

PLEASE CHECK [WWW.MOLEX.COM](http://WWW.MOLEX.COM) FOR LATEST PART INFORMATION

**Part Number:** [0878313029](#)  
**Status:** **Active**  
**Overview:** [milligrid](#)  
**Description:** 2.00mm (.079") Pitch Milli-Grid™ Header, Vertical, Through Hole, Shrouded, Lead-free, 30 Circuits, 0.76µm (30µ") Gold (Au) Plating, Center Polarization Slot, with Locking Windows, PCB Locator, Tube

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

**Agency Certification**

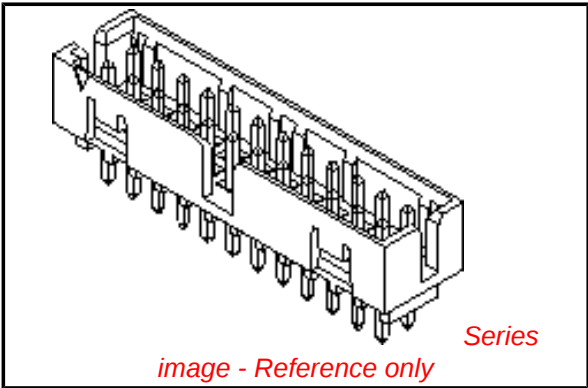
CSA LR19980  
UL E29179

**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) 30  
Circuits (maximum) 30  
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 Yes  
Material - Metal Brass, Phosphor Bronze  
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 Yes  
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               | Yes             |
| 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-87831-020 |

This document was generated on 05/26/2010

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10 9 8 7 6 5 4 3 2 1

F

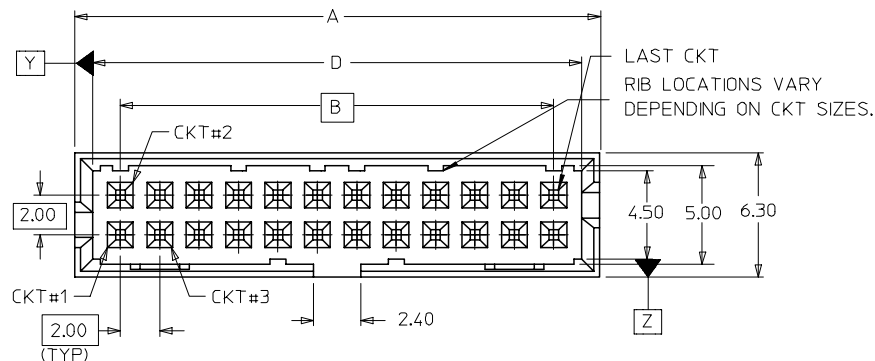
E

D

C

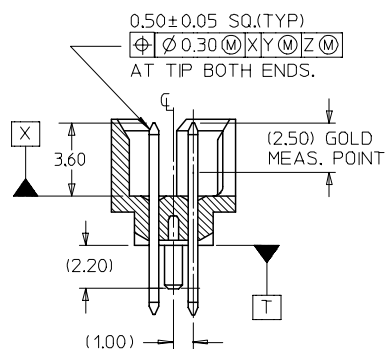
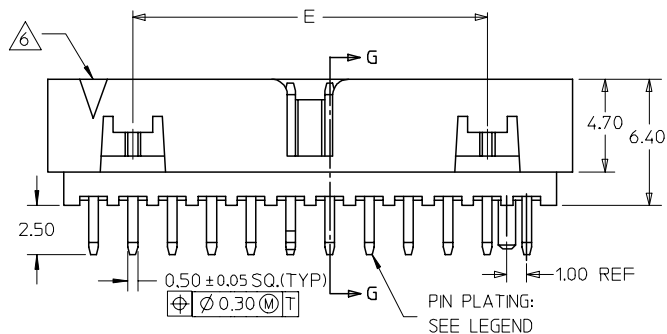
B

A

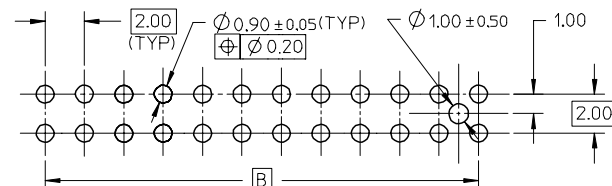


# NOTES:

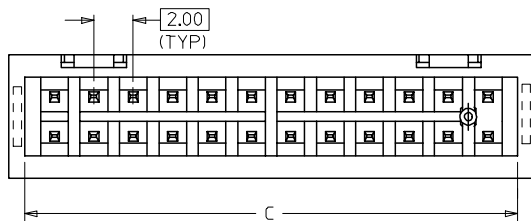
- FOR ILLUSTRATION PURPOSES, 24 CKT SIZE WAFER IS SHOWN.
- MATERIAL :  
HOUSING : 30% G.F., NYLON 46, UL94V-0, COLOR BLACK.  
PIN : 0.50MM SQ.PHOSPHOR BRONZE.
- PRODUCT SPECIFICATION PS-87831-027 APPLIES.
- NO CENTRE POLARIZATION SLOT FOR CKT SIZE 6.
- NO SIDE LOCKING SLOT FROM 6 TO 12 CKT SIZE.
- CKT 6 HAS NO IDENTIFICATION TAG.
- 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



SECTION G-G

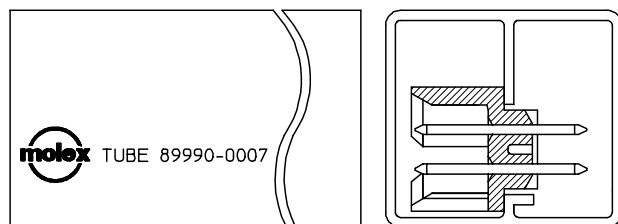
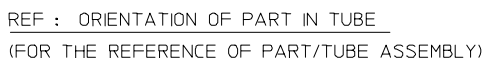


RECOMMENDED PCB PATTERN  
(FOR THICKNESS OF 1.60 ± 0.10)



|                                                                                                                             |             |                                    |                                                            |       |                                                                                                                                  |                          |                     |                                                    |                           |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------|------------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------|---------------------|----------------------------------------------------|---------------------------|--|--|--|--|
| CORRECT TYPO ERROR<br>EC NO: S2007-1097<br>2007/06/20<br>DRWN:ATSEE<br>CHKD:SKANG<br>2007/06/21<br>APPR:MLONG<br>2007/06/22 | DESCRIPTION | QUALITY SYMBOLS<br><br>▽=0<br>▽C=0 | GENERAL TOLERANCES (UNLESS SPECIFIED)                      |       | DIMENSION STYLE<br>MM ONLY                                                                                                       |                          | SCALE<br>NTS        | DESIGN UNITS<br>METRIC                             | THIRD ANGLE<br>PROJECTION |  |  |  |  |
|                                                                                                                             |             |                                    |                                                            | mm    | INCH                                                                                                                             | DRAWN BY<br>ATSEE        | DATE<br>2003/10/08  | TITLE<br>MGRID, SHROUDED HEADER<br>VERTICAL, W/PEG |                           |  |  |  |  |
|                                                                                                                             |             |                                    | 4 PLACES                                                   | ± --- | ± ---                                                                                                                            | CHECKED BY<br>KCL ING    | DATE<br>2003/11/07  |                                                    |                           |  |  |  |  |
|                                                                                                                             |             |                                    | 3 PLACES                                                   | ± --- | ± ---                                                                                                                            | APPROVED BY<br>SKTOH     | DATE<br>2003/11/07  |                                                    |                           |  |  |  |  |
|                                                                                                                             |             |                                    | 2 PLACES                                                   | ± 0.2 | ± ---                                                                                                                            | MOLEX MOLEX INCORPORATED |                     | DOCUMENT NO.<br>SD-87831-020                       |                           |  |  |  |  |
|                                                                                                                             |             |                                    | 1 PLACE                                                    | ± --- | ± ---                                                                                                                            | ANGULAR ± 3 °            |                     |                                                    |                           |  |  |  |  |
|                                                                                                                             |             |                                    | DRAFT WHERE APPLICABLE<br>MUST REMAIN<br>WITHIN DIMENSIONS |       | MATERIAL NO.<br>SEE TABLE                                                                                                        |                          | SHEET NO.<br>1 OF 2 |                                                    |                           |  |  |  |  |
|                                                                                                                             |             |                                    | REV                                                        | A8    | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX<br>INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |                          |                     |                                                    |                           |  |  |  |  |
|                                                                                                                             |             |                                    |                                                            |       |                                                                                                                                  |                          |                     |                                                    |                           |  |  |  |  |

9 8 7 6 5 4 3 2 1



### ORIENTATION OF PART IN TUBE

| P/N IN<br>TUBE | CKT<br>SIZE | VOID PIN<br>LOCATION | DIMENSION |       |       |       |       |
|----------------|-------------|----------------------|-----------|-------|-------|-------|-------|
|                |             |                      | A         | B     | C     | D     | E     |
| 87831-06**     | 6           | ---                  | 8.65      | 4.00  | 7.00  | 6.85  | ----- |
| 87831-08**     | 8           | ---                  | 10.65     | 6.00  | 9.00  | 8.85  | ----- |
| 87831-10**     | 10          | ---                  | 12.65     | 8.00  | 11.00 | 10.85 | ----- |
| 87831-12**     | 12          | ---                  | 14.65     | 10.00 | 13.00 | 12.85 | ----- |
| 87831-14**     | 14          | ---                  | 16.65     | 12.00 | 15.00 | 14.85 | 8.00  |
| 87831-16**     | 16          | ---                  | 18.65     | 14.00 | 17.00 | 16.85 | 10.00 |
| 87831-18**     | 18          | ---                  | 20.65     | 16.00 | 19.00 | 18.85 | 12.00 |
| 87831-20**     | 20          | ---                  | 22.65     | 18.00 | 21.00 | 20.85 | 14.00 |
| 87831-22**     | 22          | ---                  | 24.65     | 20.00 | 23.00 | 22.85 | 16.00 |
| 87831-24**     | 24          | ---                  | 26.65     | 22.00 | 25.00 | 24.85 | 18.00 |
| 87831-26**     | 26          | ---                  | 28.65     | 24.00 | 27.00 | 26.85 | 20.00 |
| 87831-28**     | 28          | ---                  | 30.65     | 26.00 | 29.00 | 28.85 | 22.00 |
| 87831-30**     | 30          | ---                  | 32.65     | 28.00 | 31.00 | 30.85 | 24.00 |
| 87831-32**     | 32          | ---                  | 34.65     | 30.00 | 33.00 | 32.85 | 26.00 |
| 87831-34**     | 34          | ---                  | 36.65     | 32.00 | 35.00 | 34.85 | 28.00 |
| 87831-36**     | 36          | ---                  | 38.65     | 34.00 | 37.00 | 36.85 | 30.00 |
| 87831-38**     | 38          | ---                  | 40.65     | 36.00 | 39.00 | 38.85 | 32.00 |
| 87831-40**     | 40          | ---                  | 42.65     | 38.00 | 41.00 | 40.85 | 34.00 |
| 87831-42**     | 42          | ---                  | 44.65     | 40.00 | 43.00 | 42.85 | 36.00 |
| 87831-44**     | 44          | ---                  | 46.65     | 42.00 | 45.00 | 44.85 | 38.00 |
| 87831-46**     | 46          | ---                  | 48.65     | 44.00 | 47.00 | 46.85 | 40.00 |
| 87831-48**     | 48          | ---                  | 50.65     | 46.00 | 49.00 | 48.85 | 42.00 |
| 87831-50**     | 50          | ---                  | 52.65     | 48.00 | 51.00 | 50.85 | 44.00 |
| 87831-5128     | 24          | 12                   | 26.65     | 22.00 | 25.00 | 24.85 | 18.00 |

87831 - \* \* \* \*

## PLATING OPTIONS

28 - 0,38um/15uin GOLD IN CONTACT AREA AND 1,88um/75uin MIN. TIN  
IN SOLDER TAIL AREA OVER 1,27um/50uin MIN. NICKEL OVERALL.

29 - 0,76um/30uin GOLD IN CONTACT AREA AND 1,88um/75uin MIN. TIN  
IN SOLDER TAIL AREA OVER 1,27um/50uin MIN. NICKEL OVERALL.

|                                                                                                                                             |                                        |                    |                                                            |                                       |                    |              |                            |                     |                                                    |                        |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------------|------------------------------------------------------------|---------------------------------------|--------------------|--------------|----------------------------|---------------------|----------------------------------------------------|------------------------|------------------------|
| CORRECT TYPE ERROR<br>EC NO: S2007-1097<br>DRAWN:ATSEE<br>CHK'D:SKANG<br>APPR:MLONG<br>A8                                                   | 2007/06/20<br>2007/06/21<br>2007/06/22 | DESCRIPTION<br>REV | QUALITY SYMBOLS                                            | GENERAL TOLERANCES (UNLESS SPECIFIED) |                    |              | DIMENSION STYLE<br>MM ONLY |                     | SCALE<br>NTS                                       | DESIGN UNITS<br>METRIC | THIRD ANGLE PROJECTION |
|                                                                                                                                             |                                        |                    | =0<br>=0                                                   |                                       | mm                 | INCH         | DRAWN BY<br>ATSEE          | DATE<br>2003/10/08  | TITLE<br>MGRID, SHROUDED HEADER<br>VERTICAL, W/PEG |                        |                        |
|                                                                                                                                             |                                        |                    |                                                            | 4 PLACES                              | ± ---              | ± ---        | CHECKED BY<br>KCL ING      | DATE<br>2003/11/07  |                                                    |                        |                        |
|                                                                                                                                             |                                        |                    |                                                            | 3 PLACES                              | ± ---              | ± ---        |                            |                     |                                                    |                        |                        |
|                                                                                                                                             |                                        |                    |                                                            | 2 PLACES                              | ± 0.2              | ± ---        |                            |                     |                                                    |                        |                        |
| 1 PLACE                                                                                                                                     | ± ---                                  | ± ---              | APPROVED BY<br>SKTOH                                       | DATE<br>2003/11/07                    | MOLEX INCORPORATED |              |                            |                     |                                                    |                        |                        |
|                                                                                                                                             |                                        |                    | ANGULAR ± 3 °                                              |                                       |                    | MATERIAL NO. | DOCUMENT NO.               | SHEET NO.<br>2 OF 2 |                                                    |                        |                        |
|                                                                                                                                             |                                        |                    | DRAFT WHERE APPLICABLE<br>MUST REMAIN<br>WITHIN DIMENSIONS |                                       |                    | SEE TABLE    |                            | SD-87831-020        |                                                    |                        |                        |
| SIZE<br>A3 THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX<br>INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |                                        |                    |                                                            |                                       |                    |              |                            |                     |                                                    |                        |                        |