SHROUDED HEADER<br>VERTICAL<br>W/SLOT & STANDOFF |                        |
|  |                 | DRAFT WHERE APPLICABLE<br>MUST REMAIN<br>WITHIN DIMENSIONS   | SEE TABLE   | MOLEX INCORPORATED<br>MATERIAL NO.    DOCUMENT NO.    SHEET NO.   |   | SD-87831-011<br>2 OF 2 |
|  |                 |  | SIZE  | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |   |                        |
| A14  | REV             |  | A3  |   |   |                        |