

Distributed by:



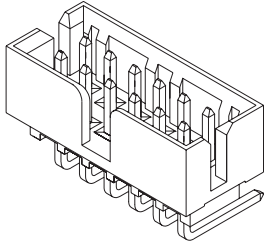
www.Jameco.com ♦ 1-800-831-4242

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Jameco Part Number 1978617

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

87833 Shrouded Right Angle



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)
- Surface Mount Compatible
- 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.

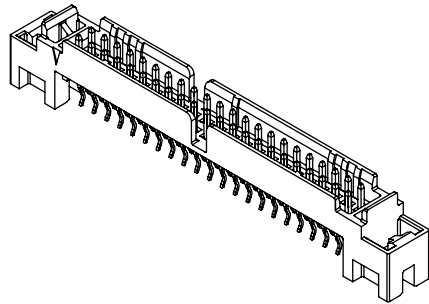
Physical

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	87833-0420	87833-0421	Yes
6	87833-0620	87833-0621	
8	87833-0820	87833-0821	
10	87833-1020	87833-1021	
12	87833-1220	87833-1221	
14	87833-1420	87833-1421	
16	87833-1620	87833-1621	
18	87833-1820	87833-1821	
20	87833-2020	87833-2021	
22	87833-2220	87833-2221	
24	87833-2420	87833-2421	
26	87833-2620	87833-2621	
28	87833-2820	87833-2821	Yes
30	87833-3020	87833-3021	
32	87833-3220	87833-3221	
34	87833-3420	87833-3421	
36	87833-3620	87833-3621	
38	87833-3820	87833-3821	
40	87833-4020	87833-4021	
42	87833-4220	87833-4221	
44	87833-4420	87833-4421	
46	87833-4620	87833-4621	
48	87833-4820	87833-4821	
50	87833-5020	87833-5021	

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

87981/87982/87983/87984 With Latch Hook



Features and Benefits

- Early entry system provides long pin wipe
- Polarization slot to prevent reversed mating
- Polarization peg in vertical type (series 87982/87983) ensures proper orientation during mounting to PCB

Reference Information

Product Specification: PS-87981-018
Packaging: See table
Mates With: 87985 IDT Receptacle

Electrical

Voltage: 125V AC
Current: 2.0A max.
Contact Resistance: 30 milliohms max.
Dielectric Strength: 500V AC
Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 0.85kgf
Mating Force: 200gf per circuit max.
Unmating Force: 40gf per circuit min.
Durability: 30 cycles

Physical

Housing: See table
Contact: Phosphor Bronze
Plating: Contact Area—0.38μm (15μ") min. Gold
Solder Tail Area—Tin
Underplating: Nickel
PCB Thickness: 1.60mm +/-0.10mm
Operating Temperature: -40 to +85°C

Circuits	Order No.	Orientation	PCB Mounting	Packaging	Housing	Lead-free
30	87982-3030	Vertical	Through Hole	Tube	Black glass-filled nylon, UL 94V-0	Yes
40	87982-3040	Vertical	Through Hole	Tube	Black glass-filled nylon, UL 94V-0	
40	87984-3040	Right Angle	Through Hole	Tube	Black glass-filled nylon, UL 94V-0	
44	87981-3044	Right Angle	Straddle Mount	Tube	Black glass-filled LCP, UL 94V-0	
44	87982-3044	Vertical	Through Hole	Tube	Black glass-filled nylon, UL 94V-0	
44	87983-3044	Vertical	SMT	Tape and Reel	Black glass-filled nylon, UL 94V-0	
50	87981-3050	Right Angle	Straddle Mount	Tube	Black glass-filled LCP, UL 94V-0	
50	87982-3050	Vertical	Through Hole	Tube	Black glass-filled nylon, UL 94V-0	

Contact Molex for availability of other circuit sizes (4-50 circuits)



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

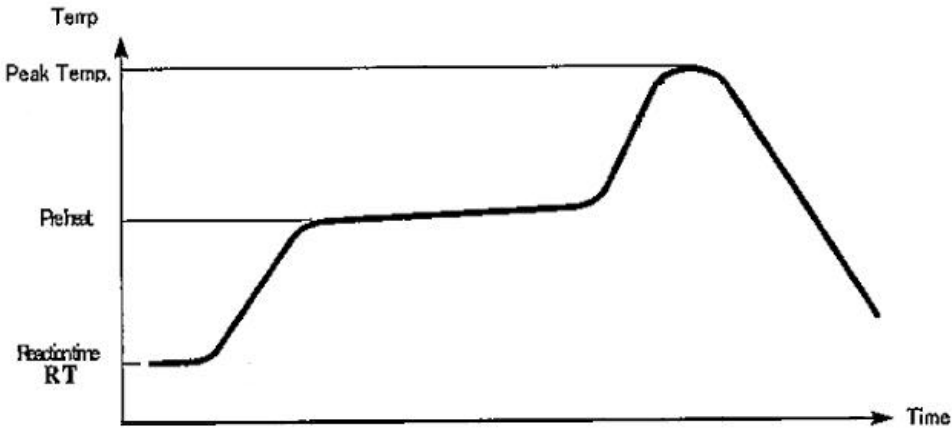
ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
3	Pin/ Terminal Retention Force (in Housing)	Apply an axial load on the terminal in the housing to dislodge the terminals from the connector at a rate of 0.50 inch per minute	Retention Force: 850 g Min per pin. (Before heat soldering)

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

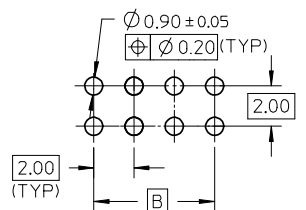
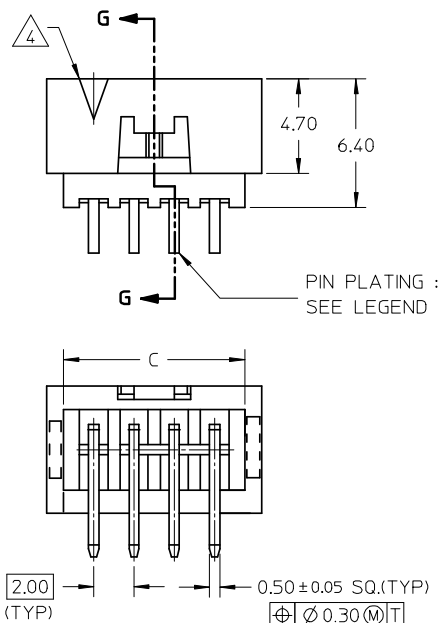
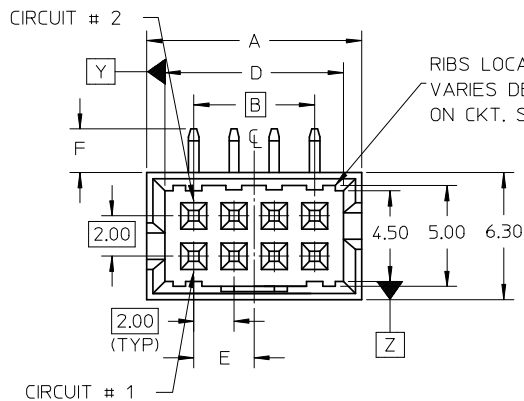
5.3 ENVIROMENT REQUIREMENTS

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

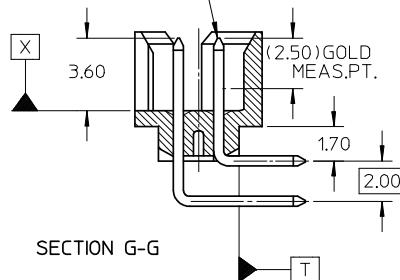
Product shall be packed in either Tube or Tape & Reel and protected against damage during handling, transportation and storage.

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



RECOMMENDED PCB PATTERN

0.50±0.05 SQ. (TYP)
 $\Phi \ 0.30 \ (M) \ X \ Y \ (M) \ Z \ (M)$



SECTION G-G

ASSEMBLY P/N PACKED IN TUBE (W/O KAPTON)	ASSEMBLY P/N PACKED IN TUBE (WITH KAPTON)	ASSEMBLY P/N PACKED IN T&R (WITH KAPTON)	CKT SIZE	VOID PIN LOCATION	DIMENSION						PLATING OPTION
					A	B	C	D	E	F	
87833-0431	87833-0441	87833-0451	4	-	6.65	2.00	5.00	4.85	1.00	2.16	1
87833-0631	87833-0641	87833-0651	6	-	8.65	4.00	7.00	6.85	2.00	2.16	1
87833-0831	87833-0841	87833-0851	8	-	10.65	6.00	9.00	8.85	3.00	2.16	1
87833-1031	-	-	10	-	12.65	8.00	11.00	10.85	4.00	2.16	1
87833-1231	-	-	12	-	14.65	10.00	13.00	12.85	5.00	2.16	1
87833-5230	-	-	4	-	6.65	2.00	5.00	4.85	1.00	2.16	2
87833-0432	-	-	6	-	8.65	4.00	7.00	6.85	2.00	2.16	2
87833-0632	-	-	8	-	10.65	6.00	9.00	8.85	3.00	2.16	2
87833-0832	-	-	10	-	12.65	8.00	11.00	10.85	4.00	2.16	2
87833-1032	-	-	12	-	14.65	10.00	13.00	12.85	5.00	2.16	2
87833-1232	-	-	10	10	12.65	8.00	11.00	10.85	4.00	2.16	1
87833-5220	-	-	10	-	12.65	8.00	11.00	10.85	4.00	1.70	1
-	87833-1041	87833-1051	10	-	12.65	8.00	11.00	10.85	4.00	1.70	1
87833-0661	-	-	6	-	8.65	4.00	7.00	6.85	2.00	3.18	1

PLATING OPTIONS:

- 0.38um/15uin GOLD IN CONTACT AREA AND 1.88um/75uin MIN.TIN IN SOLDER TAIL AREA OVER 1.27um/50uin MIN. NICKEL OVERALL.
- 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, 8 CIRCUIT SIZE WAFER IS SHOWN.
- MATERIAL :
HOUSING : NYLON 46, GLASS FILLED, UL94V-0, COLOR BLACK.
PIN : 0.50MM SQ.PHOSPHOR BRONZE.
KAPTON TAPE : POLYIMIDE 4mm X 30m X 0.055mm COLOR: AMBER
- PRODUCT SPECIFICATION PS-87831-027 APPLIES.
- CKT 4 & 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 WITH MOISTURE BARRIER BAG.

PDR#S-001855-00-00
 EC NO: S2009-0081
 DRWN:SKANG
 CHKD:ATSEE
 APPR:MLONG
 2008/08/25
 2008/08/25
 2008/08/25

QUALITY
 SYMBOLS
 $\nabla = 0$
 $\nabla = 0$

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	2003/10/23
CHECKED BY	DATE
KCL ING	2003/11/07
APPROVED BY	DATE
SKTOH	2003/11/07

MATERIAL NO.
 SEE TABLE

SCALE
 NTS

DESIGN UNITS
 METRIC

THIRD ANGLE
 PROJECTION

MOLEX INCORPORATED

SD-87833-011

1 OF 2

THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION

10 9 8 7 6 5 4 3 2 1

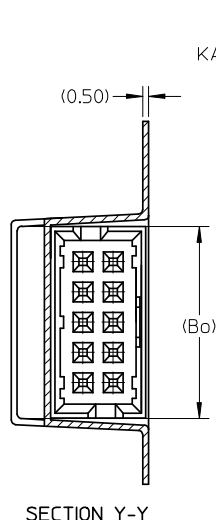
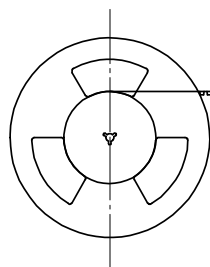
RED ARROW
INDICATION

MOLEX LOGO & TUBE
PART NO. 89990-0007.
(ON THE LEFT HAND SIDE
OF TUBE).

WINDOW FACING
OUTWARDS

REF: ORIENTATION OF PART IN TUBE.
(FOR THE REFERENCE OF PART/TUBE ASSEMBLY.)

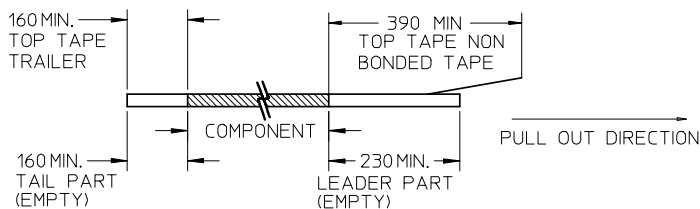
CUSTOMER
PULL OUT DIRECTION



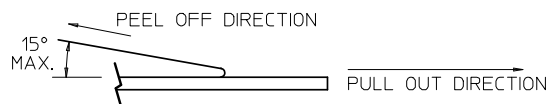
SECTION Y-Y

NOTES:

1. LEADER AND TRAILER TAPE



2. PEELING OFF FORCE OF THE TOP TAPE: 20-80gf.
(PEELING DIRECTION AS SHOWN IN FOLLOWING FIGURE)

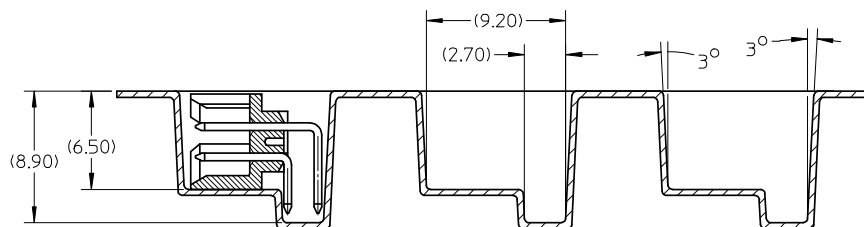
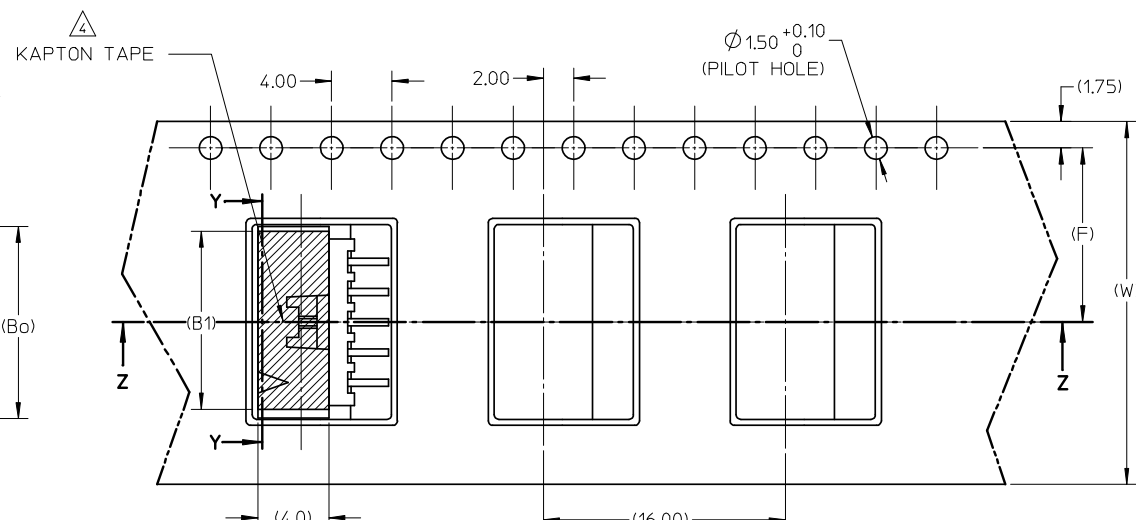


3. PACKAGING STANDARD IS AS PER EIA-481.

△ KAPTON TAPE SHOULD BE LOCATED AS CENTRAL
OF PART AS POSSIBLE AND MUST COVER THE WINDOWS.

5. TAPE & REEL QUANTITY : 500 PCS/REEL

ASSEMBLY P/N PACKED IN T&R (WITH KAPTON)	CKT SIZE	(F)	(Bo)	(B1)	(W)
87833-0451	04	7.50	7.00	6.00	16.00
87833-0651	06	11.50	9.00		24.00
87833-0851	08	11.50	11.00	10.00	24.00
87833-1051	10	11.50	13.00	12.00	24.00



SECTION Z-Z

PDR#S-001855-00-00 EC NO: S2009-0081 2008/08/25 DRWN:SKANG CHKD:ATSEE 2008/08/25 APPR:MLONG 2008/08/25	QUALITY SYMBOLS ▽=0 ▽C=0	GENERAL TOLERANCES (UNLESS SPECIFIED)	DIMENSION STYLE		SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION
			MM ONLY		NTS	METRIC	
			mm	INCH	TITLE		
			4 PLACES ± ---	± ---	MGRID, SHROUDED HEADER		
			3 PLACES ± ---	± ---	W/LOCKING FEATURE, R/A		
			2 PLACES ± 0.2	± ---			
			1 PLACE ± ---	± ---			
			ANGULAR ± 3 °		MOLEX INCORPORATED		
			DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		SD-87833-011		
			SEE TABLE		SHEET NO. 2 OF 2		
A12	REV	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