Jameco Part Number 801220

1.0 SCOPE

This specification covers the performance requirement for the Milli-Grid 2mm Grid Wire to Board Connector terminated with 26 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

Item	Standard		
Rated Voltage (max)	125V		AC (rms) / DC
Rated Current (max.) and applicable wires.	AWG #26 AWG #28 AWG #30	1.5A 1.0A 0.5A	Crimp Terminal (AWG#26-AWG#30) Insulation O.D. 1.4mm dia. max.
Ambient Temp. Range	-40 deg.c -- +105 deg.c *1		

*1: Including terminal temperature rise.

5.0 PERFORMANCE

5.1 Electrical Performance

	ITEM	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	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#26=19.6MIN. AWG#28=9.8 MIN. AWG#30=4.9 MIN. (all in Newtons)

5.3 Environment Performance

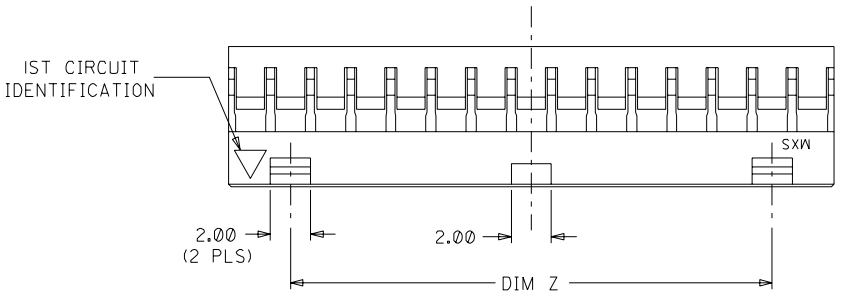
	ITEM	TEST CONDITION	REQUIREMENT
5.3.1	Repeated Mate / Unmate	When Mate / unmate up to 50 cycles repeatedly at a rate of 10 cycles / min.	Contact Resistance: 60 mohms Max.
5.3.2	Temperature Rise	Mate connectors and measure the temperature rise of contact when the maximum AC rated current is passed (UL 498)	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 of 3 mutually perpendicular axis, passing DC 1mA during the test. Amplitude: 1.5 mm p-p Frequency: 10-55-10 Hz. Shall be traversed in 1 minute (based on MIL-STD-202 Method 201A)	Appearance: No damage. Contact Resistance: 60 mohm Max. Discontinuity: 0.1 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: 0.1 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 (Continue...)

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 .

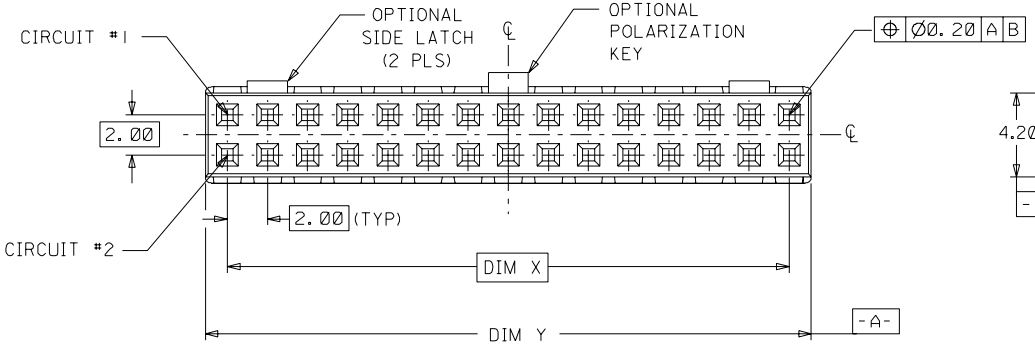
PART NO.	CKT SIZE	DIM X	DIM Y	DIM Z
51110-045*	4	2.00	4.20	NA
51110-065*	6	4.00	6.20	NA
51110-085*	8	6.00	8.20	NA
51110-105*	10	8.00	10.20	NA
51110-125*	12	10.00	12.20	NA
51110-145*	14	12.00	14.20	8.00
51110-165*	16	14.00	16.20	10.00
51110-185*	18	16.00	18.20	12.00
51110-205*	20	18.00	20.20	14.00
51110-225*	22	20.00	22.20	16.00
51110-245*	24	22.00	24.20	18.00
51110-265*	26	24.00	26.20	20.00
51110-285*	28	26.00	28.20	22.00
51110-305*	30	28.00	30.20	24.00
51110-325*	32	30.00	32.20	26.00

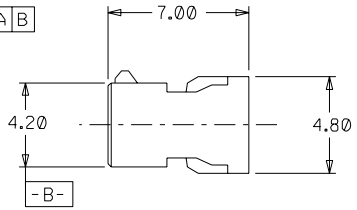
PLS REFER TO PART 51110-**60 FOR CENTER LATCH OPTION.

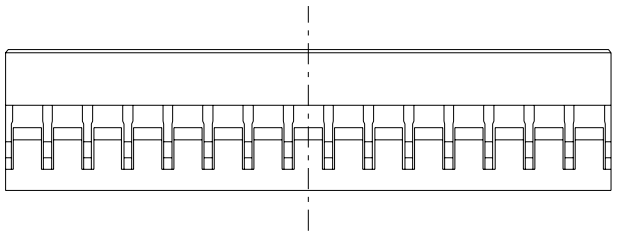


NOTES:

1. MATERIAL: GLASS-FILLED POLYESTER UL RATED 94V-0
   COLOR: BLACK.
2. PART TO BE USED WITH CRIMP TERMINAL PART NUMBER 50394-8***.
3. APPLICABLE WIRE RANGE : AWG #24 - #30.
4. WIRE INSULATION RANGE : DIAMETER 1.40MM MAXIMUM.
5. 30 CKT SHOWN FOR ILLUSTRATION ONLY.







PART NUMBER LEGEND:

51110- * * 5 *

CIRCUIT SIZE

0 - WITHOUT CENTER POLARIZATION KEY AND SIDE LATCH.

1 - WITH CENTER POLARIZATION KEY AND SIDE LATCH.
(14 TO 32 CIRCUITS ONLY)
WITH CENTER POLAR. KEY ONLY.
(8 TO 12 CIRCUITS ONLY)

EC NO. S2001-0365
DRWN: G.R. XIE 010613
CH'K:
APPR:
DESCRIPTION
B3
REV

QUALITY SYMBOLS
MAJOR ▼ = 0
CRITICAL ▽ = 0

GENERAL TOLERANCES: (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	±0.--	±.
3 PLACES	±0.--	±.
2 PLACES	±0.20	±.
1 PLACE	±0.--	±.
ANGULAR: ± 3 °		

SCALE NTS
DESIGN UNITS [X] mm [ ] INCH
THIRD ANGLE PROJECTION
DIMENSIONS: [ ] mm/INCH [ ] INCH/mm [X] mm ONLY
SHT REV
REVISE ON CAD ONLY

DRAWN BY & DATE S.K.TOH 931026
CHECKED BY & DATE EDPOH 931026
APPROVED BY & DATE JM CHAN 931026
CAD FILENAME

TITLE: 2 MM GRID, WIRE-TO-BOARD CONNECTOR, CRIMP RECEPTACLE HOUSING

MOLEX INCORPORATED

MATERIAL NO. SEE NOTES
DRAWING NO. SD-51110-**5*
SHEET NO. 1 OF 1

SIZE A3

WBORD_A.BOR REV A
97/05/14 LEVEL 4