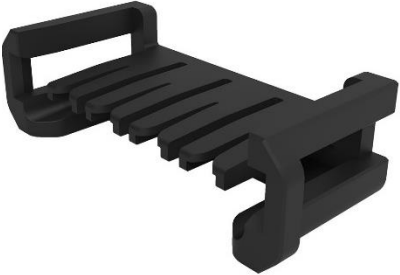
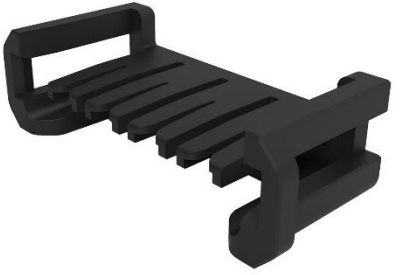


# DITTO™ WIRE TO WIRE INTERCONNECTS

| DITTO POSITIVE LOCK TPA V-0   | DITTO POSITIVE LOCK TPA V-2  |
|---|--|
|  |  |
| Series: <a href="#">150212</a>  | Series: <a href="#">150213</a>   |

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|   |  | APPROVED BY:<br><b>NCSR</b>  |                                    |

## 1.0 SCOPE

This Product Specification covers the TPA retainer parts of the 3.0 mm (.118 inch) centerline (pitch) Ditto Positive Lock connector series Terminated with 20 to 26 AWG wire using Crimp technology with Tin plating.

## 2.0 PRODUCT DESCRIPTION

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

| Description                     | Series Number           |
|---------------------------------|-------------------------|
| DITTO POSITIVE LOCK TPA 1X2 V-0 | <a href="#">150212*</a> |
| DITTO POSITIVE LOCK TPA 1X3 V-0 |                         |
| DITTO POSITIVE LOCK TPA 1X4 V-0 |                         |
| DITTO POSITIVE LOCK TPA 1X5 V-0 |                         |
| DITTO POSITIVE LOCK TPA 1X6 V-0 |                         |
| DITTO POSITIVE LOCK TPA 1X7 V-0 |                         |
| DITTO POSITIVE LOCK TPA 1X8 V-0 |                         |
| DITTO POSITIVE LOCK TPA 1X2 V-2 | <a href="#">150213*</a> |
| DITTO POSITIVE LOCK TPA 1X3 V-2 |                         |
| DITTO POSITIVE LOCK TPA 1X4 V-2 |                         |
| DITTO POSITIVE LOCK TPA 1X5 V-2 |                         |
| DITTO POSITIVE LOCK TPA 1X6 V-2 |                         |
| DITTO POSITIVE LOCK TPA 1X7 V-2 |                         |
| DITTO POSITIVE LOCK TPA 1X8 V-2 |                         |

\*Used with 150170 and 150201 series housings

### 2.2 DIMENSIONS, MATERIALS, PLATING AND MARKINGS

REFER SD-150212-0000, SD-150213-0000.

Material: RoHS compliant materials\*.

\*Refer to the "Product Environmental Compliance" section in Molex.com to know the individual PN RoHS compliance status

### 2.3 SAFETY AGENCY APPROVALS

UL FILE NUMBER: E29179

VDE FILE REFERENCE: 219127

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## 3.0 APPLICABLE DOCUMENTS AND SPECIFICATION

### 3.1 MOLEX DOCUMENTS

[Ditto Interconnects Test summary TS-150212-0000-001](#)  
[Ditto Application Specification 1502120000-AS-000](#)  
[Molex Moisture Technical Advisory AS-45499-001](#)  
[Molex Package Handling Specification 454990100-PK](#)

### 3.2 INDUSTRY DOCUMENTS

EIA-364-1000  
 UL-60950-1  
 IEC-6695-2-11  
 IEC-60335-1

## 4.0 ELECTRICAL PERFORMANCE RATINGS

### 4.1 TEMPERATURE

Operating: -40°C to + 105°C

## 5.0 QUALIFICATION

Laboratory conditions and sample selection are in accordance with EIA-364-1000

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## 6.0 PERFORMANCE

### 6.1 MECHANICAL PERFORMANCE

| ITEM | DESCRIPTION   | TEST CONDITION  | REQUIREMENT   |
|------|---|---|---|
| 1    | <b>TPA installation to housing</b>                        | Install the TPA to the Housings at a rate of <b>25 ± 6 mm (1 ± ¼ inch)</b> per minute.  | <b>4 N MAX. / circuit</b>   |
| 2    | <b>TPA Latch strength test</b>                            | Axial Pullout force at a rate of 13 mm/minute (0.5 inch per minute)   | <b>60 N MINIMUM</b>   |
| 3    | <b>Shock (Mechanical)</b><br>EIA-364-1000<br>Test Group 3 | Mate connectors and shock at <b>50 g's</b> with ½ sine wave (11 milliseconds) shocks in the ±X,±Y,±Z axes ( <b>18 shocks total</b> ).<br>EIA-364-27, Test condition A | <b>10 milliohms MAXIMUM</b> (change from initial) &<br>Discontinuity < <b>1 microsecond</b> |
| 4    | <b>Vibration (Random)</b><br>EIA-364-1000<br>Test Group 3 | Mate connectors and vibrate per EIA 364-28, test condition VII. Letter D. (Acceleration 3.1 g)  | <b>10 milliohms MAXIMUM</b> (change from initial) &<br>Discontinuity < <b>1 microsecond</b> |

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## 6.2 ENVIRONMENTAL PERFORMANCE

| ITEM           | DESCRIPTION   | TEST CONDITION   | REQUIREMENT  |                    |           |    |            |           |            |    |            |           |   |
|----------------|---|--|--|--------------------|-----------|----|------------|-----------|------------|----|------------|-----------|---|
| 5              | <b>Shock (Thermal)</b><br>Thermal Shock<br>EIA-364-32<br>Test Condition I<br>Test Group 2 | Mate connectors; expose to 5 cycles of:<br><table border="1"> <thead> <tr> <th>Temperature °C</th> <th>Duration (Minutes)</th> </tr> </thead> <tbody> <tr> <td>-40 +0/-3</td> <td>30</td> </tr> <tr> <td>+25 +10/-5</td> <td>5 MAXIMUM</td> </tr> <tr> <td>+105 +3/-0</td> <td>30</td> </tr> <tr> <td>+25 +10/-5</td> <td>5 MAXIMUM</td> </tr> </tbody> </table> | Temperature °C   | Duration (Minutes) | -40 +0/-3 | 30 | +25 +10/-5 | 5 MAXIMUM | +105 +3/-0 | 30 | +25 +10/-5 | 5 MAXIMUM | 10 milliohms MAXIMUM<br>(change from initial)<br>&<br>Visual: No Damage |
| Temperature °C | Duration (Minutes)  |  |  |                    |           |    |            |           |            |    |            |           |   |
| -40 +0/-3      | 30  |  |  |                    |           |    |            |           |            |    |            |           |   |
| +25 +10/-5     | 5 MAXIMUM   |  |  |                    |           |    |            |           |            |    |            |           |   |
| +105 +3/-0     | 30  |  |  |                    |           |    |            |           |            |    |            |           |   |
| +25 +10/-5     | 5 MAXIMUM   |  |  |                    |           |    |            |           |            |    |            |           |   |
| 6              | <b>Cyclic Temperature &amp; Humidity</b><br>EIA-364-1000<br>Test Group 2                  | Mate connectors: cycle per EIA-364-31:<br>24 cycles at temperature $25 \pm 3^{\circ}\text{C}$ at $80 \pm 5\%$ relative humidity and $65 \pm 3^{\circ}\text{C}$ at $50 \pm 5\%$ relative humidity; dwell time of 1.0 hour; ramp time of 0.5 hours.  | 10 milliohms MAXIMUM<br>(change from initial)<br>&<br>Dielectric Withstanding Voltage:<br>No Breakdown at 500 VAC<br>&<br>Insulation Resistance:<br>1000 Megohms MINIMUM<br>&<br>Visual: No Damage |                    |           |    |            |           |            |    |            |           |   |
| 7              | <b>Thermal Cycling</b><br>EIA-364-1000<br>Test Group 5                                    | Cycle the connector between $15^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and $85^{\circ}\text{C} \pm 3^{\circ}\text{C}$ . Humidity is not controlled.<br>EIA-364-1000, Table 5   | 10 milliohms MAXIMUM<br>(change from initial)<br>&<br>Visual: No Damage  |                    |           |    |            |           |            |    |            |           |   |

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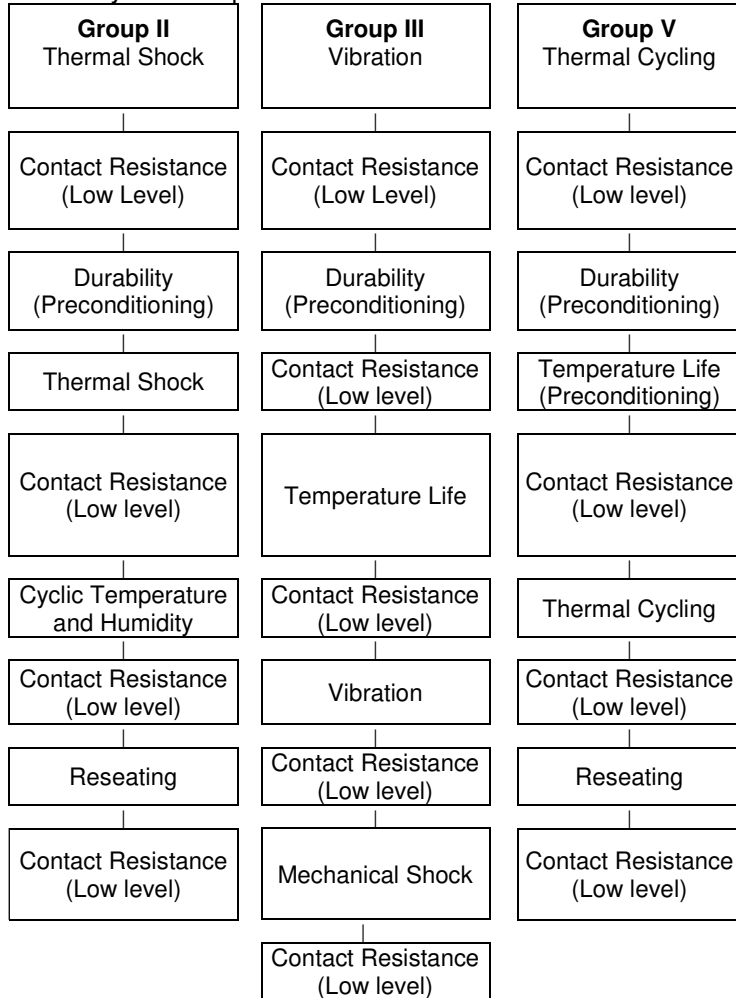


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**7.0 TEST SEQUENCE GROUPS**

Reliability Test Sequences Per EIA-364-1000



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**Individual Tests**

TPA installation to housing

TPA Latch Strength test

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**8.0 PACKAGING**

Parts shall be packaged to protect against damage during normal handling, transit and storage. Refer Molex.com specific part number webpage to get the exact packaging document for that item

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