108-5176

Product Specification

AMP ULTREX* 2.5mm/2.54mm Pitch, Interconnection System (Crimp Style)

1. Scope:

This product specification provides requirements for product performance capability and test methods of AMP ULTREX* 2.5mm/2.54mm Pitch, Crimp Style Interconnection System of the following part numbers. The products form wire-to-board termination.

Product Numbers:	Product Names and Descriptions:
171609, 171610	Receptacle Contact, #30-#22 AWG
172677	Receptacle Housing, 2-Pos. thru 15-Pos.
172681 (2.5mm) 172682 (2.54mm)	Spring Header, Vertical Type 2-Pos. thru 15-Pos.
172683 (2.5mm) 172684 (2.54mm)	Spring Header, Horizontal Type 2-Pos. thru 15-Pos.

2. Material and Finish:

2.1 Receptacle Contact:

Receptacle contact shall be made of pretinned phosphor bronze.

2.2 Receptacle Housing:

Receptacle housing shall be made of glass-filled polybuthylene terephthalate conforming to UL 94V-O.

2.3 Spring Contact:

Spring contact shall be made of pretinned phosphor bronze.

2.4 Header Housing:

Heade housing shall be made of glass-filled polybuthylene terephthalate conforming to UL94V-O.

3. Performance Requirements:

3.1 Rating:

3.1.1 Voltage Rating:
Voltage rating shall be within 250V AC and 350V DC.

3.1.2 Current Rating:

Current rating shall be within the limit, specified below.

Wire Size	mm^2	0.05	0.08	0.13	0.20	0.3
	(AWG)	(#30)	(#28)	(#26)	(#24)	(#22)
Current Rating Amperes (Max.)		2.0 A	2.0 A	2.5 A	3.0 A	4.0 A

3.1.3 Temperature Rating:

Temperature rating shall be within the range between -30°C and +105°C.

LTR	REVISION RECORD	DR	CHK	DATE
C1	Revised RFA-1481			
C	Revised RFA-1002			
B	Revised per RFA-763			7/10 '84
A	Revised per RFA-675			
O	Released RFA-622			7/19 '83

DR / CHK / APP

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SHEET 1 OF 3

NAME Product Specification AMP ULTREX* 2.5mm/2.54mm Pitch Interconnection System

3.2 Performance Requirements:

Product performance shall meet the following requirements:

Test Item (Paragraph Number)	Performance Requirements	Test Methods
Low Level Termination Resistance: (3.2.1)	10 mΩ Max.	Measured by using 50mA max. at 50mV max.
Insulation Resistance: (3.2.2)	500MΩ Min.	Measured by using test potential of 500V DC.
Dielectric Strength: (3.2.3)	Must withstand test potential for 1 minute without showing abnormalities.	Test potential of 1,000V AC shall be applied for 1 minute.
Temperature Rising: (3.2.4)	30°C maximum.	Measured by using rated current.
Contact Retention Force (3.2.5)	3.0 kg minimum	Measured by using tensile testing machine.
Vibration, Low Frequency: (3.2.6)	Electrical discontinuity greater than 1 μsec. shall occur. Low level termination resistance(final) shall be 20mΩ max.	Sweeping vibration changing 10-55-10 Hz/min., with amplitude of 1.5 mm shall be applied in three axial directions(X,Y,Z,)two hours each totally six hours. Test current of 0.1A DC shall be applied to the test circuit during vibration.
Humidity: (3.2.7)	Low level termination resistance shall be 20mΩ max.	Expose the sample under the test atmosphere of 40°C with 90-95% RH, for 96 hours.
Salt Spray: (3.2.8)	Low level termination resistance shall be 20mΩ max.	Expose the sample under 5% salt solution spray at 35°C for48 hours
Thermal Shock: (3.2.9)	Low level termination resistance shall be 20mΩ max.	Expose the sample under 25 cycles of temperature changes reciprocating between -55°C and +85°C within 30 minutes a cycle.
Solderability: (3.2.10)	More than 95% of tested area excepting sheared surfaces, shall appear with sufficiently effective coverage of fresh, uniform solder without concentrated voids and pinholes.	Tested by immersing the sample into soldering tub which is controlled at 230°C, for 3 seconds, after applying into flux (Alpha 100).
Soldering Heat Resistivity: (3.2.11)	Sample shall appear normal without showing abnormalities which are detrimental to connector functions.	Expose the sample under the soldering heat of 260°C for 10 seconds.
Crimp Tensile Strength: (3.2.12)	Crimp Tensile Strength:(Min.) kg (lbs.) — mm^2 (AWG) 0.8 (1.76) — 0.05 (#30) 1.5 (3.31) — 0.08 (#28) 2.5 (5.51) — 0.13 (#26) 3.5 (7.72) — 0.2 (#24) 5.0 (11.02) — 0.3 (#22)	Tested by using tensile testing machine, with the head travelling with the speed at a rate of 100mm a minute. Tensile strength is determined when the wire is broken or is pulled off from the wire crimp.
post Retention Force: (3.2.13)	Post retention force shall be 1.0 kg minimum.	Measure the force required to pull off the post by using tensile testing machine.

(To be continued)

3.2 Performance Requirements (Continued):

Test Item	Performance Requirements	Test Methods
Connector Insertion/ Extraction Force: (3.2.14)	See table below	Connector insertion/extraction force is measured by using tensile testing machine. Measure and record the force required to insert and extract the connector.
Durability: (3.2.15)	Low level termination resistance (final) shall be 10 mΩ maximum.	After repeating insertion and extraction of connector for 25 cycles, measure the low level termination resistance.

No. of Pos.	Insertion (Max.) kg	Insertion (Max.) (lbs.)	Extraction (Min.) kg	Extraction (Min.) (lbs.)
2	3.0	(6.61)	0.6	(1.32)
3	4.0	(8.81)	0.6	(1.32)
4	5.0	(11.0)	0.8	(1.76)
5	5.0	(11.0)	0.8	(1.76)
6	5.0	(11.0)	1.0	(2.20)
7	5.0	(11.0)	1.0	(2.20)
8	5.0	(11.0)	1.5	(3.31)
9	5.0	(11.0)	1.5	(3.31)
10	5.0	(11.0)	2.0	(4.41)
11	5.0	(11.0)	2.0	(4.41)
12	5.0	(11.0)	2.5	(5.51)
13	5.0	(11.0)	2.5	(5.51)
14	6.0	(13.23)	2.5	(5.51)
15	6.0	(13.23)	2.5	(5.51)

(End)