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TEST SUMMARY

DUAL-WIRE TERMINATION OF MINI-FIT JR. CRIMP TERMINALS

1.0 SCOPE

This Test Summary covers Mini-Fit Jr. 4.20mm pitch receptacles with tin-plated brass and phosphorus bronze terminals, dual-terminated to combinations of 18-22 awg wire using crimp technology, mated to printed circuit board headers. Samples were subjected to pull force, temperature rise, and thermal age testing per EIA-364.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

Description	Series Number
Mini-Fit Female Crimp Terminal	5556
Mini-Fit Receptacle Housing	5557
Mini-Fit Male Crimp Terminal	5558
Mini-Fit Plug Housing	5559
Mini-Fit Vertical Header Assembly	5566
Mini-Fit Right-Angle Header Assembly	5569

2.1.1 PART NUMBERS TESTED

Mini-Fit 2ckt Header Assembly: 39281023
Mini-Fit 2ckt Receptacle: 39012020
Mini-Fit Female Crimp Terminals:
39000079 terminated to 1x 22awg and 1x 18awg wires
39000077 terminated to combinations of 18, 20, and 22awg wire
39000038 terminated to 2x 22awg wire

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See individual sales drawings

2.3 PRODUCT SPECIFICATION TITLE AND DOCUMENT NUMBER

Product Specification for Mini-Fit Wire to Board Connector System: PS-5556-001

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

3.1 TESTING SEQUENCES

Reference Appendix A

3.2 OTHER DOCUMENTS AND SPECIFICATIONS

EIA-364-1000.01

4.0 QUALIFICATION

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

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TEST SUMMARY

5.0 PERFORMANCE

5.1 ELECTRICAL PERFORMANCE

Table 1 - Mini-Fit 39000079 Terminated to 1x 22awg and 1x 18awg UL1061 Wires

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN[2]	MINIMUM[2]	MAXIMUM[2]
1	Contact Resistance	Initial	10 milliohms MAXIMUM	**5.65**[1] mΩ	**5.52**[1] mΩ	**5.79**[1] mΩ
				PASS		
2		After Durability 20 Cycles	10 mΩ Δ max[2]	**0.43** mΩ	**0.14** mΩ	**1.37** mΩ
				PASS		
3		After Thermal Aging 105C / 120 hours	10 mΩ Δ max[2]	**0.68** mΩ	**0.37** mΩ	**1.57** mΩ
				PASS		
4		After Reseating 3 cycles	10 mΩ Δ max[2]	**1.12** mΩ	**0.37** mΩ	**3.88** mΩ
				PASS		
5	Temperature Rise at Rated Current for Larger Wire	Wire to Board 2 Circuit Configuration	+30 °C MAXIMUM RISE	PASS		

Table 2 - Mini-Fit 39000077 Terminated to 1x 22awg and 1x 18awg UL1061 Wires

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN[2]	MINIMUM[2]	MAXIMUM[2]
1	Contact Resistance	Initial	10 milliohms MAXIMUM	**5.03**[1] mΩ	**4.88**[1] mΩ	**5.25**[1] mΩ
				PASS		
2		After Durability 20 Cycles	10 mΩ Δ max[2]	**0.18** mΩ	**-0.03** mΩ	**0.34** mΩ
				PASS		
3		After Thermal Aging 105C / 120 hours	10 mΩ Δ max[2]	**0.53** mΩ	**0.12** mΩ	**1.50** mΩ
				PASS		
4		After Reseating 3 cycles	10 mΩ Δ max[2]	**0.77** mΩ	**0.09** mΩ	**2.23** mΩ
				PASS		
5	Temperature Rise at Rated Current for Larger Wire	Wire to Board 2 Circuit Configuration	+30 °C MAXIMUM RISE	PASS		

[1] Absolute resistance values

[2] Δ mΩ values shown are with respect to initial contact resistance measurements from Item 1

ELECTRICAL PERFORMANCE (CONT.)

Table 3 - Mini-Fit 39000077 Terminated to 2x 20awg UL1061 Wires

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN[2]	MINIMUM[2]	MAXIMUM[2]
1	Contact Resistance	Initial	10 milliohms MAXIMUM	**5.40**[1] mΩ	**5.25**[1] mΩ	**5.40**[1] mΩ
				PASS		
2		After Durability 20 Cycles	10 mΩ Δ max[2]	**0.14** mΩ	**0.04** mΩ	**0.28** mΩ
				PASS		
3		After Thermal Aging 105C / 120 hours	10 mΩ Δ max[2]	**0.52** mΩ	**0.14** mΩ	**1.08** mΩ
				PASS		
4		After Reseating 3 cycles	10 mΩ Δ max[2]	**0.69** mΩ	**0.11** mΩ	**5.27** mΩ
				PASS		
5	Temperature Rise at Rated Current for Larger Wire	Wire to Board 2 Circuit Configuration	+30 °C MAXIMUM RISE	PASS		

Table 4 - Mini-Fit 39000077 Terminated to 2x 20awg UL1007 Wires

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN[2]	MINIMUM[2]	MAXIMUM[2]
1	Contact Resistance	Initial	10 milliohms MAXIMUM	**5.51**[1] mΩ	**5.36**[1] mΩ	**5.65**[1] mΩ
				PASS		
2		After Durability 20 Cycles	10 mΩ Δ max[2]	**0.15** mΩ	**0.02** mΩ	**0.27** mΩ
				PASS		
3		After Thermal Aging 105C / 120 hours	10 mΩ Δ max[2]	**0.40** mΩ	**0.06** mΩ	**1.20** mΩ
				PASS		
4		After Reseating 3 cycles	10 mΩ Δ max[2]	**0.58** mΩ	**0.11** mΩ	**1.20** mΩ
				PASS		
5	Temperature Rise at Rated Current for Larger Wire	Wire to Board 2 Circuit Configuration	+30 °C MAXIMUM RISE	PASS		

TEST SUMMARY

ELECTRICAL PERFORMANCE (CONT.)

Table 5 - Mini-Fit 39000038 Terminated to 2x 22awg UL1061 Wires

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN[2]	MINIMUM[2]	MAXIMUM[2]
1	Contact Resistance	Initial	10 milliohms MAXIMUM	**6.88**[1] mΩ	**6.66**[1] mΩ	**7.17**[1] mΩ
				PASS		
2		After Durability 20 Cycles	10 mΩ Δ max[2]	**0.20** mΩ	**0.05** mΩ	**0.40** mΩ
				PASS		
3		After Thermal Aging 105C / 120 hours	10 mΩ Δ max[2]	**0.54** mΩ	**0.18** mΩ	**0.95** mΩ
				PASS		
4		After Reseating 3 cycles	10 mΩ Δ max[2]	**0.66** mΩ	**0.21** mΩ	**2.95** mΩ
				PASS		
5	Temperature Rise at Rated Current for Larger Wire	Wire to Board 2 Circuit Configuration	+30 °C MAXIMUM RISE	PASS		

5.2 MECHANICAL PERFORMANCE

Table 6 - Mini-Fit 39000077

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
1	Wire Pullout Force (Wire to Terminal Retention) For Smallest AWG Wire	Terminated to 1x 20awg & 1x 22awg UL1061 Wires	35.6 N MINIMUM	**82.6** N	**80.4** N	**84.8** N
				PASS		
2		Terminated to 1x 20awg & 1x 22awg UL1007 Wires	35.6 N MINIMUM	**79.3** N	**73.6** N	**83.2** N
				PASS		
3		Terminated to 2x 20awg UL1061 Wires	57.8 N MINIMUM	**120.0** N	**114.4** N	**123.6** N
				PASS		
4		Terminated to 2x 20awg UL1007 Wires	57.8 N MINIMUM	**117.5** N	**108.4** N	**121.8** N
				PASS		
5		Terminated to 1x 18awg & 1x 22awg UL1061 Wires	35.6 N MINIMUM	**82.8** N	**79.6** N	**85.6** N
				PASS		
6		Terminated to 1x 18awg & 1x 22awg UL1007 Wires	35.6 N MINIMUM	**81.0** N	**77.4** N	**83.8** N
				PASS		

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Appendix A -Test Sequences

Figure 1 - Thermal Aging

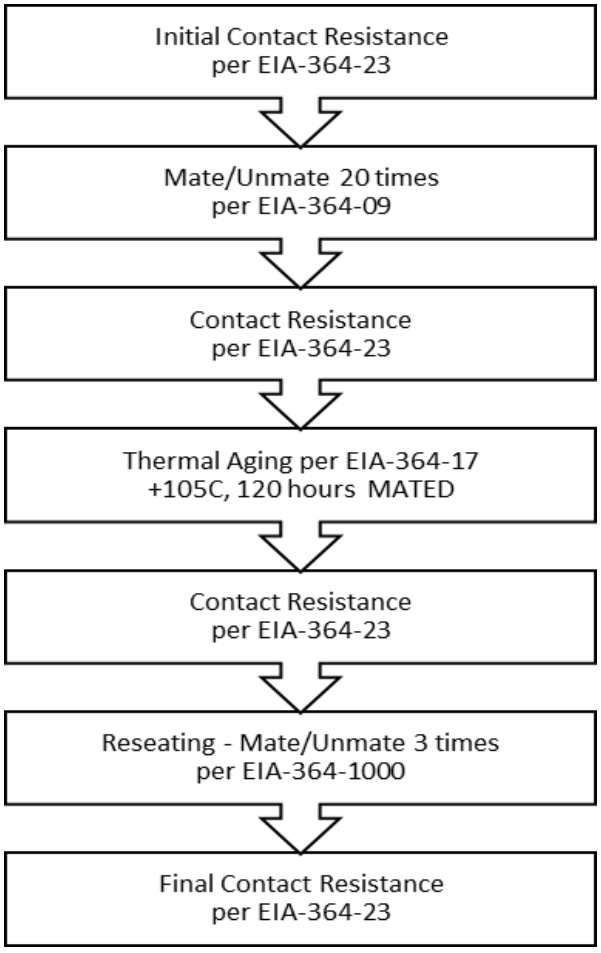
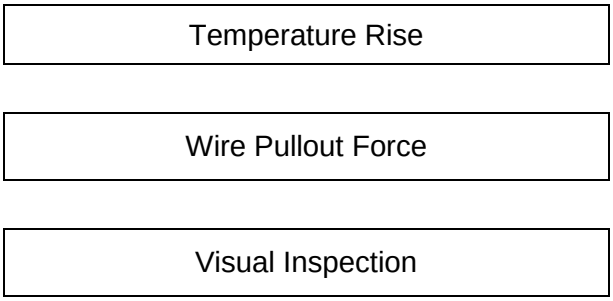


Figure 2 - Independent Tests



REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
A	EC No: **625162** DATE: **2019/11/01**	**TEST SUMMARY - DUAL-WIRE TERMINATION MINI-FIT JR**	**6** of **6**

DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
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