

NUMBER 108-5177

Customer Release
AMP SECURITY CLASSIFICATION

108-5177

* PRELIMIANRY *

Product Specification

AMP ULTREX* 2.5mm/2.54mm Pitch
Interconnection System

(Wire Displation Termination Type)

1. Scope:

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

Product Numbers:

Product Names and Descriptions:

172685	Receptacle Contact Assembly, #28-#24, 2-Pos. thru 20-Pos.
172681 (2.5mm)	Spring Header, Vertical Type, 2-Pos. thru 20-Pos.
172682 (2.54mm)	" " " " " " " "
172683 (2.5mm)	Spring Header, Horizontal Type, 2-Pos. thru 20-Pos.
172684 (2.54mm)	" " " " " " " "

2. Material and Finish:

2.1 Receptacle Contact:

Receptacle contact shall be made of phosphor bronze and tin-plated.

2.2 Receptacle Housing:

Receptacle housing shall be made of glass-filled poly-buthylene Terephthalate resin, conforming to UL-94V-0.

2.3 Spring Contact:

Spring contact shall be made of pretinned phosphor bronze.

2.4 Header Housing:

Header housing shall be made of molded glass-filled poly-buthylene terephthalate resin, conforming to UL-94V-0.

3. Performance Requirements:

3.1 Rating:

3.1.1 Volatage/Current Rating:

Voltage rating shall be 250V AC and 350V DC maximum, and current rating shall be as follows depending upon the wire sizes terminated.

2.0 A Max.	#28 AWG	0.08mm ²
2.5 A Max.	#26 AWG	0.13mm ²
3.0 A Max.	#24 AWG	0.2mm ²

3.1.2 Temperature Rating:

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

PRINT DIST	B1	Revised RFA-1481				DR	AMP	AMP (Japan), Ltd.	
	B	Revised per RFA-764				CHK		TOKYO, JAPAN	
	A1	Revised Para.3.2.12 #24)1.8kg was 2.0kg				APP	LOC	NO	REV
	A	Revised RFA-676					J	A	B1
	O	Released RFA-621						108-5177	
	LTR	REVISION RECORD		DR	CHK	DATE	SHEET 1 OF 3		NAME Product Specification AMP ULTREX* 2.5mm/2.54mm Pitch Interconnection System

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3.2 Performance Requirements:

Product performance shall meet the following requirements:

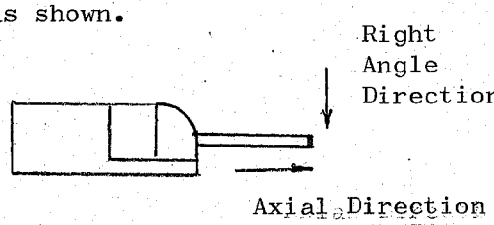
Test Item (Paragraph Number)	Performance Requirements	Test Methods
Termination Resistance: (Low Level)(Para. 3.2.1)	10 mΩ max.	Measured by using 50mA max. at 50 mV max.
Insulation Resistance: (Para. 3.2.2)	500 MΩ min.	Measured by using test potential of 500V DC.
Dielectric Strength: (Para. 3.2.3)	Must withstand test potential for 1 minute without showing abnormalities.	Test potential of 1,000V AC shall be applied for 1 minute.
Temperature Rising: (Para. 3.2.4)	30°C maximum	Measured by using rated current.
Contact Retention Force: (Para. 3.2.5)	3.0 kg min.	Measured by using tensile testing machine.
Vibration, Low Frequency (Para. 3.2.6)	Electrical discontinuity greater than 1 μsec. shall not 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: (Para. 3.2.7)	Low level termination resistance shall be 20mΩ max.	Expose the sample under the test atmosphere of 40°C with 90-95% R.H. for 96 hours.
Salt Spray: (Para. 3.2.8)	Low level termination resistance shall be 20mΩ max.	Expose the samples under 5% salt solution spray at 35°C for 48 hours.
Thermal Shock: (Para. 3.2.9)	Low level termination resistance shall be 20 mΩ max.	Expose the sample under 25 cycles of temperature changes reciprocating between -55°C and + 85°C within 30 minutes a cycle.
Solderability: (Para. 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: (Para. 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.

(To be continued)

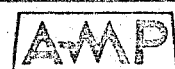
SHEET			AMP (Japan), Ltd. TOKYO, JAPAN	
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3.2 (Continued)

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Test Item (Paragraph Number)	Performance Requirements	Test Methods																																																																												
Wire Retention Force: (Para. 3.2.12)	Retention Force (Min.) (Axial Direction) (AWG) mm ²	Wire retention force shall be measured by using tensile testing machine. Apply a pull-off load in the specified direction as shown. 																																																																												
	1.5kg (3.3 lbs.) (#28) 0.08																																																																													
	2.5kg (5.51 ") (#26) 0.13																																																																													
	3.5kg (7.72 ") (#24) 0.2																																																																													
	(Right Angle Direction)(Min.)																																																																													
	1.0kg (2.20 lbs.) (#28) 0.08																																																																													
	1.5kg (3.31 lbs.) (#26) 0.13																																																																													
1.8kg (3.97 lbs.) (#24) 0.2																																																																														
Post Retention Force (Para. 3.2.13)	1.0 kg (2.2 lbs.) Min.	Measure the force by using tensile testing machine.																																																																												
Connector Insertion/ Extraction Force: (Para. 3.2.14)	Connector Insertion/Extraction Force																																																																													
	No. of Positions	<table border="1"> <thead> <tr> <th colspan="2">Insertion (Max.)</th> <th colspan="2">Extraction (Min.)</th> </tr> <tr> <th>kg</th> <th>(lbs.)</th> <th>kg</th> <th>(lbs.)</th> </tr> </thead> <tbody> <tr><td>2</td><td>3.0 (6.61)</td><td>0.6 (1.32)</td><td></td></tr> <tr><td>3</td><td>4.0 (8.82)</td><td>0.6 (1.32)</td><td></td></tr> <tr><td>4</td><td>5.0 (11.02)</td><td>0.8 (1.76)</td><td></td></tr> <tr><td>5</td><td>5.0 (11.02)</td><td>0.8 (1.76)</td><td></td></tr> <tr><td>6</td><td>5.0 (11.02)</td><td>1.0 (2.20)</td><td></td></tr> <tr><td>7</td><td>5.0 (11.02)</td><td>1.0 (2.20)</td><td></td></tr> <tr><td>8</td><td>5.0 (11.02)</td><td>1.5 (3.31)</td><td></td></tr> <tr><td>9</td><td>5.0 (11.02)</td><td>1.5 (3.31)</td><td></td></tr> <tr><td>10</td><td>5.0 (11.02)</td><td>2.0 (4.41)</td><td></td></tr> <tr><td>11</td><td>5.0 (11.02)</td><td>2.0 (4.41)</td><td></td></tr> <tr><td>12</td><td>5.0 (11.02)</td><td>2.5 (5.51)</td><td></td></tr> <tr><td>13</td><td>5.0 (11.02)</td><td>2.5 (5.51)</td><td></td></tr> <tr><td>14</td><td>6.0 (13.22)</td><td>2.5 (5.51)</td><td></td></tr> <tr><td>15</td><td>6.0 (13.22)</td><td>2.5 (5.51)</td><td></td></tr> <tr><td>16</td><td>7.0 (15.43)</td><td>3.0 (6.61)</td><td></td></tr> <tr><td>18</td><td>7.0 (15.43)</td><td>3.0 (6.61)</td><td></td></tr> <tr><td>20</td><td>7.0 (15.43)</td><td>3.0 (6.61)</td><td></td></tr> </tbody> </table>	Insertion (Max.)		Extraction (Min.)		kg	(lbs.)	kg	(lbs.)	2	3.0 (6.61)	0.6 (1.32)		3	4.0 (8.82)	0.6 (1.32)		4	5.0 (11.02)	0.8 (1.76)		5	5.0 (11.02)	0.8 (1.76)		6	5.0 (11.02)	1.0 (2.20)		7	5.0 (11.02)	1.0 (2.20)		8	5.0 (11.02)	1.5 (3.31)		9	5.0 (11.02)	1.5 (3.31)		10	5.0 (11.02)	2.0 (4.41)		11	5.0 (11.02)	2.0 (4.41)		12	5.0 (11.02)	2.5 (5.51)		13	5.0 (11.02)	2.5 (5.51)		14	6.0 (13.22)	2.5 (5.51)		15	6.0 (13.22)	2.5 (5.51)		16	7.0 (15.43)	3.0 (6.61)		18	7.0 (15.43)	3.0 (6.61)		20	7.0 (15.43)	3.0 (6.61)	
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		Measure connector insertion/extraction force by using tensile testing machine.																																																																												
Durability (Repeated Insertion/ Extraction) (Para. 3.2.15)	Termination resistance shall be 10 mΩ max.	After repeating insertion and extraction, measure the force after 25th. cycle of conditioning.																																																																												

(End)

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