

## EDGELOCK CONNECTOR SYSTEM

### 1.0 SCOPE

This Product Specification covers the 2.0mm EdgeLock Connector series terminated with 22 to 24 AWG wire tin plating option.

### 2.0 PRODUCT DESCRIPTION

The connector is made in 2, 4, 6 & 8 single row circuit sizes which can accommodate 1.20mm and 1.60mm PCB Thickness. The housings accept wire ranges 22-24AWG UL 1061 style and 24 AWG UL1007/1569 style.

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

SL NO	DESCRIPTION	SERIES
1	EdgeLock Crimp Terminal	200449
2	EdgeLock WTE housing	200890

#### 2.2 DIMENSIONS, MATERIALS, PLATINGS, MARKINGS & SPECIFICATION.

Refer See PSD-2008900206, PSD-2004490001

Packing specification: 2004490001PK, 208900001PK

Application Tooling Specification for 24 AWG UL1007: ATS-639039900

Application Tooling Specification for 22-24 AWG UL1061 ATS-639039800

Application Tooling Specification for Extractor Tool- ATS-638135700

#### 2.3 SAFETY AGENCY APPROVALS

UL APPORVAL IN PROGRESS.

### 3.0 RATINGS

#### 3.1 VOLTAGE

125 Volts

#### 3.2 CURRENT AND APPLICABLE WIRES

Current is dependent on connector size, ambient temperature, PCB Track width and related factors. Actual current rating dependent and should be evaluated for each use.

AWG	Amps	Outside Insulation Diameter
22-24 AWG	3.0	1.10mm to 1.40mm (nominal)

#### 4.1 TEMPERATURE

Operating: - 40°C to + 105°C

REVISION: <b>A1</b>	ECR/ECN INFORMATION: EC No: 123177 DATE: 2017/10/12	TITLE: <b>PRODUCT SPECIFICATION FOR EDGELOCK CONNECTOR SYSTEM</b>	SHEET No. <b>1 of 8</b>
DOCUMENT NUMBER: <b>2008900001PS</b>	CREATED / REVISED BY: <b>BR02/SCHONG03</b>	CHECKED BY: <b>SHCHU</b>	APPROVED BY: <b>YSOOKIM02</b>

## 4.0 PERFORMANCE

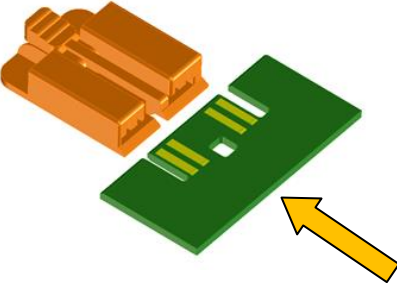
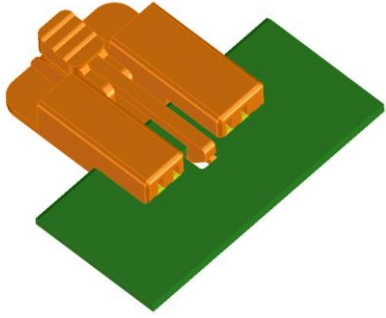
### 5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	<b>Contact Resistance (Low Level)</b>	Mate the connectors with PCB: apply a maximum voltage of <b>20 mV</b> and a current of <b>100 mA</b> . EIA-364-23C	<b>15 milliohms</b> MAXIMUM [initial]
2	<b>Insulation Resistance</b>	Mated the connectors with PCB: apply a voltage of <b>500 VDC</b> between adjacent terminals and between terminals to ground. EIA-364-21D	<b>1000 Megohms</b> MINIMUM
3	<b>Dielectric Withstanding Voltage</b>	Mate the connector with PCB: apply a voltage of <b>{two times the rated voltage plus 1000 volts}</b> VAC for <b>1 minute</b> between adjacent terminals and between terminals to ground. EIA-364-20D	No breakdown; current leakage < <b>5 mA</b>
4	<b>Temperature Rise</b>	Mate connectors with PCB: measure the temperature rise at the rated current EIA-364-70 Method 2	Temperature rise: <b>+30°C MAXIMUM</b> Above ambient
5	<b>Temperature rise Versus current (18-day stability test)</b>	PCB Per EIA-364-55 Mate connectors: measure the temperature rise at the rated current after: 1) 96 hours (steady state) 2) 240 hours (45 minutes ON and 15 minutes OFF per hour) 3) 96 hours (steady state)	+30°C above ambient

Note: Current rating is greatly depends on the PCB parameters such as pad width, pad thickness and track length. Hence Molex recommends to test the product at system level to ensure the current rating.

REVISION: <b>A1</b>	ECR/ECN INFORMATION: EC No: 123177 DATE: 2017/10/12	TITLE: <b>PRODUCT SPECIFICATION FOR EDGELOCK CONNECTOR SYSTEM</b>	SHEET No. <b>2 of 8</b>
DOCUMENT NUMBER: <b>2008900001PS</b>	CREATED / REVISED BY: <b>BR02/SCHONG03</b>	CHECKED BY: <b>SHCHU</b>	APPROVED BY: <b>YSOOKIM02</b>

## 5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	<b>Terminal Insertion Force</b>	Insert the crimped terminal into the housing at a speed rate of <b>25 +/-6mm</b> per minute.	<b>9.80 N (Max)</b>
6	<b>Terminal Retention force</b>	Apply axial pull out force at a speed rate of <b>25 +/- 6mm</b> per minute on the terminal assembled in the housing.	<b>9.80 N (Min)</b>
7	<b>Connector Insertion/ Withdrawal Forces with PCB</b>	<p>Insert connector into the PCB at a rate of <b>25 ± 6 mm</b> per minute with latch deactivated condition.</p> 	<p><b>5.0N Max. /Circuit.</b> (Connector Insertion Force)</p> <p><b>2.0N Min. /Circuit</b> (Connector Withdrawal Force)</p>
8	<b>Housing Latch Retention Force</b>	<p>Pull the housing without disengaging the latch at a rate of <b>25 ± 6 mm</b> per minute.</p> 	<p><b>29.4 N</b> MINIMUM retention force</p>

REVISION:	ECR/ECN INFORMATION:	TITLE:		SHEET No.
<b>A1</b>	EC No: 123177 DATE: 2017/10/12	<b>PRODUCT SPECIFICATION FOR EDGELOCK CONNECTOR SYSTEM</b>		<b>3 of 8</b>
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:	
<b>2008900001PS</b>	<b>BR02/SCHONG03</b>	<b>SHCHU</b>	<b>YSOOKIM02</b>	

## 5.2 MECHANICAL REQUIREMENTS (Continued)

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
9	<b>Durability</b> EIA-364-1000 Test Group-7	Insert and withdraw connectors <b>30 times</b> at a maximum rate of 10 cycles per minute prior to environmental tests.	Contact Resistance <b>10 milliohms MAXIMUM</b> (change from initial)  Dielectric Withstanding Voltage: No breakdown; current leakage < <b>5 mA</b> & Visual: No Damage
10	<b>Vibration (Random)</b> EIA-364-1000 Test Group 3	Mate connectors and vibrate per EIA 364 28F, test condition VII. Test condition letter D. (Acceleration 3.1 g).	Contact Resistance <b>10 milliohms MAXIMUM</b> (change from initial) & Discontinuity < <b>1</b> microsecond
11	<b>Shock (Mechanical)</b> EIA-364-1000 Test Group 3	Mate connectors and shock at 50 g's with ½ sine wave (11 milliseconds) shocks in the ±X, ±Y, ±Z axes (18 shocks total). EIA-364-27C Test Condition A Table 1.	Contact Resistance <b>10 milliohms MAXIMUM</b> (change from initial) & Discontinuity < <b>1</b> microsecond
12	<b>Wire Pullout Force</b> (Axial)	Apply an axial pullout force on the wire at a rate of <b>25 ± 6 mm (1 ± ¼ inch)</b> . As per UL1977 Edition 2.	For 22 AWG and 24 AWG : <b>23.1 N Min</b>

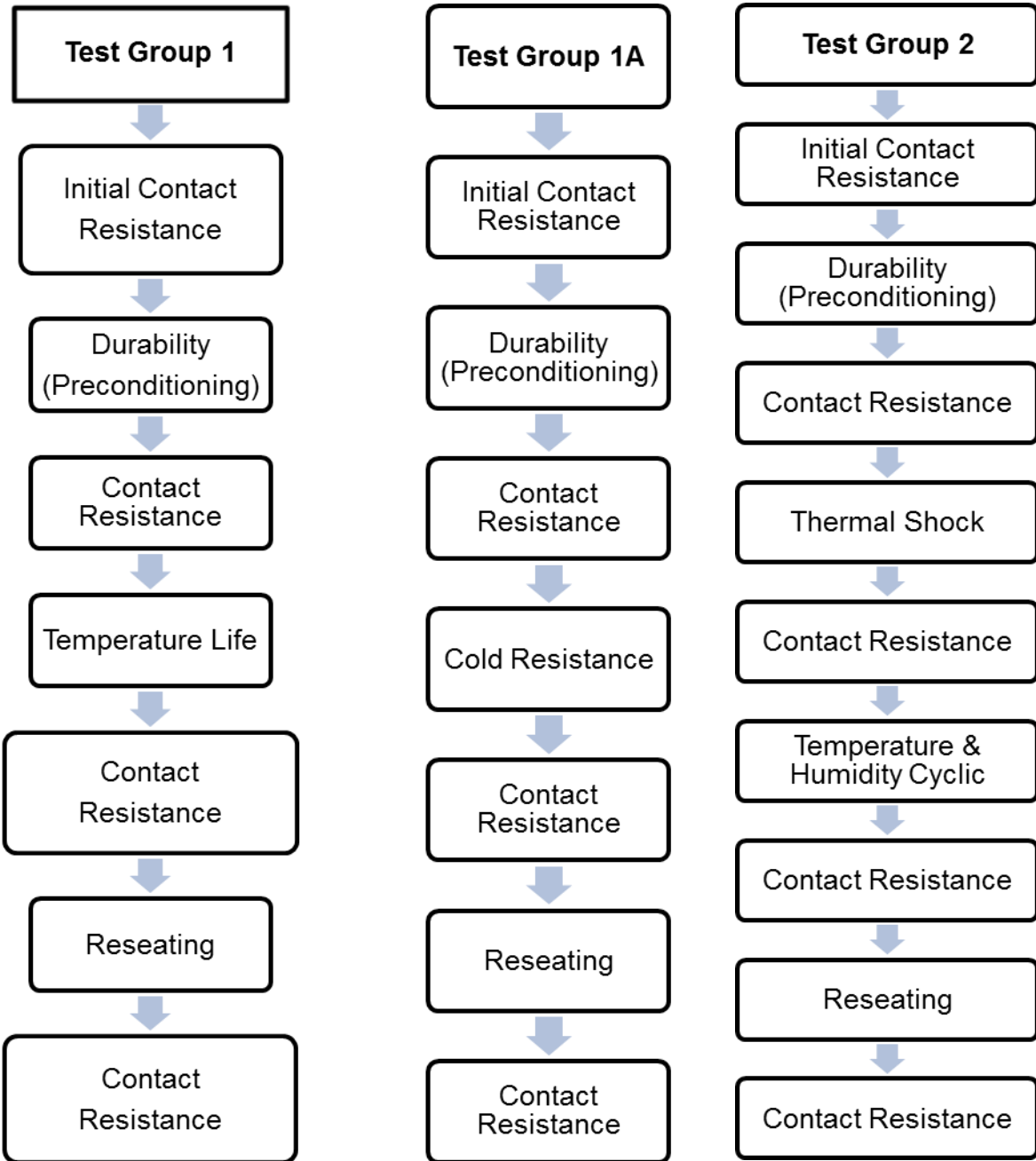
REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
<b>A1</b>	EC No: 123177 DATE: 2017/10/12	<b>PRODUCT SPECIFICATION FOR EDGELOCK CONNECTOR SYSTEM</b>	<b>4 of 8</b>
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
<b>2008900001PS</b>	<b>BR02/SCHONG03</b>	<b>SHCHU</b>	<b>YSOOKIM02</b>

### 5.3 ENVIRONMENTAL REQUIREMENTS

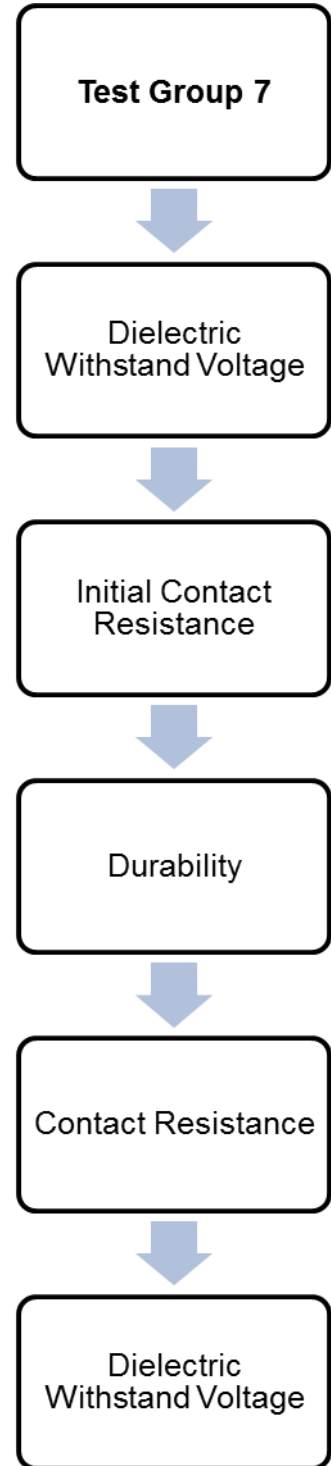
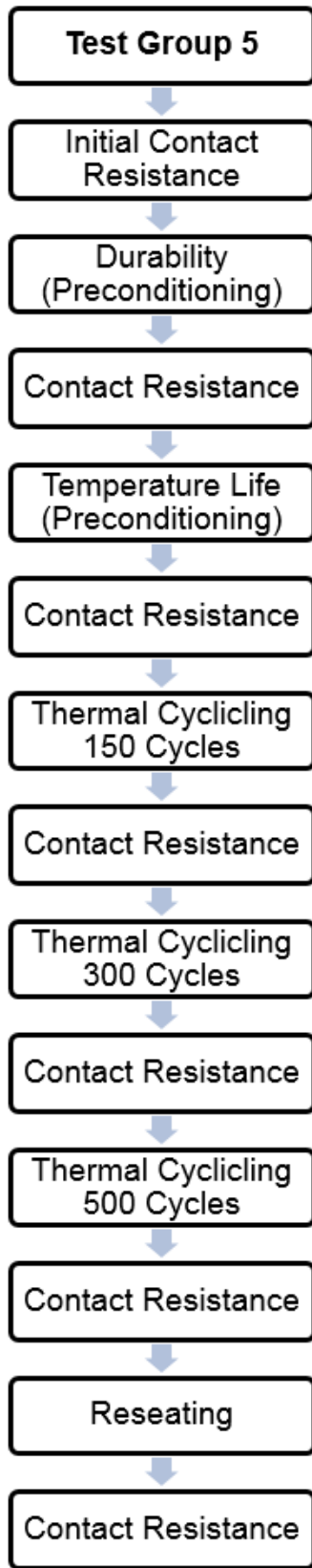
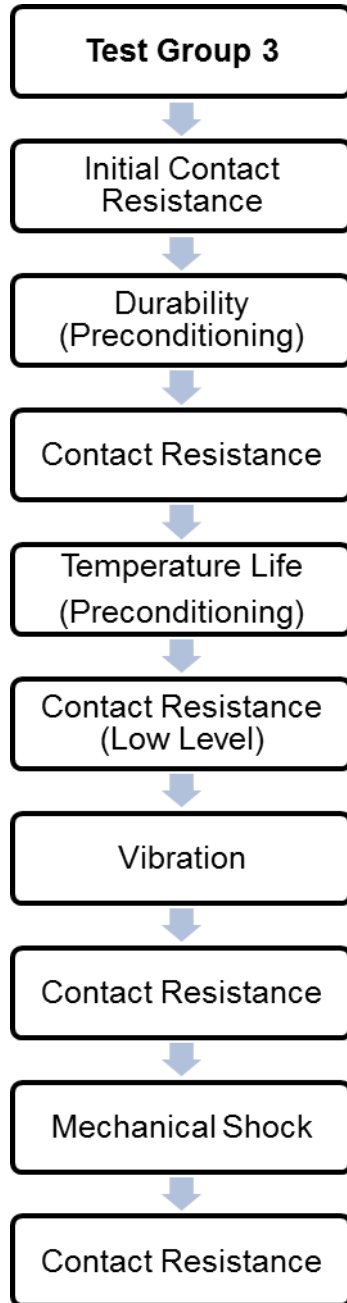
ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT										
13	<b>Shock (Thermal)</b> EIA-364-1000 Test Group 2	Mate connectors; expose to 5 cycles of:  <table border="0"> <tr> <td><u>Temperature °C</u></td> <td><u>Duration (Minutes)</u></td> </tr> <tr> <td>-55 +0/-3</td> <td>30</td> </tr> <tr> <td>+25 ±10°</td> <td>5 MAXIMUM</td> </tr> <tr> <td>+105 +3/-0</td> <td>30</td> </tr> <tr> <td>+25 ±10°</td> <td>5 MAXIMUM</td> </tr> </table> As per EIA-364-32G Test condition II, Method A.	<u>Temperature °C</u>	<u>Duration (Minutes)</u>	-55 +0/-3	30	+25 ±10°	5 MAXIMUM	+105 +3/-0	30	+25 ±10°	5 MAXIMUM	Contact Resistance <b>10 milliohms MAXIMUM</b> (change from initial) & Visual: No Damage
<u>Temperature °C</u>	<u>Duration (Minutes)</u>												
-55 +0/-3	30												
+25 ±10°	5 MAXIMUM												
+105 +3/-0	30												
+25 ±10°	5 MAXIMUM												
14	<b>Temperature Life</b> EIA-364-1000 Test Group 1	Mate connectors; expose to: <b>505 hours at 105 °±2 °C</b>	Contact Resistance <b>10 milliohms MAXIMUM</b> (change from initial]) & Visual: No Damage										
15	<b>Cold Resistance</b> EIA-364-1000 Test Group 1A	Mate connectors: Duration: <b>96 hours</b> ; Temperature: <b>-40 ± 3°C</b> .	Contact Resistance <b>10 milliohms MAXIMUM</b> & Visual: No Damage										
16	<b>Thermal Cycling</b> EIA-364-1000 Test Group 5	Cycle the connector between <b>15 °C ± 3 °C</b> and <b>85 °C ± 3 °C</b> . Humidity is not controlled.	Contact Resistance <b>10 milliohms MAXIMUM</b> (change from initial]) & Visual: No Damage										
17	<b>Temperature and Humidity Cyclic</b> EIA-364-1000 Test Group 2	Mate connectors: cycle per EIA-364-31: 24 cycles at temperature <b>25 ± 3°C</b> at <b>80 ± 5%</b> relative humidity and <b>65 ± 3°C</b> at <b>50 ± 5%</b> relative humidity; dwell time of 1.0 hour; ramp time of 0.5 hours.	Contact Resistance <b>10 milliohms MAXIMUM</b> (change from initial) Visual: No Damage										

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<b>A1</b>	EC No: 123177 DATE: 2017/10/12	<b>PRODUCT SPECIFICATION FOR                      EDGELOCK CONNECTOR SYSTEM</b>	<b>5 of 8</b>
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
<b>2008900001PS</b>	<b>BR02/SCHONG03</b>	<b>SHCHU</b>	<b>YSOOKIM02</b>

**6.0 TEST SEQUENCES**



REVISION: <b>A1</b>	ECR/ECN INFORMATION: EC No: 123177 DATE: 2017/10/12	TITLE: <b>PRODUCT SPECIFICATION FOR EDGELOCK CONNECTOR SYSTEM</b>	SHEET No. <b>6 of 8</b>
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DOCUMENT NUMBER: <b>2008900001PS</b>	CREATED / REVISED BY: <b>BR02/SCHONG03</b>	CHECKED BY: <b>SHCHU</b>	APPROVED BY: <b>YSOOKIM02</b>

Test Group →	A	B	C	D	E	F	G	H
Test or Examination ↓								
Examination of the connector(s)	1,5	1	1	1	1	1	1	1
Low Level Contact Resistance (LLCR)	2,4							
Insulation Resistance						2		
Dielectric Withstanding Voltage							2	
Current Rating (Temperature Rise)	3							
Connector Insertion/ Withdrawal Forces with PCB		2						
Terminal Insertion Force			2					
Terminal Retention force				2				
Housing Latch Retention Force					2			
Wire Pullout Force								2
<b>Note :</b> Durability -Pre-conditioning- 20 Cycles. Reseating- 3X <b>Temperature Life –Preconditioning- 105<sup>0</sup>C-268 Hours.</b>								

## 7.0 PACKAGING

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

## 8.0 OTHER INFORMATION:

Molex strongly recommends to plate mating areas with tin plating to meet the specified durability cycle and contact resistance.

Molex recommends that the entry zone and mating zone on the PCB should be smooth, flat and free from burr, sharp edges & the mating zone should be free from insulation coating and flux.

- i> To ensure safe entry.
- ii> To avoid terminal plating peel-off.
- iii> To ensure proper conductor contact

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