
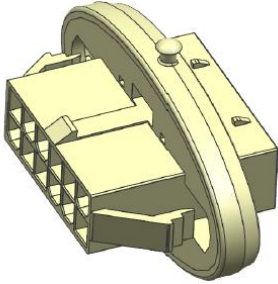
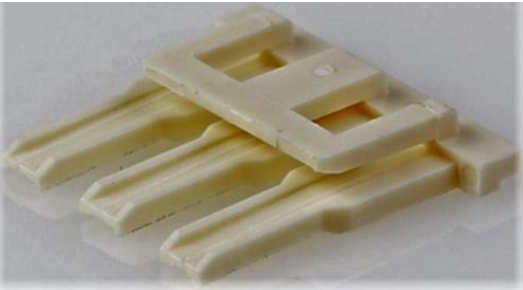



Mini-Fit Sigma Seal

WIRE TO WIRE CONNECTOR SYSTEM

<p style="text-align: center;">Male Terminal</p>  <p style="text-align: center;">Series: 172765</p>	<p style="text-align: center;">Plug Housing</p>  <p style="text-align: center;">Series: 207017</p>
<p style="text-align: center;">TPA</p>  <p style="text-align: center;">Series: 172709</p>	<p style="text-align: center;">Sigma Seal</p>  <p style="text-align: center;">Series: 207019</p>

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<p>DOCUMENT NUMBER: 2070170000-PS</p>		<p>DOC TYPE: PS</p>	<p>DOC PART: 000</p>	<p>CREATED / REVISED BY: DSTEIER</p>	<p>CHECKED BY: FSMITH</p>	<p>APPROVED BY: FSMITH</p>
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1.0 SCOPE

This specification covers the performance requirements for MINI-FIT SIGMA SEAL 4.20 mm (.165inch) centerline (pitch) wire to wire connector system terminated with 16 to 28 AWG standard, copper wire using crimp technology with Tin plating.

2.0 PRODUCT DESCRIPTION

2.1 DESCRIPTION, SERIES NUMBER, AND LINKS

DESCRIPTION	SERIES NUMBER
Male Terminal	172765
Plug Housing	207017
Plug Housing, Hybrid, 16 Circuit	214372
TPA	172709
Sigma Seal	207019

2.2 DIMENSIONS, MATERIALS, PLATINGS

See the appropriate sales drawings for the information on dimensions, materials, platings and markings.

2.3 ENVIRONMENTAL CONFORMANCE

To find product compliance information:

- [Go to molex.com](#)
- Enter the part number in the search field.
- At the bottom of the page go to "Environmental" to see compliance status.

2.4 SAFETY AGENCY LISTINGS

Under Testing

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3.0 APPLICABLE DOCUMENTS AND SPECIFICATION

3.1 MOLEX DOCUMENTS

Mini-Fit Sigma Seal Connector System Test summary 2070170000-TS
 Mini-Fit Sigma Seal Connector System Application summary 2070170000-AS
[Molex Quality Crimping Handbook Order No. 63800-0029](#)
[Molex Moisture Technical Advisory AS-45499-001](#)
[Molex Package Handling Specification 454990100-PK](#)
 ATS – Application Tooling Specification*

**Application Tooling Specification for terminals is not provided in this document. ATS for terminals can be available from respective terminal part number page in Molex.com*

Reference Product Specifications

[PS-172718-0000](#) Mini-Fit TPA2 Connector System
[2131370000-PS](#) Mini-Fit Sigma Connector System

3.2 INDUSTRY DOCUMENTS

EIA-364-1000

4.0 ELECTRICAL PERFORMANCE RATINGS

4.1 VOLTAGE

600 V AC (rms) / DC Max.

4.2 APPLICABLE WIRES

Refer PS-172718-0000

4.3 CURRENT DERATING

Refer PS-172718-0000

4.4 TEMPERATURE

Operating Temperature Range (includes T-Rise from applied current) : -40 °C to 105 °C
 Non-Operating Temperature Range : -40 °C to 105 °C

* Values include 30°C terminal temperature rise at maximum rated current

Field Temperature and Field Life: 60 °C for 10 years (based on EIA-364-1000, table 8)

Note: Temperature life test duration (section 6.3 item 2) is based on the assumption that the contact spends its entire life at the rated maximum temperature (based on EIA-364-1000, table 8)

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4.5 DURABILITY

Plating Type	Number of Cycles
Tin Plated	30

*As tested in accordance with EIA-364-1000 test method (see sec 6.2 item 2 of this specification).
Durability per EIA-364-09*

4.6 GLOW WIRE SERIES

207017 (Under Testing)

5.0 QUALIFICATION

Laboratory condition, sample selection and test sequences are in accordance with EIA-364-1000.

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6.0 PERFORMANCE

6.1 ELECTRICAL PERFORMANCE

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
6.1.1	Contact Resistance (Low Level)	Per EIA-364-23 Mate connectors: apply a maximum voltage of 20 mV and a current of 100 mA Wire resistance shall be removed from the measured value.	10 milliohms MAXIMUM [initial]
6.1.2	Insulation Resistance	Per EIA-364-21 Mate connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground.	1000 Megohms MINIMUM
6.1.3	Dielectric Withstanding voltage	Per EIA 364-20 Mate connectors: apply a voltage of 2200 VAC for 1 minute between adjacent terminals and between terminals to ground	No breakdown. Current leakage < 5 mA
6.1.4	Temperature Rise	Refer PS-172718-0000	

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6.2 MECHANICAL PERFORMANCE

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
6.2.1	Connector Mate and Unmate Forces without latch (Per Circuit)	Mate and Unmate connector (male to female) at a rate of 25 ± 6 mm (1 ± 1/4 inch) per minute.	Mate Force: 15.6 N Max. Unmate Force: 1.0 N Min.
6.2.2	Durability (Test Group 7)	Refer PS-172718-0000	
6.2.3	Terminal to Housing Insertion and Retention Force	Insert terminal into housing at a rate of 25 ± 6 mm (1 ± 1/4 inch) per minute. Axial pullout force on the terminal in the housing at a rate of 25 ± 6 mm (1 ± 1/4 inch) per minute.	Insertion: 15.0 N Max. Retention: 30.0 N Min.
6.2.4	Vibration (Test Group 3)	Per EIA-364-28 test condition VII-D Mate connectors and vibrate for 15 minutes each axis.	20 milliohms Max. (change from initial) & Discontinuity < 1 microsecond
6.2.5	Shock (Mechanical) (Test Group 3)	Mate connectors and shock at 50 g's with 1/2 sine wave (11 milliseconds) shocks in the ±X, ±Y, ±Z axes, (18 shocks total).	20 milliohms Max. (change from initial) & Discontinuity < 1 microsecond
6.2.6	Wire Pullout force	Refer PS-172718-0000	
6.2.7	Panel Insertion & Withdrawal Forces	Insert and withdraw a connector at a rate of 25 ± 6 mm (1 ± 1/4 inch) per minute.	Insertion Force: 40 N Max. Retention Force: 100 N Min.
6.2.8	Foam Leak Test	Install the assembled connectors to panel cutout and apply foam all over the connectors. The whole setup is kept under observation for 8 hours.	Visual: No leakage of foam.

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6.3 ENVIRONMENTAL PERFORMANCE

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
6.3.1	Temperature Life (Test Group 1)	Refer PS-172718-0000	
6.3.2	Humidity (Cyclic)	Per EIA-364-31 method 3 Mate connectors: expose to 24 cycles from 25 °C / 80% RH to 65 °C / 50% RH	20 milliohms MAX (change from initial)
6.3.3	Thermal Shock (Test Group 2)	Per EIA-364-32 Mate connectors: expose for 5 cycles Between temperatures –55 and 105 °C; Dwell 0.5 hours at each temperature.	20 milliohms MAX (change from initial) Visual: No Damage

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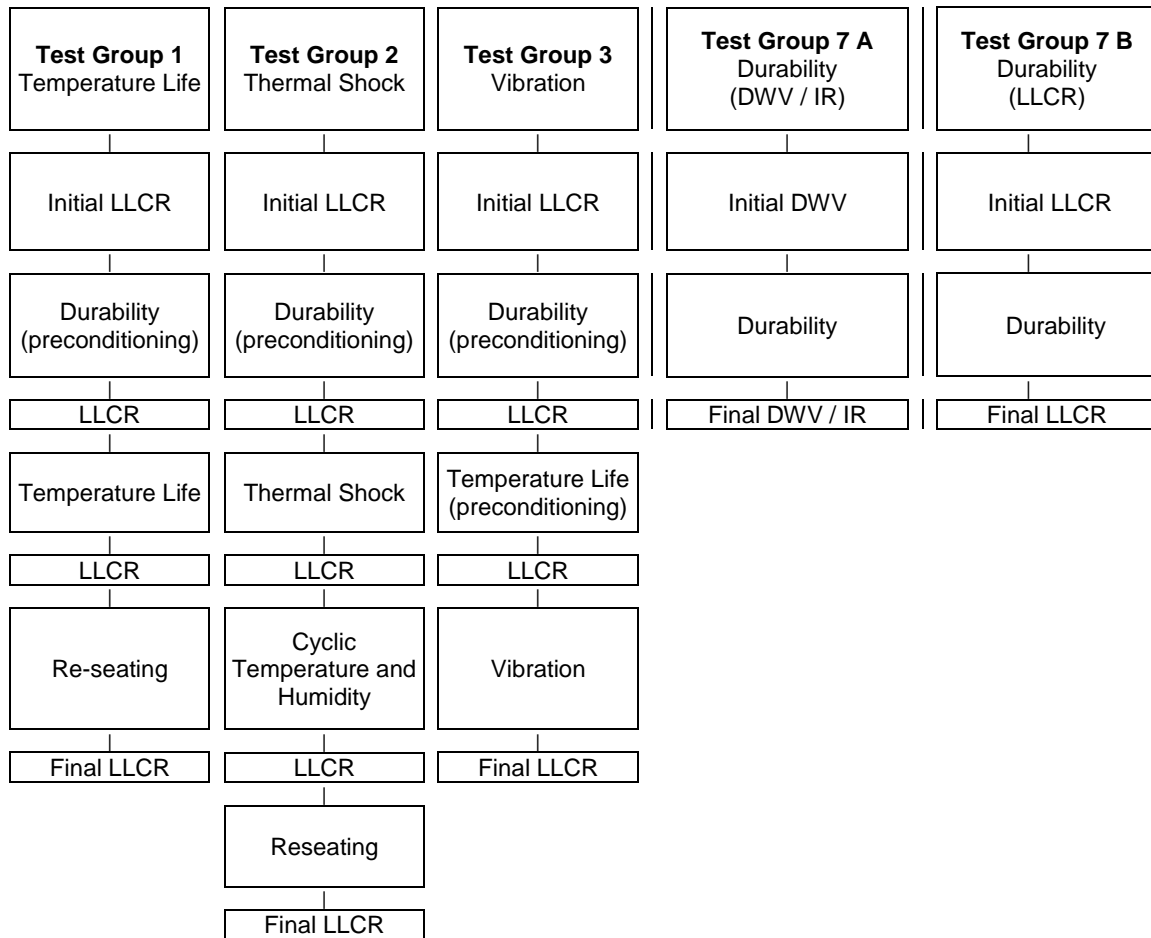
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7.0 TEST SEQUENCE

Reliability test sequences as per EIA-364-1000



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Individual Tests

Connector Mate & Un-mate Force

Terminal Insertion and Retention Force

Panel Insertion and withdrawal Force

Wire Pullout Force

Foam Leak Test

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8.0 PACKAGING

Parts shall be packaging to protect the parts from damage during standard shipping, storage, and handling. Refer Molex.com specific part number webpage to get the exact packaging document for that item.

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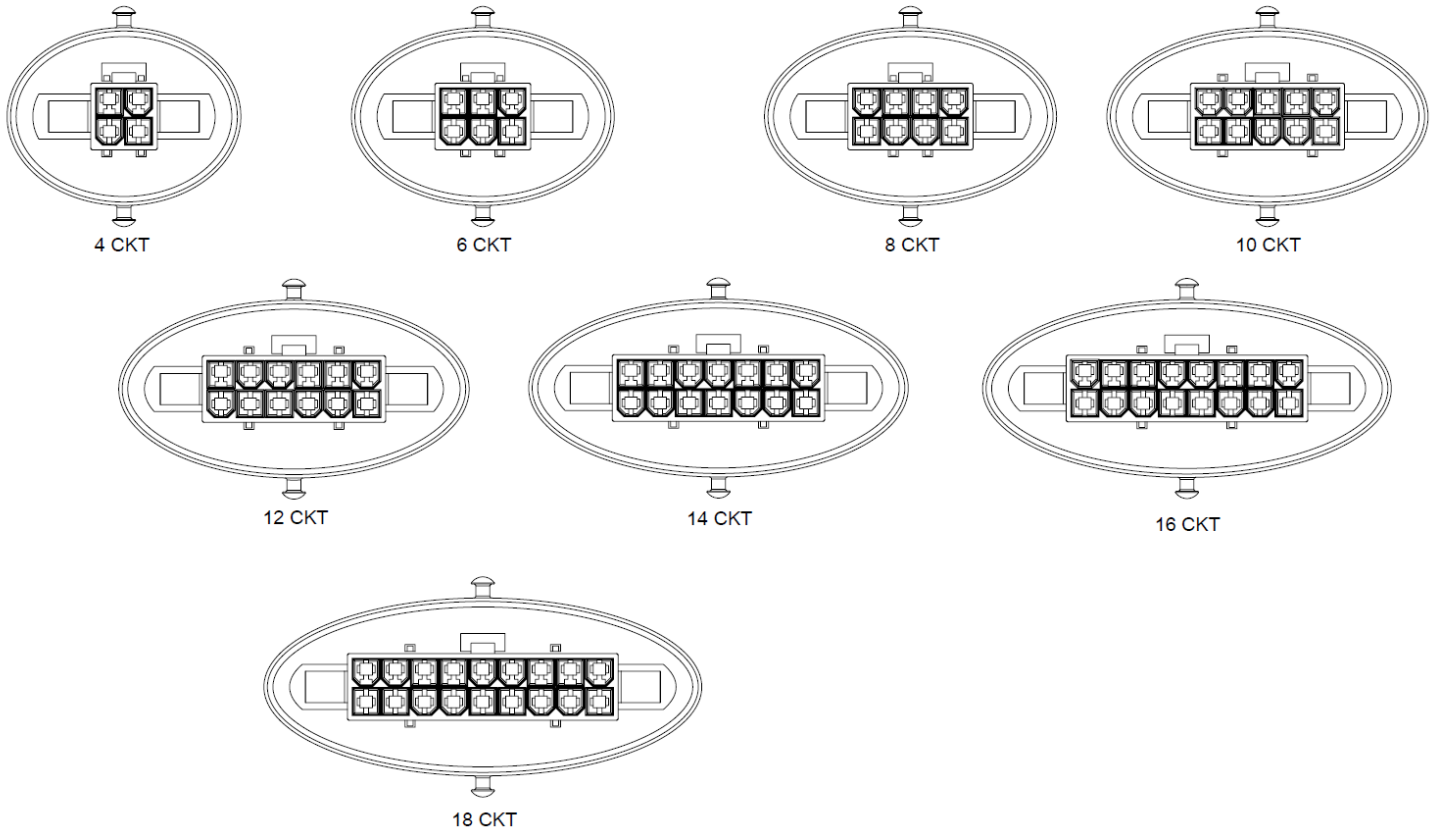
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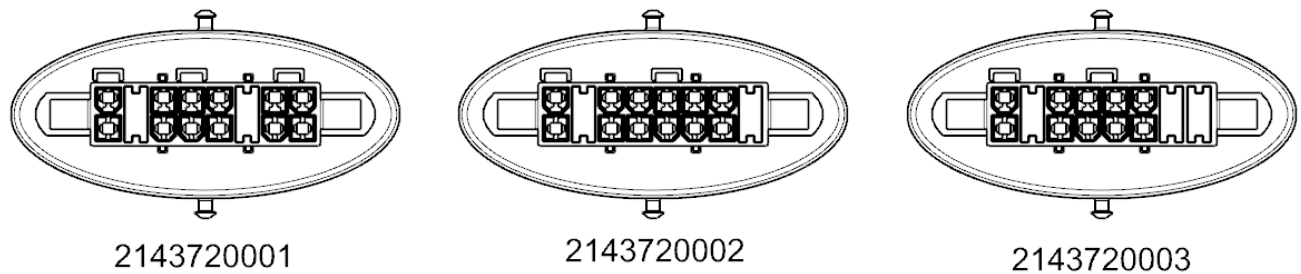
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9.0 POLARIZING AND KEYING OPTIONS

9.1 PLUG HOUSING (Series: 207017)



9.2 PLUG HOUSING, HYBRID, 16 CIRCUIT (Series: 214372)



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