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ELECTRONICS

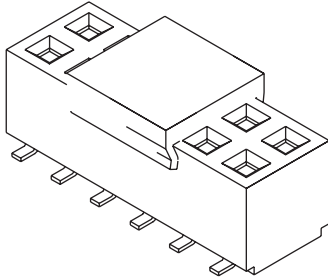
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Jameco Part Number 1978140

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

87381
Dual Row, SMT
Top Entry



Features and Benefits

- Size 6 to 24, 28 to 50 circuits
- Other plating and void pin options available
- Cap version for robotic delivery
- Contact Molex for peg version

Reference Information

Product Specification: PS-87380
Packaging: Tube (Contact Molex for tape and reel packaging)
UL File No.: E29179
CSA File No.: LR19980A
Mates With: 0.50mm (.020") square pin headers
Designed In: Millimeters

Electrical

Current: 1.9A max.
Contact Resistance: 15 milliohms max.
Dielectric Withstanding Voltage: 1000V AC/1min.
Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Insertion Force: 180g max.
Contact Retention to Housing: 5.38N (1.21 lb) min.
Durability: 25 cycles

Physical

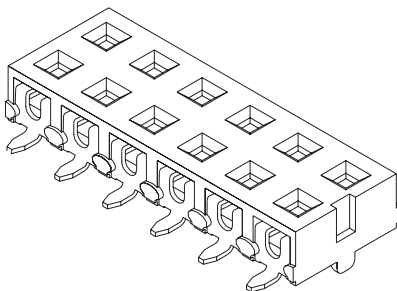
Housing: Black high-temp thermoplastic
Contact: Copper Alloy
Plating: See Table
Operating Temperature: -55 to +105°C

Circuits	Order No.		Lead-free
	0.38mm (15 μ l") Gold	0.76mm (30 μ l") Gold	
6	87381-0664	87381-0663	Yes
8	87381-0864	87381-0863	
10	87381-1064	87381-1063	
12	87381-1264	87381-1263	
14	87381-1464	87381-1463	
16	87381-1664	87381-1663	
18	87381-1864	87381-1863	
20	87381-2064	87381-2063	
22	87381-2264	87381-2263	
24	87381-2464	87381-2463	
28	87381-2864	87381-2863	

Circuits	Order No.		Lead-free
	0.38mm (15 μ l") Gold	0.76mm (30 μ l") Gold	
30	87381-3064	87381-3063	Yes
32	87381-3264	87381-3263	
34	87381-3464	87381-3463	
36	87381-3664	87381-3663	
38	87381-3864	87381-3863	
40	87381-4064	87381-4063	
42	87381-4264	87381-4263	
44	87381-4464	87381-4463	
46	87381-4664	87381-4663	
48	87381-4864	87381-4863	
50	87381-5064	87381-5063	

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

87340
Top Entry
SMT (VLPR2)



Features and Benefits

- Sizes 4 to 20 circuits
- Locating peg version standard
- Very low profile height 2.15mm
- End-to-end stackable
- Optional without peg version
- Contact Molex for pick-and-place cap or embossed tape

Reference Information

Product Specification: PS-87340
Packaging: Tube
UL File No.: E29179
CSA File No.: LR19980
Mates With: 0.50mm square pin headers
Designed In: Millimeters

Electrical

Voltage: 125V
Current: 1.0A
Contact Resistance: 15 milliohms max.
Dielectric Withstanding Voltage: 1000V
Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Insertion Force: 180g max.
Contact Retention to Housing: 0.32kg min.
Normal Force: 50g min.

Physical

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

Circuits	Order No.		Lead-free
	15 μ l" Select Gold	30 μ l" Select Gold	
4	87340-0424	87340-0423	Yes
6	87340-0624	87340-0623	
8	87340-0824	87340-0823	
10	87340-1024	87340-1023	
12	87340-1224	87340-1223	
14	87340-1424	87340-1423	
16	87340-1624	87340-1623	
18	87340-1824	87340-1823	
20	87340-2024	87340-2023	



PRODUCT SPECIFICATION

"MILLID-GRID" VERY LOW PROFILE RECEPTACLE (TOP/ BOTTOM ENTRY)

1.0 SCOPE

This specification covers the performance requirement for Milli-Grid Very Low Profile Receptacle (Top/ Bottom Entry).

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

Part Numbers

87340

Description

Milli-Grid Very Low Profile Receptacle (Top/ Bottom Entry)

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See the appropriate Sales drawing for information on dimensions, materials, plating and markings, recommended module outlines and footprint specifications.

2.3 SAFETY AGENCY APPROVALS

UL File Number: E29179 Vol.10

CSA File Number: LR 19980A -182

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

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

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

EIA Standards Electrical Connector Test Procedure

MIL-STD-1344 Test Methods of Electrical Connector

REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
D	EC No: S2007-1024 DATE: 2007/05/18	MILLI-GRID, VERY LOW PROFILE RECEPTACLE (TOP/ BOTTOM ENTRY)	1 of 6
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
PS-87340	ATSEE 2007/05/18	SK ANG 2007/05/21	ML ONG 2007/05/21



PRODUCT SPECIFICATION

4.0 RATINGS

ITEM	STANDARD	
Rated Voltage (Maximum)	125 V	[AC (rms) / DC]
Rated Current (Maximum)	1.0 A	
Temperature Range	- 55 °C to + 105 °C	

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Contact Resistance	Measure Contact Resistance by 10mA DC, open circuit voltage 20mV. Per MIL-STD-1344A, Method 3004.	15 mohms Maximum
2	Insulation Resistance	Measurement taken between adjacent contacts where 250 VDC is applied for 1 minute.	1000 Mega ohms Minimum
3	Dielectric Strength	1000 V AC/ DC for 1 minute between adjacent terminals.	No breakdown.
4	Capacitance	Measure between adjacent terminals.	1.0 pf Maximum

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PRODUCT SPECIFICATION

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	Terminal Retention in Housing	Apply an axial load to dislodge terminal from housing at a rate of 12.7 mm/ min.	3.14N (0.32kgf) Minimum
6	Insertion Force	Insert a 0.50mm square pin at a rate of 12 ± 5 cm/ min. (See 7.0 for Pin Tip Configuration)	1.76N (0.18kgf) per Circuit Maximum
7	Withdrawal Force	Withdraw a 0.50mm square pin at a rate of 12 ± 5 cm/ min. (See 7.0 for Pin Tip Configuration)	0.2N (0.02kgf) per Circuit Minimum
8	Contact Normal Force	Apply a load normal to the point of contact of the terminal at deflection of 0.06mm.	0.49N (0.05kgf) Minimum
9	Durability	Mate and unmate connector up to 25 cycles at a maximum rate of 10 cycles / minute.	25 mohms Maximum
10	Mechanical Shock	Mate connectors and shock at 50g's with ½ sine wave (11 milliseconds) shocks in the ±X, ±Y, ±Z axes (18 shocks total)	Contact Resistance : 25 mohms Maximum Discontinuity : 1 micro-second Maximum
11	Vibration	Simple Harmonic Motion 1.52mm total excursion, 10 – 55 – 10 Hz transverse in 1 minute for 2 hours in each axis. MIL-STD-202F, method 201.	Contact Resistance : 25 mohms Maximum Discontinuity : 1 micro-second Maximum

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PRODUCT SPECIFICATION

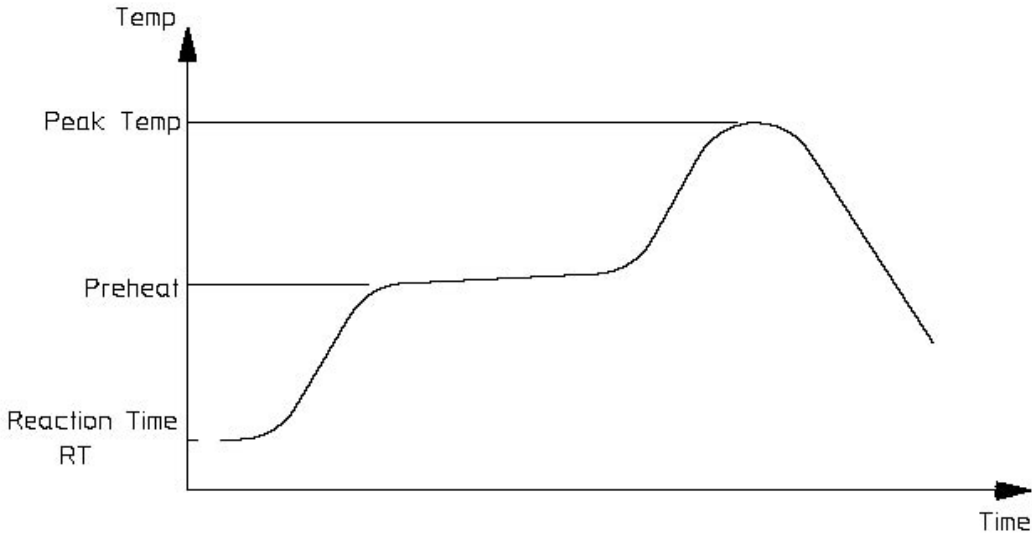
5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
12.	Thermal Shock	Mated connectors expose for 5 cycles : Temperature °C Duration - 55 +0/ -5 30 mins +105 +3/ -0 30 mins	Contact Resistance : 25 mohms Maximum Appearance : No Damage
13.	Thermal Aging	Mated connectors expose at 105 ± 2°C for 96 hours.	Contact Resistance : 25 mohms Maximum Appearance : No Damage
14.	Cyclic Humidity	Mated connectors expose to temperature cycle between 25 ± 2°C to 65 ± 2°C at 90% to 98 % RH for 240 hours. MIL-STD-1344A, Method 1002 (except step 7).	Contact Resistance : 25 mohms Maximum Appearance : No Damage
15.	Salt Spray	Mated connectors expose to 5% concentration sodium chloride solution at 35 ± 2°C for 96 hours. MIL-STD-202F, Method 101.	Contact Resistance : 25 mohms Maximum
16	Temperature Rise	Apply 1.0 Amps DC to mated connectors and measure contact temperature rise for 96 hours.	+30 °C Maximum temperature rise over ambient
17	Solderability	Solder tail to be dipped in flux and examined. MIL-STD-202F, Method 208.	Dipped plated portion should have 95% continuous new solder coating coverage.
18	Resistance to Soldering Heat	Solder tail to be dipped in flux and examined. MIL-STD-210A, Method 210.	Appearance : No Damage

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PRODUCT SPECIFICATION

19	Resistance to IR reflow heat	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 +0/-5°C Time within 5°C of peak 10 – 14 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

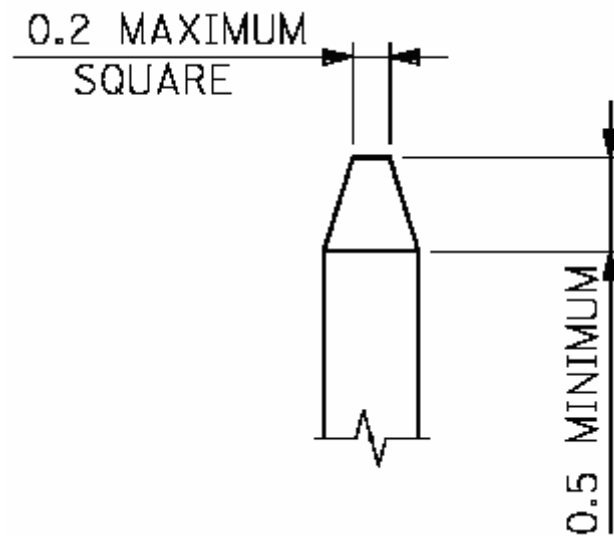
Product shall be packaged and protected against damage during handling, transit and storage.

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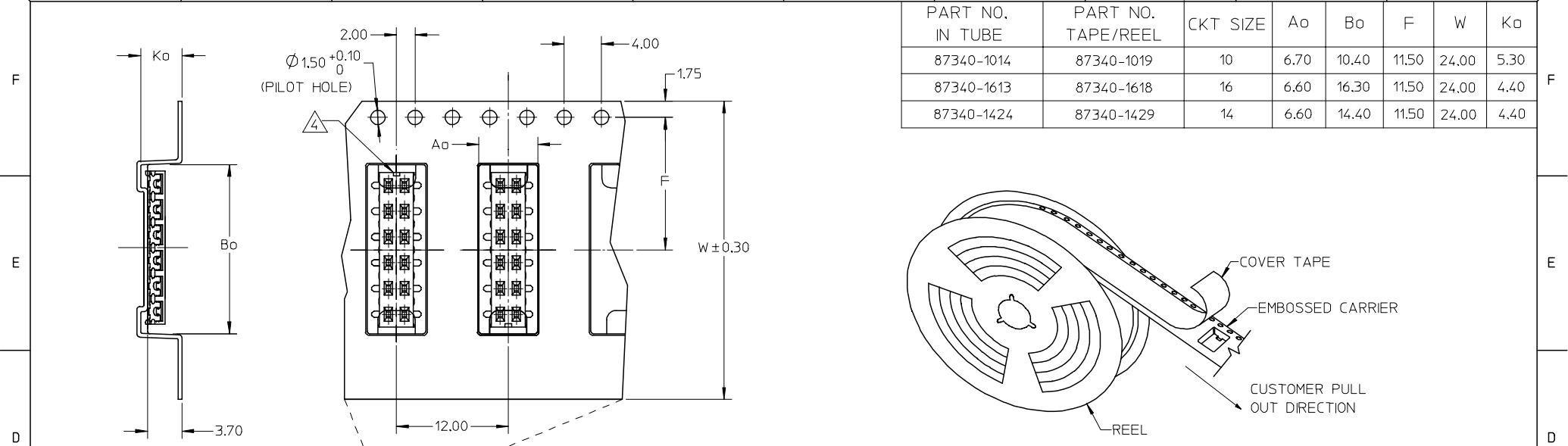
PRODUCT SPECIFICATION

7.0 PIN TIP CONFIGURATION



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	10	9	8	7	6	5	4	3	2	1	
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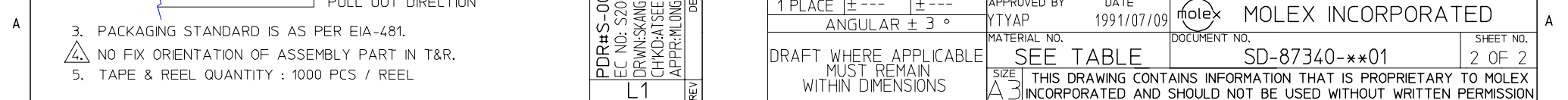


2. PEELING OFF FORCE OF THE TOP TAPE: 20-80gf. (PEELING DIRECTION AS SHOWN IN FOLLOWING FIGURE)	00-11/10/0411/10/0511/10/08	QUALITY SYMBOLS	GENERAL TOLERANCES (UNLESS SPECIFIED)	DIMENSION STYLE MM ONLY	SCALE NTS	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION
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	PEEL OFF DIRECTION	8-00 62	2007 2007 2007	ION	=0		mm	INCH	DRAWN BY	DATE	TITLE
					4 PLACES	± ---	± ---	JKACHL I	1991/07/02	MGRID	

- 15° MAX.

PULL-OUT DIRECTION



- | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| fb_frame_A3_P_AM_T
Rev. E 2006/04/15 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|

REV	DESCRIPTION	QUALITY SYMBOLS
		 = 0  = 0

DIMENSION STYLE	
MM ONLY	
DRAWN BY	DATE
JKACHL I	1991/07/01
CHECKED BY	DATE
JNG	1991/07/01
APPROVED BY	DATE
YTYAP	1991/07/01
MATERIAL NO.	
SEE TABLE	
SIZE	THIS DRAWING CONTAINS
A3	INCORPORATED AND

A