

RELIABILITY TEST REPORT

TEST ITEM: 1.ELECTRICAL  
2.MECHANICAL  
3.ENVIRONMENTAL

SERIES NO.: CI01 Series

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

DATE OF TESTING: 8/ 22 / 06”

TEST DEPART: QA TESTER: Scott.Lien

CONTAIN: ATTACHED

REVIEWED : Jackal APPROVED : Rita VERIFIED : Scott.Lien .

**1.ELECTRICAL PERFORMANCE :**

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
1-1	Contact resistance	Dry circuit of DC 20 mV max.100 mA max.	Less than 20 mΩ	Sample	20 mΩ max.
				1	3.72 mΩ
				2	3.86 mΩ
				3	3.91 mΩ
				4	3.79 mΩ
				5	3.80 mΩ
1-2	Dielectric strength	When applied AC 800 V 1 minute between adjacent terminal	No change	Sample	800 V 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	15×10 <sup>5</sup> MΩ
				2	16×10 <sup>5</sup> MΩ
				3	15×10 <sup>5</sup> MΩ
				4	15×10 <sup>5</sup> MΩ
				5	14×10 <sup>5</sup> MΩ

**2. MECHANICAL PERFORMANCE:**

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
2-1	Terminal crimp tensile strength	When crimped AWG# 22 size wire	More than 5.0 Kgf	Sample	> 5.0 Kgf
				1	6.8 Kgf
				2	6.0 Kgf
				3	6.8 Kgf
				4	6.5 Kgf
				5	6.6 Kgf
		When crimped AWG# 24 size wire	More than 3.0 Kgf	Sample	> 3.0 Kgf
				1	4.2 Kgf
				2	4.7 Kgf
				3	5.2 Kgf
				4	4.9 Kgf
		When crimped AWG# 26 size wire	More than 2.0 Kgf	Sample	> 2.0 Kgf
				1	3.2 Kgf
				2	3.1 Kgf
				3	3.6 Kgf
4	3.8 Kgf				
5	3.7 Kgf				

		When crimped AWG# 28 size wire	More than 1.3 Kgf	Sample	>1.3 Kgf
				1	2.1 Kgf
				2	2.5 Kgf
				3	2.7 Kgf
				4	2.8 Kgf
				5	3.1 Kgf
2-2	Terminal insertion force	Insertion speed 25± 3 mm per minute into housing	Less than 600 gram	Sample	< 600 gram
				1	411 gram
				2	409 gram
				3	324 gram
				4	387 gram
				5	352 gram
2-3	Contact retaining force in insulator	Retention speed 25± 3 mm per minute from housing	More than 1.5 Kgf	Sample	> 1.5 Kgf
				1	1.89 Kgf
				2	1.90 Kgf
				3	1.88 Kgf
				4	2.04 Kgf
				5	2.12 Kgf
2-4	Single contact insertion force	Measure force to insertion using 0.64 mm square pin at speed 25±3 mm per minute	700 gram max.	Sample	700 gram max.
				1	430 gram
				2	432 gram
				3	424 gram
				4	480 gram
				5	436 gram
2-5	Single contact withdrawal force	Measure force to insertion using 0.64 mm square pin at speed 25±3 mm per minute	100 gram min.	Sample	40 gram min.
				1	322 gram
				2	307 gram
				3	337 gram
				4	319 gram
				5	347 gram
2-6	Durability	Connector shall be subjected to 100 cycles of insertion and withdrawal	Contact resistance: Less than twice of initial	Sample	< twice of initial
				1	3.85 mΩ
				2	3.86 mΩ
				3	4.01 mΩ
				4	3.89 mΩ
				5	4.01 mΩ
2-7	Pin retention force	Push pin from insulator base at speed 25±3mm per minute	More than 1.0 Kgf	Sample	> 1.0 Kgf
				1	2.70 Kgf
				2	2.39 Kgf
				3	2.21 Kgf
				4	2.75 Kgf
				5	2.88 Kgf

2-8	Mating and unmating force	Speed 25±3 mm per minute	15 pin Mating force 10.0 max. Unmating force 2.5 min.	Sample	Mating	unmating
				1	8.8	6.3
				2	8.7	6.4
				3	8.9	6.4
				4	8.7	6.3
			5	8.8	6.2	

### 3. ENVIRONMENTAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
3-1	Temperature rise	Then carried the rated current	30 °C max.	Sample	30 °C max.
3-2	Vibration	1.5 mm 10-55-10 HZ/minute each 2 hours for X, Y and Z directions	Appearance: No damage	Sample	No damage
			Discontinuity: 1 micro second max.	Sample	1 micro second max.
3-3	Solderability	Soldering time: 5 ±0.5 sec. Soldering pot:230 ±5°C	Minimum: 90% of immersed area	Sample	90% of Immersed area
				1	Pass
				2	Pass
				3	Pass
				4	Pass
3-4	Resistance to soldering heat	Soldering time: 5 ±0.5 sec. Soldering pot:260 ±5°C	Appearance: No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass

3-5	Heat aging	85 ±2°C , 96 hours	Appearance: No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
3-6	Humidity	40 ±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	< twice of initial
				1	3.91 mΩ
				2	3.96 mΩ
				3	3.89 mΩ
				4	3.87 mΩ
				5	3.90 mΩ
			Dielectric strength: To pass Para 1-2	Sample	Pass para 1-2
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
3-7	Temperature cycling	One cycle consists of: 1. $-55_{-3}^{+0}$ °C, 30 min 2. Room temp. 10-15 min 3. $85_{-0}^{+3}$ °C, 30 min 4. Room temp. 10-15 min	Appearance: No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
			Contact resistance: Less than twice of initial	Sample	< twice of initial
				1	3.96 mΩ
				2	3.98 mΩ
				3	4.04 mΩ
				4	3.89 mΩ
5	3.35 mΩ				
3-8	Salt spray	Temperature: $35\pm 3^{\circ}\text{C}$ Solution: $5\pm 1\%$ Spray time: $48\pm 4$ 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	< twice of initial
				1	3.90 mΩ
				2	4.41 mΩ
				3	4.03 mΩ
				4	3.99 mΩ
				5	3.96 mΩ