SPECIFICATION FOR
CONNECTOR USED FOR FPC/FFC WITH 1mm CONTACTS SPACING
HLW_ _R/S-2_ _LF

1. SCOPE
This specification covers the requirements for the connector [HLW_ _R/S-2_ _LF] which the edges of 1mm spacing FPC (Flexible Printed circuit) or FFC (Flexible Flat Cable) are inserted into directly and connected to.

2. APPLICABLE STANDARDS
JIS C 5402 Methods for Test of Connectors for Electronic Equipment.
UL – 94 TESTS FOR FLAMMABILITY OF PLASTIC MATERIALS FOR PARTS IN DEVICES AND APPLIANCES.

3. CATALOG NO.

HLW 10 R – 2_ _ LF

Series
Number of contacts
Terminal Type
R : Right Angle Type
S : Straight Type
Variation
Lead Free

4. SHAPE, DIMMENSIONS
See attached drawings.

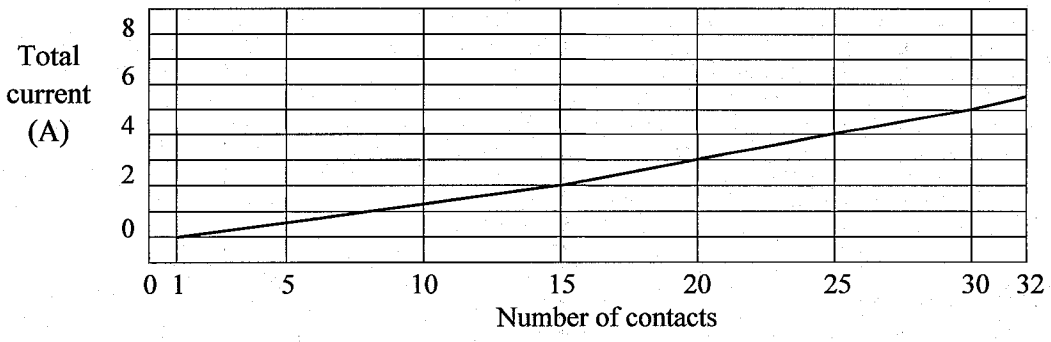
5. MATERIALS
See attached drawings.

6. ACCOMMODATED CONDUCTOR (FPC, FFC)
See attached drawings.

7. ACCOMMODATED P.C.BOARD (The PCB on which the connector is mounted.)
See attached drawings.

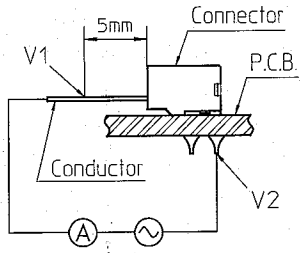
8. RATING
8-1. Voltage : A.C. 100V D.C.100V
8-2. Current : A.C. 1A D.C. 1A (Refer to the following note.)
8-3. Operating Temperature : -55°C ~ +85°C (Including terminal temperature rise)

Note
Allowable maximum current for one contact is 1A. Total allowable current for a whole connector is the value which is shown in the following figure.



9. PERFORMANCE CHARACTERISTICS

9-1. Electrical Performance

No.	Test Item	Test Method	Requirements
9-1-1	Contact resistance	1)Measure contact resistance between V_1-V_2 by voltage drop method using the following circuit by mating accommodated conductor specified in clause 6 after soldering connector on PCB.  2)Open circuit voltage: Less than A.C. 20mV 3)Test current: Less than A.C. 20mA	1)Initial contact resistance : Less than 30mΩ 2)Contact resistance after the test: See the column of Requirements for each test item.
9-1-2	Insulation resistance	1)Measure insulation resistance between adjacent contacts in a connector individual. 2)Test voltage: D.C. 500V 3)Read value one minute after applying test voltage.	1)More than 500MΩ
9-1-3	Dielectric withstanding voltage	1)For one minute, apply A.C.500V between adjacent contacts in a connector individual. 2)Set current : A.C. 1mA	1)Free from any short circuit and insulation breakdown.

9-2. Mechanical Performance

No.	Test Item	Test Method	Requirements
9-2-1	Vibration (Sinusoidal)	JIS C 0040 1)Frequency range: 10 ~ 500Hz 2)Amplitude: 0.75mm or Acceleration: 100m/s^2 3)Sweep rate: 1 octave/minute 4)Kind of test: Sweep endurance test 5)Test time: 10 cycles	1)During the test, no circuit opening for more than 1μs. 2)Free from any defect such as break, deformation, loosing and falling off etc. on each portion of the connector.
9-2-2	Durability (Insertion and extraction)	1)Measure contact resistance before and after the test by the method in clause 9-1-1 by using the accommodated conductor specified in clause 6. 2)Number of insertion and extraction : 30 times 3)Speed of insertion and extraction : Less than 10 times per minute.	1)Initial contact resistance : Less than 30mΩ 2)Contact resistance after the test: Less than 50mΩ 3)Free from any defect such as break, deformation etc. on the connector and the conductor.

9-3. Environmental Performance

<table>
<tr><th>No.</th><th>Test Item</th><th>Test Method</th><th>Requirements</th></tr>
<tr><td>9-3-1</td><td>Damp heat
(Steady State)</td><td>JIS C 0022
1)Measure contact resistance before and after the test by the method in clause 9-1-1 by using the accommodated conductor specified in clause 6.
2)Measure insulation resistance after the test by the method in clause 9-1-2.
3)Bath temperature: 40°C
4)Bath humidity
: 90~95% (relative humidity)
5)Period of exposure: 48 hours
6)Expose conductor and connector after mating them (without insertion and extraction) and dry them naturally after post treatment.</td><td>1)Initial contact resistance
: Less than 30mΩ
2)Contact resistance after the test: Less than 50mΩ
3)Insulation resistance after the test: More than 100MΩ</td></tr>
<tr><td>9-3-2</td><td>Salt spray</td><td>JIS C 0023
1)Measure contact resistance before and after the test according to the method in clause 9-1-1 by using accommodated conductor specified in clause 6.
2)Salt solution concentration: 5%
3)Period of exposure: 48 hours
4)Expose conductor and connector in mated condition and dry them naturally after posttreatment.(24 hours)</td><td>1)Initial contact resistance
: Less than 30mΩ
2)Contact resistance after the test: Less than 50mΩ</td></tr>
<tr><td>9-3-3</td><td>Change of temperature</td><td>JIS C 0025
1)Measure contact resistance before and after the test according to the method in clause 9-1-1 by using accommodated conductor in clause 6.
2)One cycle of temperature is as follow and test 5 cycles.
<table>
<tr><th>Step</th><th>Temp.(°C)</th><th>Time(min.)</th></tr>
<tr><td>1</td><td>-55±3</td><td>30</td></tr>
<tr><td>2</td><td>25±2</td><td>2~3</td></tr>
<tr><td>3</td><td>85±2</td><td>30</td></tr>
<tr><td>4</td><td>25±2</td><td>2~3</td></tr>
</table>
3)Expose conductor and connector by mating them and leave them under normal temperature.</td><td>1)Initial contact resistance
: Less than 30mΩ
2)Contact resistance after the test: Less than 50mΩ
3)Free from any defect such as crack, warping and deformation etc. on each portion of the connector.</td></tr>
</table>

9-4. Other Performance

<table>
<tr><th>No.</th><th>Test Item</th><th>Test Method</th><th>Requirements</th></tr>
<tr><td>9-4-1</td><td>Soldering
(Solderability)</td><td>JIS C 0050
Test Method: Ta Method 1
1)The connector is soldered by the following condition after mounted on P.C.Board and dipped in inactive rosin family flux.
<table><tr><th>Soldering bath temp.(°C)</th><th>Dipping time. (s)</th></tr><tr><td>235±5</td><td>5±0.5</td></tr></table></td><td>1)Actual soldered area must be more than 90% of the dipped area intended to be soldered.</td></tr>
<tr><td>9-4-2</td><td>Soldering
(Resistance to soldering heat)</td><td>JIS C 0050
Test Method: Tb
1)The connector is soldered by the following condition after mounted on P.C.Board.
<table><tr><th>Soldering bath temp.(°C)</th><th>Dipping time. (s)</th></tr><tr><td>350±10</td><td>3.5±0.5</td></tr><tr><td>260± 5</td><td>10.0±1</td></tr></table></td><td>1)Free from any damage concerning feature and contacting performance after.</td></tr>
<tr><td>9-4-3</td><td>Conductor retention force (Reference)</td><td>1)Measure total extraction force (initial value) by using accommodated conductor specified in clause 6.</td><td>1)More than 0.49N/contact (More than 50gf/contact)</td></tr>
</table>

10. INDICATION AND PACKAGING

10-1. Indication

1) Catalog number and lot number are not indicated on the connector.
2) Catalog number and quantity shall be indicated on the surface of the package box.

10-2. Packaging

1) The connector individuals are put into the package box with specified quantity in accordance with the method specified in the separate packaging specification.

11. REMARKS

11-1. Please refer to the "Handling procedures and remarks" before use.

11-2. CIC (Conductor such as silver paste, carbon etc.) can not be used for this connector as the accommodated conductor. Please consult us separately.

11-3. Retention force for accommodated conductor specified in clause 9-4-3 differs due to it's kind, structure and surface treatment of conductor. Therefore, the value of retention force specified in the clause for performance is reference value.

AMEYA360
Components Supply Platform

Authorized Distribution Brand :

Website :

Welcome to visit www.ameya360.com

Contact Us :

- ### Address :

  401 Building No.5, JiuGe Business Center, Lane 2301, Yishan Rd
  Minhang District, Shanghai , China

- ### Sales :

  Direct +86 (21) 6401-6692

  Email amall@ameya360.com

  QQ 800077892

  Skype ameyasales1 ameyasales2

- ### Customer Service :

  Email service@ameya360.com

- ### Partnership :

  Tel +86 (21) 64016692-8333

  Email mkt@ameya360.com