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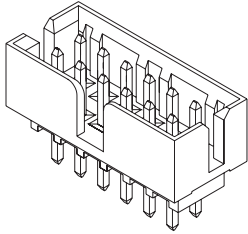
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Jameco Part Number 2046361

2.00mm (.079") Pitch Milli-Grid™ Header

87831 Shrouded Vertical, SMC



Features and Benefits

- Sizes 4 to 50 circuits
- Fully shrouded to protect pins during mating/unmating
- Center slot for polarization
- Front latches for mechanical locking
- Center polarization slot (6 to 12 circuits); center polarization slot and front latches (14 to 50 circuits)

Reference Information

Product Specification: PS-87831-027
Packaging: Tube (contact Molex for embossed tape)
UL File No.: E29179
CSA File No.: LR19980
Mates With: 50394, 51110 and 87568
Designed In: Millimeters

Electrical

Voltage: 125V
Current: 2.0A
Dielectric Withstanding Voltage: 1000V
Insulation Resistance: 1000 Megohms min.

Physical

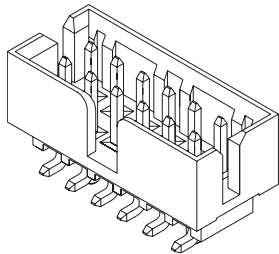
Housing: Black 4/6 nylon, UL 94V-0
Contact: Phosphor Bronze
Plating: See Table
Operating Temperature: -55 to +105°C

Circuits	Order No.		Lead-free
	15μ" Select Gold	30μ" Select Gold	
4	87831-0420	87831-0421	Yes
6	87831-0620	87831-0621	
8	87831-0820	87831-0821	
10	87831-1020	87831-1021	
12	87831-1220	87831-1221	
14	87831-1420	87831-1421	
16	87831-1620	87831-1621	
18	87831-1820	87831-1821	
20	87831-2020	87831-2021	
22	87831-2220	87831-2221	
24	87831-2420	87831-2421	
26	87831-2620	87831-2621	

Circuits	Order No.		Lead-free
	15μ" Select Gold	30μ" Select Gold	
28	87831-2820	87831-2821	Yes
30	87831-3020	87831-3021	
32	87831-3220	87831-3221	
34	87831-3420	87831-3421	
36	87831-3620	87831-3621	
38	87831-3820	87831-3821	
40	87831-4020	87831-4021	
42	87831-4220	87831-4221	
44	87831-4420	87831-4421	
46	87831-4620	87831-4621	
48	87831-4820	87831-4821	
50	87831-5020	87831-5021	

2.00mm (.079") Pitch Milli-Grid™ Header

87832 Shrouded SMT



Features and Benefits

- Sizes 4 to 50 circuits
- Fully shrouded to protect pins during mating/unmating
- Center slot for polarization
- Front latches for mechanical locking
- Locating pegs for automatic insertion process
- Center polarization slot (6 to 12 circuits); center polarization and front latches (14 to 50 circuits)
- Contact Molex for embossed tape

Reference Information

Product Specification: PS-87831-027
Packaging: Tube (contact Molex for tape and reel)
UL File No.: E29179
CSA File No.: LR19980
Mates With: 50394, 51110 and 87568
Designed In: Millimeters

Electrical

Current: 2.0A
Dielectric Withstanding Voltage: 1000V
Insulation Resistance: 1000 Megohms min.

Physical

Housing: Black 4/6 nylon, UL 94V-0
Contact: Phosphor Bronze
Plating: See Table
Operating Temperature: -55 to +105°C

Circuits	Order No.		Lead-free
	15μ" Select Gold	30μ" Select Gold	
4	87832-0420	87832-0421	Yes
6	87832-0620	87832-0621	
8	87832-0820	87832-0821	
10	87832-1020	87832-1021	
12	87832-1220	87832-1221	
14	87832-1420	87832-1421	
16	87832-1620	87832-1621	
18	87832-1820	87832-1821	
20	87832-2020	87832-2021	
22	87832-2220	87832-2221	
24	87832-2420	87832-2421	
26	87832-2620	87832-2621	

Circuits	Order No.		Lead-free
	15μ" Select Gold	30μ" Select Gold	
28	87832-2820	87832-2821	Yes
30	87832-3020	87832-3021	
32	87832-3220	87832-3221	
34	87832-3420	87832-3421	
36	87832-3620	87832-3621	
38	87832-3820	87832-3821	
40	87832-4020	87832-4021	
42	87832-4220	87832-4221	
44	87832-4420	87832-4421	
46	87832-4620	87832-4621	
48	87832-4820	87832-4821	
50	87832-5020	87832-5021	



PRODUCT SPECIFICATION

1.0 SCOPE

This specification covers the performance requirements for Milli-Grid 2mm Dual Row Shrouded Headers.

2.0 PRODUCT DESCRIPTION

2.1 Product covered by this specification are for series number

Product Name	Part Number
MGrid Headers (Vertical)	87831 Series
MGrid Headers (SMT)	87832 Series
MGrid Headers (R/A)	87833 Series

These series mate with Molex :

- Milli-Grid 2mm Grid Wire to Board Connector, Crimp Receptacle Housing, 51110 series and Crimp Terminal, 50394 series.
- 2mm Milli-Grid Dual Row IDT, 87568 series.

2.2 For dimensions, materials & plating, refer to the appropriate product drawings.

2.3 Safety Agency Approvals:

UL File Number : E29179
CSA File Number : LR19980

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

The following documents are part of this specification to the extent specified herewith. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and reference documents, this specification shall take the precedence.

MIL-STD-202 Test Methods for Electrical and Electronic Component Parts.

MIL-STD-1344 Test Methods of Electrical Connector

Reference Product Specifications

PS-51110-001 Milli-Grid 2mm Grid Wire to Board Connector

PS-87568-004 2mm Milli-Grid Dual Row IDT Receptacle

REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
A1	EC No: S2006-0204 DATE: 2005/08/08	MILLIGRID 2MM DUAL ROW SHROUDED HEADERS	1 of 3
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
PS-87831-027	YLQIAO 2005/08/08	BOKOK 2005/08/23	PTLIM 2005/08/23



PRODUCT SPECIFICATION

4.0 RATINGS

- 4.1 Voltage : 125
- 4.2 Current : 2.00 Amp MAXIMUM
- 4.3 Operating Temperature : -55°C to +105°C

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Insulation Resistance	Apply 500 VDC for 1 minute per MIL-STD -1344A, METHOD 3003.1	1000 Megaohms Minimum
2	Dielectric Strength	1000 Vrms for 1 minute between adjacent terminals.	No breakdown

5.2 MECHANICAL REQUIREMENTS

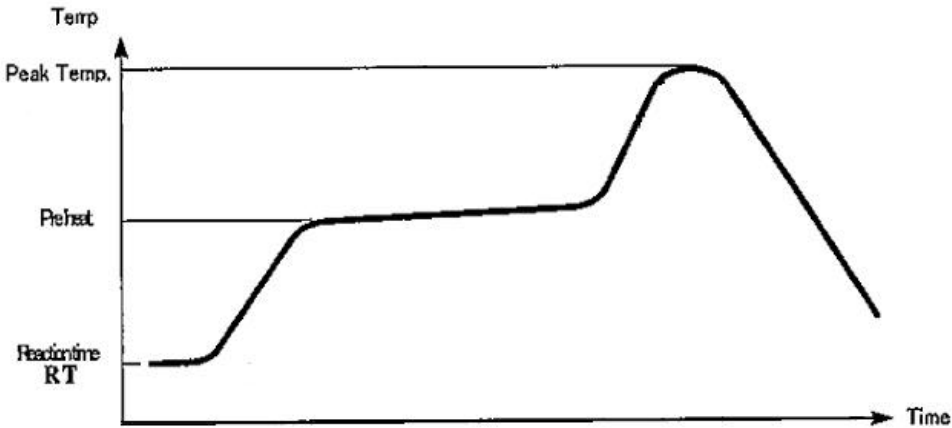
ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
3	Pin/ Terminal Retention Force (in Housing)	Apply an axial load on the terminal in the housing to dislodge the terminals from the connector at a rate of 0.50 inch per minute	Retention Force: 850 g Min per pin. (Before heat soldering)

REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
A1	EC No: S2006-0204 DATE: 2005/08/08	MILLIGRID 2MM DUAL ROW SHROUDED HEADERS	2 of 3
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
PS-87831-027	YLQIAO 2005/08/08	BOKOK 2005/08/23	PTLIM 2005/08/23



PRODUCT SPECIFICATION

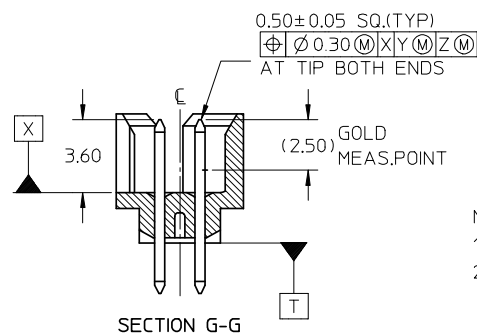
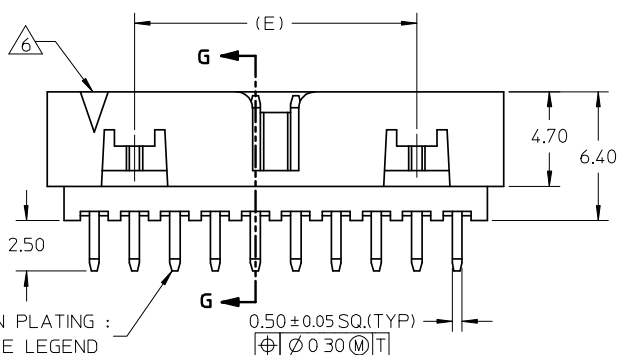
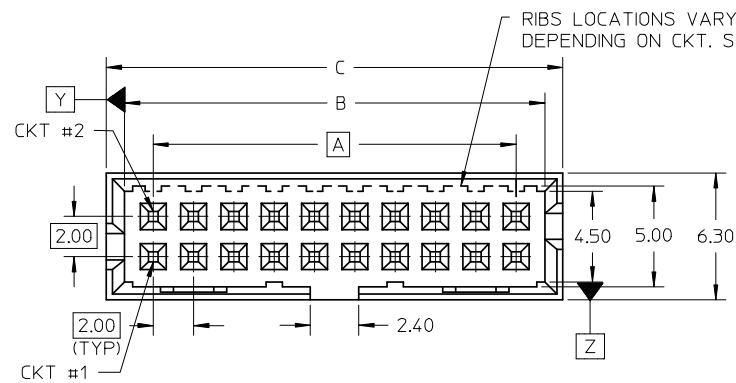
5.3 ENVIROMENT REQUIREMENTS

4.	Solderability	Solder Time: 5 +/-0.5 secs. Solder Temperature: 260+/- 5°C	95% of the immersed area must show no voids, pin holes.
5.	Resistance to Soldering Heat (Through Hole)	Solder tail to be dipped in flux as per MIL - STD-202F method 210 condition B. Solder Temperature: 260 +/- 5°C Solder Time: 10 +/- 1 secs	No damage in appearance of the connector
6.	Resistance to IR reflow heat (SMT)	Pass product through IR machine for 3 cycles of the following reflow profile: Average Ramp Rate 3°C/sec max. Preheat Temp. (Min.) 150 °C Preheat Temp. (Max.) 200°C Preheat Time 60 – 180 sec Ramp to Peak 3°C/sec max. Time over liquidus (217°C) 60 – 150 sec Peak Temperature 260 +/-5°C Time within 5°C of peak 20 – 40 sec. Ramp – Cool Down 6°C/sec max. Time 25°C to Peak 8 mins max.	No damage in appearance of the connector
	<u>Reflow Temperature Profile</u> 		

6.0 Packaging

Product shall be packed in either Tube or Tape & Reel and protected against damage during handling, transportation and storage.

REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
A1	EC No: S2006-0204 DATE: 2005/08/08	MILLIGRID 2MM DUAL ROW SHROUDED HEADERS	3 of 3
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
PS-87831-027	YLQIAO 2005/08/08	BOKOK 2005/08/23	PTLIM 2005/08/23

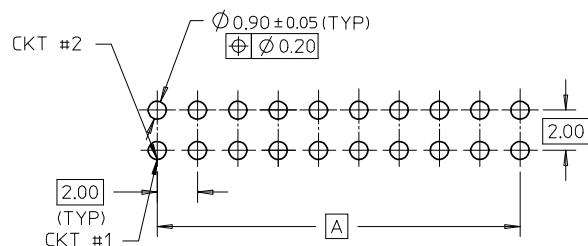
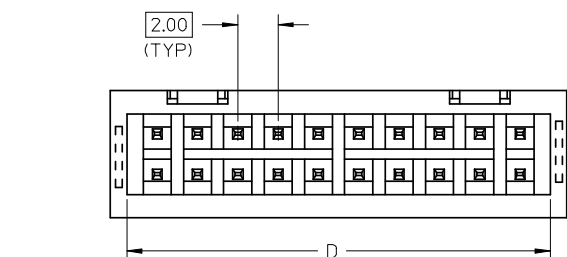


PART NUMBER LEGEND :

87831 - * * * *

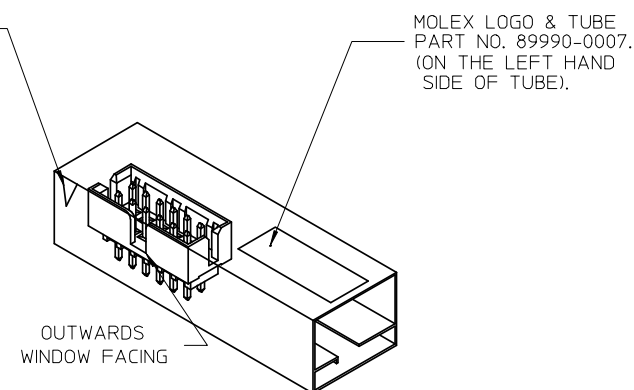
PLATING OPTION

- 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.



RECOMMENDED PCB PATTERN

RED ARROW INDICATION



NOTES:

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

PDR#S-001858-00-00
EC NO: S2009-0092
DRWN:SKANG
CHKD:ATSEE
APPR:MLONG
2008/08/12
2008/08/19
2008/08/21

QUALITY SYMBOLS
▽=0
▽=0

GENERAL TOLERANCES (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	± ---	± ---
3 PLACES	± ---	± ---
2 PLACES	± 0.2	± ---
1 PLACE	± ---	± ---

ANGULAR ± 3 °

DRAFT WHERE APPLICABLE
MUST REMAIN
WITHIN DIMENSIONS

DIMENSION STYLE MM ONLY

DRAWN BY	DATE
ATSEE	2003/10/03
CHECKED BY	DATE
KCL ING	2003/11/07
APPROVED BY	DATE
SKTOH	2003/11/07

MATERIAL NO.

SEE TABLE

SIZE
A3

SCALE NTS

DESIGN UNITS METRIC

THIRD ANGLE PROJECTION

MGRID, SHROUDED HEADER
VERTICAL
W/SLOT & STANDOFF



MOLEX INCORPORATED

DOCUMENT NO.

SD-87831-011

SHEET NO.

1 OF 2

	10		9		8		7		6		5		4		3		2		1		
F	P/N IN TUBE	CKT SIZE	VOID POSITION	DIMENSION					} NO CENTRE POLARIZATION SLOT												
				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													
E	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													
D	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													
C	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													
B	87831-6020	24	20	22.00	24.85	26.65	25.00	18.00													
A																			A		
	PDR#S-001858-00-00 EC NO: S2009-0092 DRWN:SKANG CHKD:ATSEE APPR:MLONG				2008/08/12 2008/08/19 2008/08/21		QUALITY SYMBOLS ▽=0 ▽=0	GENERAL TOLERANCES (UNLESS SPECIFIED) 4 PLACES ± --- ± --- 3 PLACES ± --- ± --- 2 PLACES ± 0.2 ± --- 1 PLACE ± --- ± --- ANGULAR ± 3 °	DIMENSION STYLE MM ONLY		SCALE NTS	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION								
	DRAWN BY ATSEE		DATE 2003/10/03		TITLE MGRID, SHROUDED HEADER VERTICAL W/SLOT & STANDOFF																
	CHECKED BY KCL ING		DATE 2003/11/07		APPROVED BY SKTOH		DATE 2003/11/07		MOLEX INCORPORATED												
	DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS				MATERIAL NO. SEE TABLE		DOCUMENT NO. SD-87831-011				SHEET NO. 2 OF 2										
	SIZE A3				THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION																
	fb_frame_A3_P_AM_T Rev. E 2006/04/15																				
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