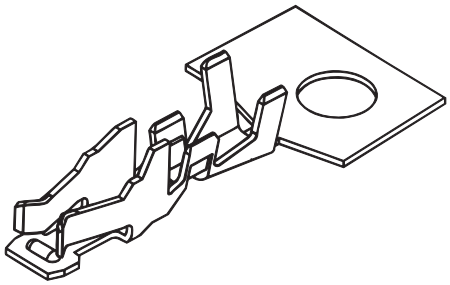
Jameco Part Number 1971950

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

50394



Features and Benefits
- Early entry terminal design for superior contact

Reference Information
Product Specification: PS-51110-001
Packaging: Reel
UL File No.: E29179
CSA File No.: LR19980
Mates With: 0.50mm square pins
Use With: 51110
Designed In: Millimeters

Electrical
Voltage: 125V
Current:

AWG	24	26	28	30
	2.0A	1.5A	1.0A	0.5A

Contact Resistance: 40 milliohms max.
Dielectric Withstanding Voltage: 500V
Insulation Resistance: 1000 Megohms min.

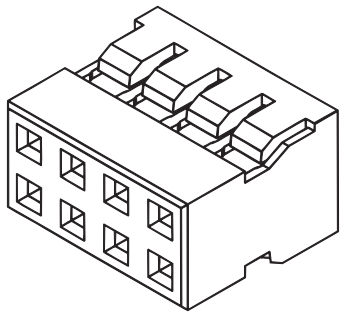
Mechanical
Contact Insertion Force: 9.8N max.
Mating Force: 1.96N per circuit max.
Unmating Force: 0.392N per circuit min.

Physical
Contact: Phosphor Bronze
Plating: See Table
Operating Temperature: -40 to +105˚C
Wire Range: 26 to 30 AWG
Insulation Range: 1.40mm dia. max.

Order No.	AWG	Plating	Lead-free
50394-8051	26 - 30	15µ" min. selective Gold	Yes
50394-8052		30µ" min. selective Gold	

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

51110



Features and Benefits
- Sizes 4 to 32 circuits
- Front latches for added retention forces after mating
- Options include center polarization key and front latches version (14 to 32 circuits only), center polarization key only (8 to 12 circuits)

Reference Information
Product Specification: PS-51110
Packaging: Bag
UL File No.: E29179
CSA File No.: LR19980
Mates With: 87831, 87832, 87833, 87858, 87859, 87760
Use With: 50394
Designed In: Millimeters

Physical
Housing: Black glass-filled polyester, UL 94V-0
Operating Temperature: -40 to +105˚C

Circuits	Order No.	
	Plain	With Polarization Keys
4	51110-0450	51110-0460
6	51110-0650	51110-0660
8	51110-0850	51110-0860
10	51110-1050	51110-1060
12	51110-1250	51110-1260
14	51110-1450	51110-1451
16	51110-1650	51110-1651
18	51110-1850	51110-1851

Circuits	Order No.	
	Plain	With Polarization Keys
20	51110-2050	51110-2051
22	51110-2250	51110-2251
24	51110-2450	51110-2451
26	51110-2650	51110-2651
28	51110-2850	51110-2851
30	51110-3050	51110-3051
32	51110-3250	51110-3251

1.0 SCOPE

This Product Specification covers the the performance requirement for the Milli-Grid 2 mm Grid Wire to Board Connector terminated with 24 to 30 AWG wire using Crimp technology.

2.0 PRODUCT DESCRIPTION

The Milli-Grid 2mm Grid Wire to Board Connector comprises of the Crimp Receptacle Housing (51110) and the Crimp Terminal (50394).

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See Sales Drawing and the necessary referenced Documents and Specifications.

4.0 RATINGS AND APPLICABLE WIRE

<table>
<tr><td>Item</td><td colspan="2">Standard</td><td></td></tr>
<tr><td>Rated Voltage (max.)</td><td colspan="2">125V</td><td>AC (rms) / DC</td></tr>
<tr><td>Rated Current (max.)
and applicable wires.</td><td>AWG #24
AWG #26
AWG #28
AWG #30</td><td>2.0A
1.5A
1.0A
0.5A</td><td>Crimp Terminal
(AWG#24-AWG#30)
Insulation O.D. 1.4mm
dia. max.</td></tr>
<tr><td>Operating Temperature

Non-Operating Temperature</td><td colspan="3">-40 deg.c to +105 deg.c

-55 deg.c to +105 deg.c</td></tr>
</table>

5.0 PERFORMANCE

5.1 Electrical Performance

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.1.1	Contact Resistance	Mate connectors, measure by dry circuit, 20 mV MAX., 10 mA (based upon JIS C5402 5.4).	**40** mohm MAX.
5.1.2	Insulation Resistance	Mate connectors, apply 500V (rms) AC for 1 minute between adjacent terminal or ground (based upon JIS C5402 5.1/ MIL-STD-202 Method 301).	**1000** Mohms Min.
5.1.3	Dielectric Strength	Mate connectors, apply 500V (rms) AC for 1 minute between adjacent terminal or ground (based upon JIS C5402 5.1/ MIL-STD-202 Method 301).	No breakdown
5.1.4	Contact Resistance on Crimped Portion	Crimp the applicable wire onto the terminal, measure by dry circuit, 20mV MAX., 10mA.	**5** mohm MAX.

5.2 Mechanical Performance

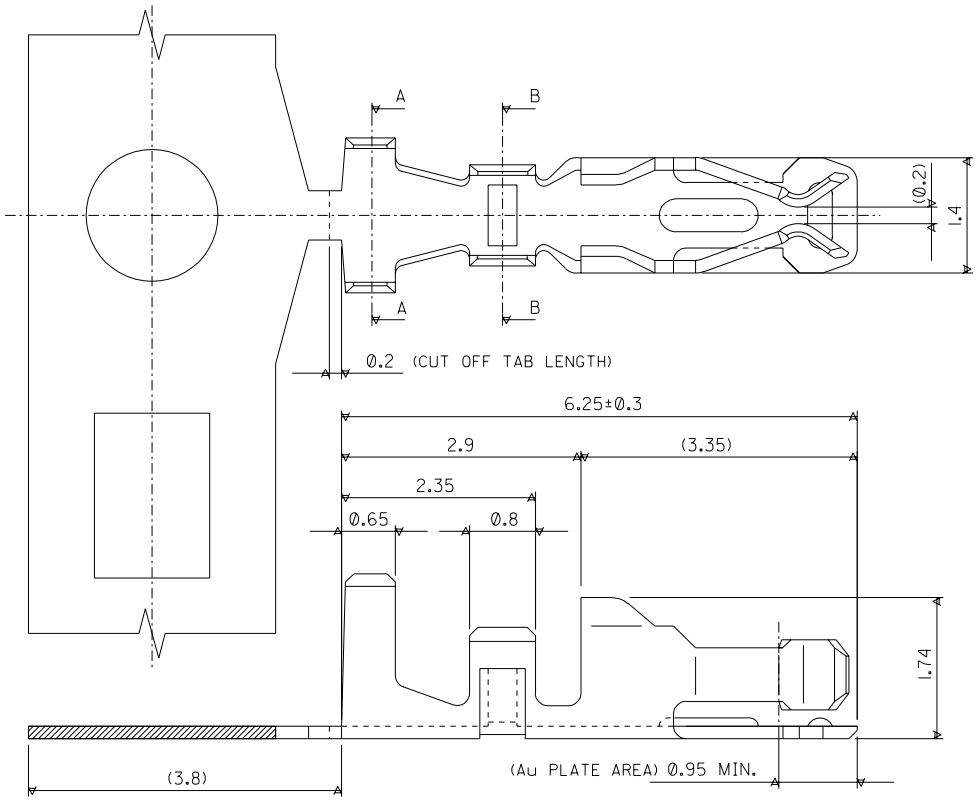
ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.2.1	Mating and Unmating Force	Mating and Unmating connectors at a rate of 25+/-3 mm/min.	Mating force: **1.96** N / CKT MAX. Unmating force: **0.392** N / CKT Min.
5.2.2	Crimp Terminal Insertion Force	Insertion the crimped terminal into the housing.	**9.8** N MAX.
5.2.3	Crimp Terminal Housing Retention Force	Apply axial pull out force at a rate of 25 mm/min. on the terminal assembled in the housing.	**9.8** N MIN.
5.2.4	Crimping Pull Out Force	Fix the crimped terminal, apply axial pull out force on the wire at the speed rate of 25 mm/min. (based on JIS C5402 6.8)	AWG#24=**29.4**MIN. AWG#26=**19.6**MIN. AWG#28=**9.8**MIN. AWG#30=**4.9**MIN. (all in Newtons)

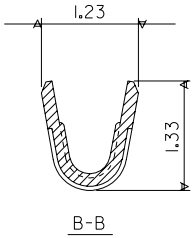
5.3 Environment Performance

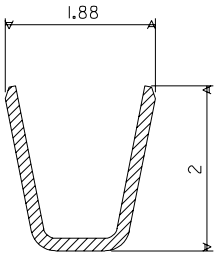
ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.3.1	Repeated Mate / Unmate	When Mate / unmate up to 50 cycles repeatedly at a rate of 10 cycles / min.	Contact Resistance: **60** mohms Max.
5.3.2	Temperature Rise	Mate connectors and measure the temperature rise of contact when the maximum DC rated current is passed.	Temperature: **30** deg. c Max.
5.3.3	Vibration	Mate connectors and subject to the following vibration conditions, for a period of two hours in each 3 mutually perpendicular axis, passing DC 1mA current during the test. Amplitude: 1.5 mm p-p Frequency: 10-55-10 Hz. Shall be transversed on 1 minute (based on MIL-STD-202 Method 201A)	Appearance: No damage Contact resistance: **60** mohm Max. Discontinuity: **1.0** μs MAX.
5.3.4	Shock	Mate connectors and subject to the following shock conditions, 3 shocks shall be applied along 3 mutually perpendicular axis, passing DC 1mA current during the test. (Total of 18 shocks) Test pulse : Half Sine Peak value: 490 m/s sq. (50G) Duration : 11 ms (based on JIS C0041 MIL-STD-202 Method 213B Cond. A)	Appearance: No damage. Contact Resistance: **60** mohm Max. Discontinuity: **1.0** μs Max.
5.3.5	Heat Resistance	Mate connector and expose to 85+/-2 deg. C for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed (based on JIS C0021 / MIL-STD-202 Method 108A Cond. A).	Appearance: No damage. Contact Resistance: **60** mohm Max.
5.3.6	Cold Resistance	Mate connector and expose to –55+/-3 deg. C for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed (based on JIS C0020).	Appearance: No damage. Contact Resistance: **60** mohm Max.

5.3 Environment Performance (continued)

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.3.7	Humidity	Mate connector and expose to 60+/-2 deg. C, relative humidity 90-95% for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed (based on JIS C0022 / MIL-STD-202 Method 103B Cond. B).	Appearance: No damage. Contact Resistance: **60** mohm Max. Dielectric Strength: Must meet **4.1.3** Insulation Resistance: **100** Mohm Min.
5.3.8	Temperature Cycling	Mate connectors and subject to the following conditions for 5 cycles. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. 1 cycle: a) –55+/-3 deg C 30 min. b) +105+/-2 deg C 30 min. (Transit time shall be within 5 minutes; JIS C0025)	Appearance: No damage. Contact Resistance: **60** mohm Max.
5.3.9	Salt Spray	Mate connectors and expose to the following salt mist conditions. Upon completion of the exposure period, salt deposits shall be removed by a gentle wash or dipped in the running water, after which the specified measurements shall be performed. NaCL solution concentration: 5+/-1 % Spray time: 48+/-4 hours Ambient Temperature: 35+/-2 deg. C (based on JIS C5028 / MIL-STD-202 Method 101D Condition B).	Appearance: No damage. Contact Resistance: **60** mohm Max.
5.3.10	S02 Gas	Mate connectors and expose to 50+/-5 ppm S02 gas, ambient temperature 40+/-2 deg. C for 24 hours.	Appearance: No damage. Contact Resistance: **60** mohm Max.







NOTES.

1. APPLICABLE HOUSING : 51110-***1
: 51110-**5*

GOLD FLASH 0.05-0.125 uM	50394-8400	50394-8054
~~0.38 Pd/Ni w/ GOLD FLASH~~	~~50394-8300~~	~~50394-8053~~
0.76	50394-8200	50394-8052
0.38	50394-8100	50394-8051
Au. PLATE THICK. (um MIN.)	FORM:LOOSE	FORM:CHAIN
	ENG.No.	

LTR	REVISION RECORD	ECN	DR / CHK	DATE
B	VOID PART NO. PER ECN S2004-0719	---	ANG / LING	040223
A2	ADD GOLD FLASH AS PER ECN#S2003-0030	---	NASH / LING	02/07/12
A1	ADD 0.38 Pd/Ni WITH GOLD FLASH AS PER PDR#98-01-0267 (ECN#S1998-0364)	---	SEE / LING	980312
A	REL AS PER ECN#	S40519	SQ / EDP	940420

REVISE ONLY ON CAD SYSTEM

MATERIAL : PHOSPHOR BRONZE (THK=0.152)

FINISH : SEE NOTES

DRAWN BY S.Q. 940420 | CHK'D BY EDPOH 940427 | APPR'D BY ROY 940428 | SCALE 15:1

molex MOLEX SINGAPORE PTE LTD

SHEET 1 OF 1

GENERAL TOLERANCES ± 0.20/.008 | REV B

DWG. NO.: SD-50394-8***

TITLE : 2.0mm GRID W TO B CONN. CRIMP TERMINAL

DWG. NO. SD-50394-8051

CAD FILE S50394T1.DGN

DO NOT SCALE DRAWING