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
Vini-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 22ay

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		Initial	10 milliohms MAXIMUM	$5.65^1 \text{m}\Omega$	5.52 ¹ mΩ	5.79 ¹ mΩ	
					PASS		
2		After Durability 20	10 m Ω Δ max ²	0.43 mΩ	0.14 mΩ	1.37 mΩ	
	Contact	Cycles	Cycles		PASS		
3	Resistance	After Thermal	$10 \text{ mO} \text{max}^2$	0.68 mΩ	0.37 mΩ	1.57 mΩ	
		120 hours		PASS			
4	After Reseating 3		10 mO \wedge max ²	1.12 mΩ	0.37 mΩ	3.88 mΩ	
		cycles	10 ms2 Δ max		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		Initial	10 milliohms MAXIMI IM	$5.03^1 m\Omega$	4.88 ¹ mΩ	$5.25^1\mathrm{m}\Omega$
•		millar			PASS	
2		After	$10 \text{ m} \Omega \text{ A m} \Omega^2$	0.18 mΩ	-0.03 mΩ	0.34 mΩ
2	Contact	Cycles			PASS	
2	Resistance After T Aging 120 h	After Thermal	10 m0 4 mov ²	0.53 mΩ	0.12 mΩ	1.50 mΩ
3		120 hours	20 hours		PASS	
			After		0.77 mΩ	0.09 mΩ
4		cycles	3 10 m $\Omega \Delta$ max ²		PASS	
_	Temperature Rise Wire to Board				5100	
5	at Rated Current for Larger Wire	2 Circuit Configuration	+30 °C MAXIMUM RISE	PASS		
		_				

¹ Absolute re	sistance values							
2 Δ m Ω value	Δ m Ω values shown are with respect to initial contact resistance measurements from Item 1							
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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		Initial	10 milliohms MAXIMI IM	5.40 ¹ mΩ	5.25 ¹ mΩ	5.40 ¹ mΩ
•		initia			PASS	
2	Contact	After Durability 20	$10 \text{ mO} \text{ A} \text{ max}^2$	0.14 mΩ	0.04 mΩ	0.28 mΩ
2		Contact Cycles			PASS	
2	Resistance After Th	After Thermal		0.52 mΩ	0.14 mΩ	1.08 mΩ
3		Aging 105C / 10 120 hours			PASS	
4		After	$10 - 10 - 10 - 10^{2}$	0.69 mΩ	0.11 mΩ	5.27 mΩ
4		cycles	$10 \text{ m}\Omega \Delta \text{ max}^2$		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	TREATMEN	REQUIREMENT	MEAN ²	MINIMUM ²	MAXIMUM ²	
1		Initial	10 milliohms MAXIMUM	$5.51^1 \mathrm{m}\Omega$	$5.36^1 m\Omega$	$5.65^1 \ \mathrm{m}\Omega$	
		miliai			PASS		
2		After	$10 \text{ mO} \text{ A may}^2$	0.15 mΩ	0.02 mΩ	0.27 mΩ	
Z	Contact	Cycles	10 ms2 / max-		PASS		
2	Resistance	After Thermal		0.40 mΩ	0.06 mΩ	1.20 mΩ	
3		Aging 105C / 120 hours	$10 \text{ m}\Omega \Delta \text{ max}^2$	PASS			
			After	10	0.58 mΩ	0.11 mΩ	1.20 mΩ
4		cycles	$10 \text{ m}\Omega \Delta \text{ max}^2$		PASS	<u> </u>	
5	Temperature Rise at Rated Current	Wire to Board 2 Circuit	+30 °C MAXIMUM RISE	PASS			
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MINI-FIT JR

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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		Initial	10 milliohms MAXIMI IM	6.88 ¹ m Ω	6.66 ¹ m Ω	7.17 ¹ mΩ	
•		initia			PASS		
2		After Durability 20	$10 \text{ mO} \text{ A max}^2$	0.20 mΩ	0.05 mΩ	0.40 mΩ	
2	Contact	Cycles			PASS		
2	Resistance	Resistance After Th	After Thermal	hermal	0.54 mΩ	0.18 mΩ	0.95 mΩ
3		120 hours	120 hours		PASS		
4		After	0.66 mΩ	0.21 mΩ	2.95 mΩ		
4		cycles	$10 \text{ m}\Omega \Delta \text{ max}^2$		PASS		
5	Temperature Rise at Rated Current for Larger Wire	Wire to Board 2 Circuit Configuration	+30 °C MAXIMUM RISE		PASS		

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5.2 MECHANICAL PERFORMANCE

Table 6 - Mini-Fit 39000077

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

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