molex **PRODUCT SPECIFICATION**

LANGUAGE
JAPANESE
ENGLISH

0.5MM PITCH FFC/FPC, SMT, VERTICAL, NON-ZIF CONNECTOR

1.0 SCOPE

This Product Specification covers the performance requirement of 0.5mm pitch FFC/FPC, SMT, Vertical, Non-ZIF connector.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBERS

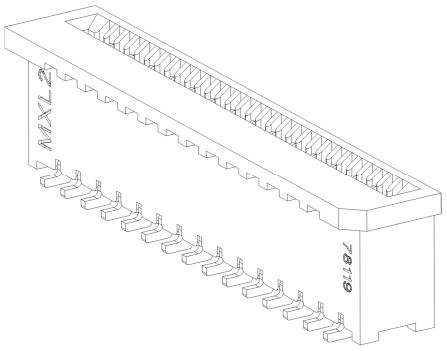
Product Name	Part Number
0.5mm Pitch FFC/FPC, SMT, Vertical, Non-ZIF Connector	78119 series
0.5mm Pitch FFC/FPC, SMT, Vertical, Non-ZIF Connector (Reverse)	78127 series

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

Please see the appropriate Sales Drawings for information on dimensions, materials, platings and markings.

2.3 SAFETY AGENCY APPROVALS

UL FILE : UL1977 E29179
CSA : CSA Std C22.2 NO.182.3-M1987 LR19980



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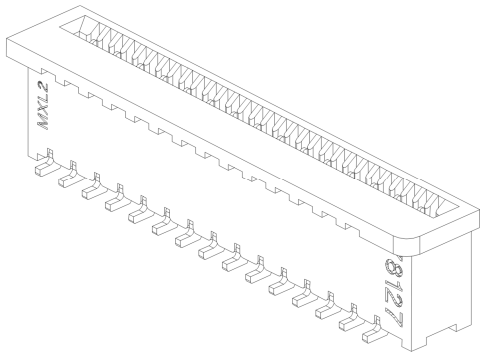

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TENTATIVE RELEASE:
THIS SPECIFICATION IS BASED ON DESIGN OBJECTIVES AND IS STRICTLY TENTATIVE. PRELIMINARY TEST DATA MAY EXIST, BUT THIS SPECIFICATION IS SUBJECTED TO CHANGE BASED ON THE RESULTS OF ADDITIONAL TESTING AND EVALUATION.

REV.	1	2	3	A			
SHEET	1-7	1-7	1-7	1-7			

REVISE ON PC ONLY

REV.	DESCRIPTION
A	変 更 REVISED J2014-0323 '13/08/22 K.NAGUMO

TITLE:
0.5MM PITCH FFC/FPC SMT, VERTICAL, NON-ZIF CONNECTOR

DESIGN CONTROL	STATUS	WRITTEN BY:	CHECKED BY:	APPROVED BY:	DATE: YR/MO/DAY
J		LNG	BOKOK	PTLIM	2006/05/09

DOCUMENT NUMBER	FILE NAME	SHEET
PS-78119-001	PS78119001.docx	1 OF 7

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See the Sales Drawing and other sections of this Specification for the necessary referenced Documents and Specifications.

4.0 RATINGS

4.1 VOLTAGE

50 Volts Max. AC

4.2 CURRENT

0.5 Amps Max.

4.3 TEMPERATURE

Operating: - 40°C to + 85°C
Non Operating: - 40°C to + 85°C
Note: Including terminal temperature rise.

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.1.1	**Contact Resistance**	Mate applicable FPC, measure by dry circuit, 20mV, 10mA. (JIS C5402 5.4)	**30** milliohms MAXIMUM
5.1.2	**Insulation Resistance**	Mate applicable FPC, apply 500V DC for 1 minute between adjacent terminal or ground. (JIS C5402 5.2/MIL-STD-202 Method 302)	**50** Megaohms MINIMUM
5.1.3	**Dielectric Withstanding Voltage**	Mate applicable FPC, apply 500V AC for 1minute between adjacent terminals or ground. (JIS C5402 5.2/MIL-STD-202 Method 301)	**No breakdown**
5.1.4	**Temperature Rise**	Connector shall be mated with applicable FPC and measure the temperature rise of contact, when the maximum AC rated current is applied (UL498).	Temperature rise shall not exceed **30**°C over ambient

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT	
5.2.1	**Terminal Retention Force**	Apply axial pull out force at the speed rate of 25.4±3 mm/minute on the terminal assembled in the housing	**3.0** N (**0.3**kgf) MINIMUM	
5.2.2	**Repeated Insertion / Extraction**	Insert and extract FPC/FFC up to 20 cycles at the speed rate of less than 10 cycle/minute.	**40** milliohms MAXIMUM	
5.2.3	**Vibration**	Amplitude: 1.5mm P-P Sweep time: 10~55~10 Hz in 1 minute Duration: 2 hours in each X.Y.Z. axes (JIS C60068-2-6/MIL-STD-202 Method 201)	Appearance	**No Damage**
			Contact Resistance	**40** milliohms MAXIMUM
			Discontinuity	**1** microsecond MAXIMUM
5.2.4	**Mechanical Shock**	490m/s^2 {50G}, 3 strokes in each X.Y.Z. axes. (JIS C60068-2-27/MIL-STD-202 Method 213)	Appearance	**No Damage**
			Contact Resistance	**40** milliohms MAXIMUM
			Discontinuity	**1** microsecond MAXIMUM

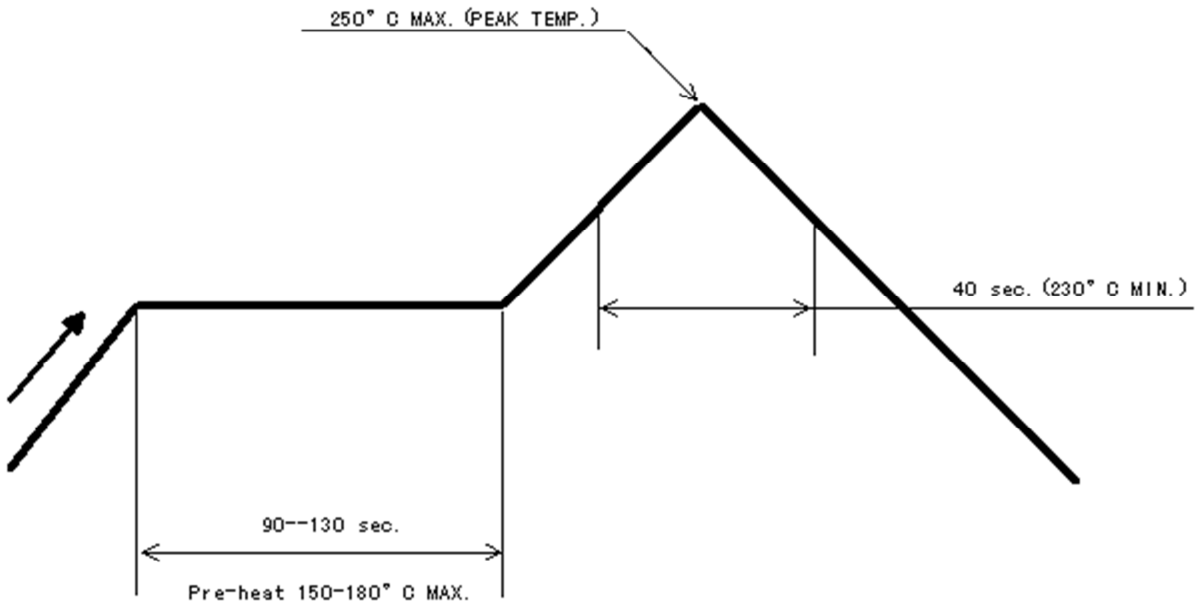
5.3 ENVIRONMENTAL REQUIREMENTS.

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT	
5.3.1	**Heat Resistance**	Connector shall be mated with applicable FPC, and exposed to the conditions of 85**± 2°**C for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at room ambient conditions for 1~2 hours, after which the specified measurement shall be performed. (JIS C60068-2-2/MIL-STD-202 Method 108)	Appearance	**No Damage**
			Contact Resistance	**40** milliohms MAXIMUM
5.3.2	**Cold Resistance**	Connector shall be mated with applicable FPC, and exposed to the conditions of -40**±3°**C for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at room ambient conditions for 1~2 hours, after which the specified measurement shall be performed. (JIS C60068-2-1)	Appearance	**No Damage**
			Contact Resistance	**40** milliohms MAXIMUM
5.3.3	**Humidity**	Connector shall be mated with applicable FPC, and exposed to the conditions of 60**± 2°**C, relative humidity 90~95% for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at room ambient conditions for 1~2 hours, after which the specified measurement shall be performed. (JIS C60068-2-78/MIL-STD-202 Method 103)	Appearance	**No Damage**
			Contact Resistance	**40** milliohms MAXIMUM
			Dielectric Strength	Must meet **5.1.3**
			Insulation Resistance	**20** Megaohms MINIMUM

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT	
5.3.4	**Temperature Cycling**	Connector shall be mated with applicable FPC, and subjected to the following conditions for 5 cycles Upon completion of the exposure period, the test specimens shall be conditioned at room ambient conditions for 1~2 hours, after which the specified measurement shall be performed.(Transfer time shall be within 5 minutes) 1 cycles:a) -55°C for 30 minutes b) +85°C for 30 minutes (JIS C60068-2-14)	Appearance	**No Damage**
			Contact Resistance	**40** milliohms MAXIMUM
5.3.5	**Sulfurous acid Gas**	Connector shall be mated with applicable FPC, and exposed to the conditions of 50±5 ppm SO_2 gas, ambient temperature 40±2°C, for 24 hours.	Appearance	**No Damage**
			Contact Resistance	**40** milliohms MAXIMUM
5.3.6	**Ammonia Gas**	Connector shall be mated with applicable FPC, and exposed to the conditions of 10cm above from the surface of 28% ammonia solution, for 40 minutes.	Appearance	**No Damage**
5.3.7	**Salt Spray**	Connector shall be mated with applicable FPC, and exposed to the following salt mist conditions. At the completion of the exposure period, Salt deposits shall be removed by a gentle wash or dip in running water, after which the specified measurement shall be performed. NaCl solution Concentration : 5±1% Spray time: 48 hours Ambient temperature: 35±2°C (JIS C60068-2-11/MIL-STD-202 Method 101)	Appearance	**No Damage**
			Contact Resistance	**40** milliohms MAXIMUM
5.3.8	**Solderability**	Solder time : 3±0.5 sec. Solder temperature : 245±5°C. 0.3mm from terminal tip 0.3mm from fitting nail tip.	Solder wetting	**90%** of immersed area must show no voids, pin holes.

5.3.9	**Resistance to Soldering Heat**	For IR reflow, refer to paragraph 6. Solder time: 2~5 sec. Solder temperature: 370~400°C 0.2mm from terminal tip. 0.2mm from fitting nail tip.	Appearance	**No Damage**

6.0 INFRARED REFLOW CONDITION



TEMPERATURE CONDITION GRAPH
(TEMPERATURE ON BOARD PATTEN SIDE)

7.0 PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage.

REV.	REV. RECORD	DATE	ECN NO.	WRITTEN BY :	CHECKED BY :
1	RELEASED	2006/05/09	S2006-1126	LNG	BOKOK
2	REVISED	2006/10/04	S2007-0326	LNG	BOKOK
3	REVISED	2007/09/04	S2008-0114	ATSEE	SKANG
A	REVISED	2013/08/22	J2014-0323	K.NAGUMO	K.TAKAHASHI