

RELIABILITY TEST REPORT

TESTITEM: 1.ELECTRICAL
2.MECHANICAL
3.ENVIRONMENTAL

SERIES NO.: CIL1 SERIES

TEST EQUIPMENT: 1.INSERTION & REMOVAL APPARATUS
2.ELECTRONIC MEASURING APPARATUS
3.ENVIRONMENTAL APPARATUS

DATE OF TESTING: 01 / 23 / 2013

TEST DEPART: R&D

TESTER: Clark.Chen

CONTAIN: ATTACHED



REVIEWED: David APPROVED: David VERIFIED: Clark .



1.ELECTRICAL PERFORMANCE :

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
1-1	Contact resistance	Dry circuit of DC 20mV max.,10mA max., wire resistance shall be removed from the measured value	Less than 20 mΩ	Sample	20 mΩ max.
				1	11.07 mΩ
				2	11.03 mΩ
				3	11.13 mΩ
				4	11.11 mΩ
				5	11.09 mΩ
1-2	Dielectric strength	When applied AC1500V 1 minute between adjacent terminal.	No breakdown	Sample	1 minute
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
1-3	Insulation resistance	When applied DC 500 V between adjacent terminal or ground	More than 1000 MΩ	Sample	1000 MΩ min.
				1	10×10 ⁶ MΩ
				2	10×10 ⁶ MΩ
				3	10×10 ⁶ MΩ
				4	10×10 ⁶ MΩ
				5	10×10 ⁶ MΩ

2. MECHANICAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
2-1	Pin retention force in Board mount Header	Push Pin for insulator base at speed 25±3 mm per minute	Plug: More than 0.3 Kgf	Sample	> 0.3 Kgf
				1	1.12 kgf
				2	1.03 kgf
				3	1.10 kgf
				4	1.08 kgf
				5	1.07 kgf
			Receptacle: More than 0.3 Kgf	Sample	> 0.3 Kgf
				1	1.22 kgf
				2	1.28 kgf
				3	1.21 kgf
				4	1.30 kgf
				5	1.26 kgf



2-2	Mating & Unmating force	Horizontal direction: Speed 25±3 mm per minute	Mating force: Less than 3.0 kgf	Sample	< 3.0 kgf
				1	2.047 kgf
				2	2.219 kgf
				3	2.105 kgf
				4	2.133 kgf
				5	2.182 kgf
			Unmating force: More than 0.5 kgf	Sample	> 0.5 kgf
				1	1.654 kgf
				2	1.735 kgf
				3	1.539 kgf
				4	1.623 kgf
				5	1.572 kgf
		Lateral direction: Speed 25±3 mm per minute	Mating force: Less than 3.0 kgf	Sample	< 3.0 kgf
				1	2.210 kgf
				2	2.042 kgf
				3	2.153 kgf
				4	2.081 kgf
				5	2.173 kgf
			Unmating force: More than 0.5 kgf	Sample	> 0.5 kgf
				1	1.594 kgf
				2	1.710 kgf
				3	1.636 kgf
				4	1.681 kgf
				5	1.621 kgf
2-3	Durability	Connector shall be subjected to 10 cycles of insertion and withdrawal	Contact resistance: Less than twice of initial	Sample	Contact resistance
				1	12.55 mΩ
				2	12.51 mΩ
				3	12.52 mΩ
				4	12.62 mΩ
				5	12.56 mΩ

3. ENVIRONMENTAL PERFORMANCE:

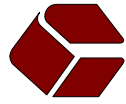
	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
3-1	Temperature rise	Then carried the rated current	30°C max.	Sample	< 30 °C
				1	18.2 °C
				2	18.8 °C
				3	17.9 °C
				4	18.6 °C
				5	17.6 °C



3-2	Heat aging	85 ± 2 °C ,96 hours	No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
3-3	Humidity	60 ±2°C, 90-95%RH, 96 hours measurement must be taken within 30 min. after tested	Appearance: No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
			Contact resistance: Less than twice of initial	Sample	Contact resistance
				1	11.52 mΩ
				2	11.59 mΩ
				3	11.53 mΩ
				4	11.56 mΩ
				5	11.58 mΩ
			Dielectric strength: To pass Para 1-2	Sample	Dielectric strength
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
3-4	Temperature cycling	One cycle consists of: 1. -55 ⁺⁰ ₋₃ °C , 30 min 2. Room temp. 10-15 min 3. 85 ⁺³ ₀ °C , 30 min 4. Room temp. 10-15 min Total cycle: 5 cycle	Appearance: No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
			Contact resistance: Less than twice of initial	Sample	Contact resistance
				1	11.68 mΩ
				2	11.62 mΩ
				3	11.69 mΩ
				4	11.61 mΩ
				5	11.68 mΩ
			Dielectric strength: To pass Para 1-2	Sample	Dielectric strength
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass



3-5	Salt spray	Temperature:35±3°C Solution:5±1% Spray time:48±4 hours Measurement must be taken after water rinse	Appearance: No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
			Contact resistance: Less than twice of initial	Sample	Contact resistance
				1	12.01 mΩ
				2	12.07 mΩ
				3	12.05 mΩ
				4	12.02 mΩ
				5	12.09 mΩ
			Dielectric strength: To pass Para 1-2	Sample	Dielectric strength
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
3-6	Solder ability	Lead-Free Process: Soldering time: 3 ± 0.5 second Soldering pot: 245 ± 5°C	Minimum: 90% of immersed area	Sample	> 90%
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
3-7	Resistance to soldering heat	Lead-Free Process for SMT Type: Refer Reflow temperature profile(4.1)	No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
3-8	Micro Vibration	100 G 50 Cycle/min 20,000 cycles	Appearance: No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
			Contact resistance: Less than twice of initial	Sample	Contact resistance
				1	18.82 mΩ
				2	19.52 mΩ
				3	19.75 mΩ
				4	18.94 mΩ
				5	19.32 mΩ
			Insulation resistance: To pass Para 1-3	Sample	Insulation resistance:
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass



4. Recommended IR Reflow Temperature Profile:

4.1 Using Lead-Free Solder Paste

