



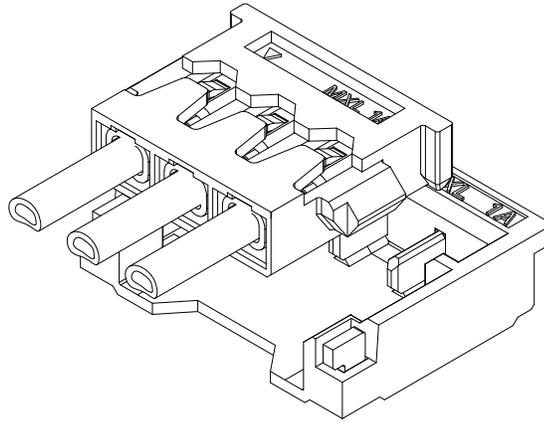
# PRODUCT SPECIFICATION

## 1.20MM PITCH, W-T-B, PLUG AND RECEPTACLE CONNECTOR

### 1.0 SCOPE

This Product Specification covers the performance requirements for 1.20mm Pitch, W-T-B connector.

### 2.0 PRODUCT DESCRIPTION:



### 2.1 PRODUCT NAME AND SERIES NUMBER (S)

Product Name: 1.20MM PITCH, W-T-B CONNECTOR  
Series Number: 78171 (PLUG) / 78172 (RECEPTACLE)

### 2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

Refer to the sales drawing for information on dimensions, material plating and marking.  
Wire size: 28 AWG Stranded (UL3302), 30 AWG Stranded (UL3302)

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DOCUMENT NUMBER: <b>PS-78171-010</b>	CREATED / REVISED BY: <b>CWLAM 2010/12/07</b>	CHECKED BY: <b>LS LEE 2010/12/07</b>	APPROVED BY: <b>NUKITA 2010/12/07</b>



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## 3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

The following documents are part of this specification to the extent specified 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.

## 4.0 RATINGS

### 4.1 VOLTAGE

50 Volts AC/DC (MAXIMUM)

### 4.2 CURRENT

1.5 Amps (MAXIMUM)

### 4.3 OPERATING TEMPERATURE

-25°C to + 85°C

## 5.0 PERFORMANCE

### 5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.1.1	Contact Resistance (Low Level)	Measure contact resistance by <b>10mA DC</b> . Max open circuit voltage <b>20 mV</b> (EIA-364-23)	<b>20</b> milli-ohms Max
5.1.2	Insulation Resistance	Measurement taken between adjacent contacts where <b>500V DC</b> is applied (EIA-364-21)	<b>100</b> Mega-ohms Min
5.1.3	Dielectric Withstanding Voltage	Receptacle subjected to <b>500V AC</b> for <b>1</b> minute between adjacent contacts (EIA-364-20)	No breakdown

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5.1.4	Temperature rise (via Current Cycling)	Rated as per followed, after 2 hours (EIA-364-70)				30 deg C temp rise max	
			2 ckt	3 ckt	4 ckt		5 ckt
		AWG # 28	1.5A	1.5A	1.5A		1.5A
	AWG #30	1.0A	1.0A	1.0A	1.0A		

## 5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT																			
5.2.1	Mate/Unmate force	Mate and unmate plug and receptacle <b>vertically</b> at a rate of <b>25mm/minute</b> (EIA-364-13)	Unit : N  <table border="1"> <thead> <tr> <th rowspan="2">No. of ckt</th> <th rowspan="2">Mate (Max)</th> <th colspan="3">Unmate (Min)</th> </tr> <tr> <th>1x</th> <th>3x</th> <th>10x</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>18</td> <td rowspan="4">4.0</td> <td rowspan="4">1.5</td> <td rowspan="4">1.2</td> </tr> <tr> <td>3</td> <td>21</td> </tr> <tr> <td>4</td> <td>24</td> </tr> <tr> <td>5</td> <td>27</td> </tr> </tbody> </table>	No. of ckt	Mate (Max)	Unmate (Min)			1x	3x	10x	2	18	4.0	1.5	1.2	3	21	4	24	5	27
No. of ckt	Mate (Max)	Unmate (Min)																				
		1x	3x	10x																		
2	18	4.0	1.5	1.2																		
3	21																					
4	24																					
5	27																					
5.2.2	Durability	Mate connectors up to <b>10</b> cycles vertically at a maximum rate of 10 cycles per minute (EIA-364-09)	<b>20</b> milli-ohms Max (Change from initial)																			
5.2.3	Vibration	Mate connectors and vibrate in 3 mutually perpendicular planes. Amplitude : <b>1.52mm</b> Frequency : <b>10-55-10Hz/minute</b> Duration : <b>2 hrs in each X, Y, Z axis</b> (EIA-364-28)	1) <b>20</b> milli-ohms Max (Change from initial) 2) Discontinuity < <b>1</b> microsecond																			
5.2.4	Wire Crimping Strength	Pull wire axially from terminal at a rate of 12.7mm per minute	Refer to Crimp Specification CS-78172-013																			

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<b>5.2.5</b>	<b>Terminal Pull Strength</b>	Pull terminal axially from housing at a rate of 12.7mm per minute	4N Minimum
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## 5.2 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT						
<b>5.3.1</b>	<b>Thermal Shock</b>	Mate connectors; expose to 10 cycles of : <table border="1"> <tr> <td><u>Temperature (DegC)</u></td> <td><u>Duration (Min)</u></td> </tr> <tr> <td><b>-25</b></td> <td><b>30</b></td> </tr> <tr> <td><b>+85</b></td> <td><b>30</b></td> </tr> </table> (EIA-364-32)	<u>Temperature (DegC)</u>	<u>Duration (Min)</u>	<b>-25</b>	<b>30</b>	<b>+85</b>	<b>30</b>	1) Contact Resistance: <b>20 mΩ</b> Max (Change from initial)  2) Insulation Resistance: <b>100 MΩ</b> Min  3) Dielectric Strength: No Breakdown  4) Appearance: No damage
<u>Temperature (DegC)</u>	<u>Duration (Min)</u>								
<b>-25</b>	<b>30</b>								
<b>+85</b>	<b>30</b>								
<b>5.3.2</b>	<b>Thermal Aging</b>	Mate connectors; expose to : <b>96 hours at 85 +/- 2 Deg C</b> (EIA-364-32)	1) Contact Resistance: <b>20 mΩ</b> Max (Change from initial)  2) Appearance: No damage						
<b>5.3.3</b>	<b>Humidity (Steady State)</b>	Temperature : <b>40 +/- 2 Deg C</b> Relative Humidity : <b>90 to 95 %</b> Duration : <b>96 hours</b> (EIA-364-31)	1) Contact Resistance: <b>20 mΩ</b> Max (Change from initial)  2) Insulation Resistance: <b>100 MΩ</b> Min  3) Dielectric Strength: No Breakdown  4) Appearance: No damage						
<b>5.3.4</b>	<b>Solderability</b>	Parts shall be tested as per EIA-638	Solder coverage : 95% Min (Per SMES-152)						

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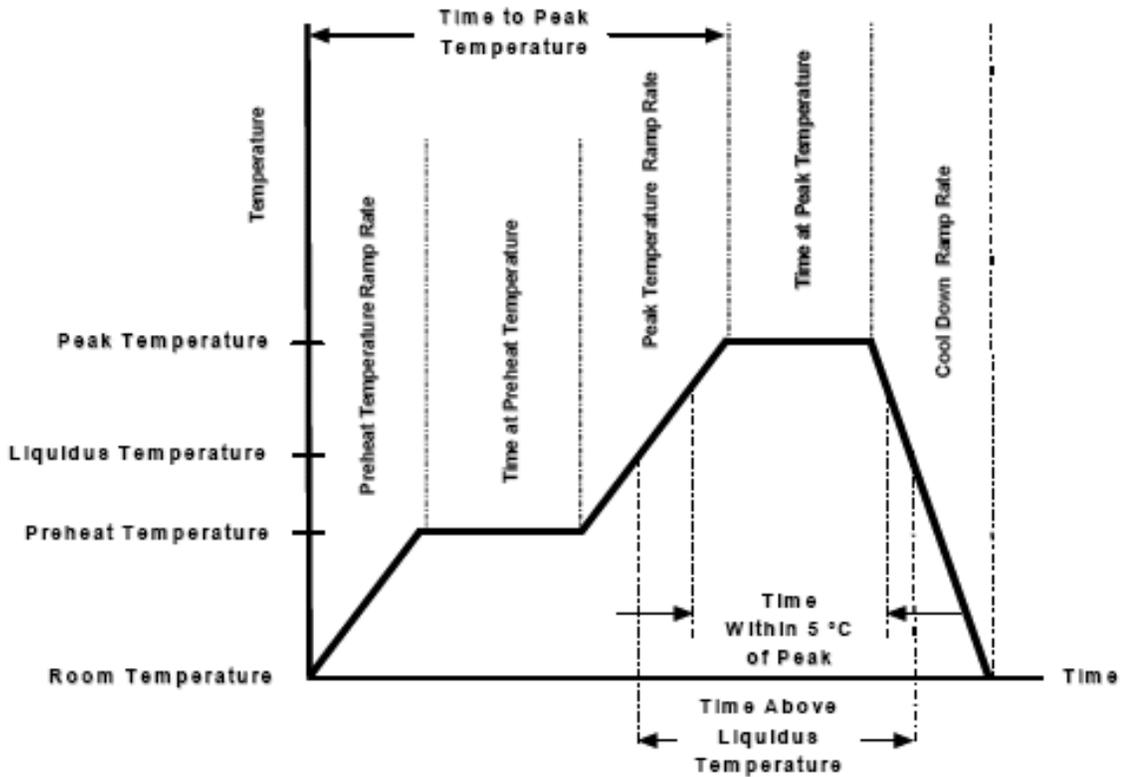
5.3.5	<b>Resistance to Soldering heat</b> (Base on 2 times reflow process)	Average Ramp Rate            3°C/sec max. Preheat Temp. (Min.)        150°C Preheat Temp. (Max.)        200°C Preheat Time                    60 – 180sec Ramp to Peak                    3°C/sec max. Time over liquidus            60 – 150 sec Peak Temperature            260 +0/-5°C Time within 5°C of peak    10 – 15 sec. Ramp – Cool Down            6°C/sec max. Time 25°C to Peak            8 mins max	Visual : No Damage to insulator material
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## 6.0 PACKAGING

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

## 7.0 OTHER INFORMATION

### 7.1 SURFACE MOUNT REFLOW TEMPERATURE PROFILE



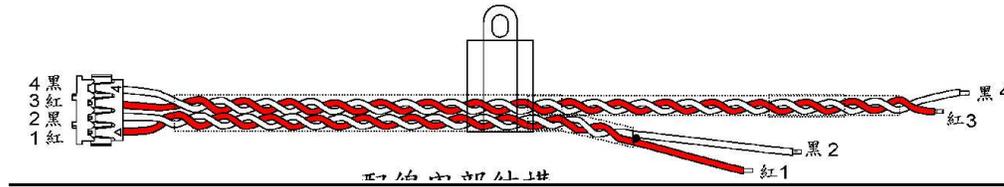
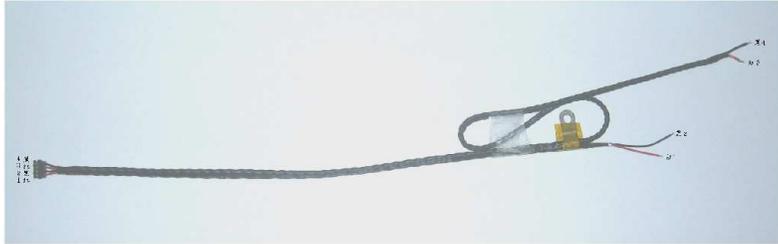
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## 7.2 SET-UP FOR VIBRATION TEST

Wires are to be fixed firmly onto the testing jig.



## 8.0 NOTES

- ELV AND RoHS COMPLIANT.
- Don't mating & Unmating in Electricity state. It leads to outbreak such as the spark, poor performance.
- In the condition that a product gets wet with water, Please waterproof it. It may cause bad insulation by the water wet between circuits.
- Keep specifications electric current: Don't drain current from over spec.
- When it is used at the point that a connector moves, please fix an electric wire and a print board from suppress the resonance.
- Please do not add external force to an article in this product and a processing process. It can cause transformation; the damage can cause poor performance of the connector.

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