

RELIABILITY TEST REPORT

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

PART NO. : CP35 SERIES

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

DATE OF TESTING : 12/07/04”

TEST DEPART :QA

TESTER : Rita

CONTAIN : ATTACHED

REVIEWED : Smith APPROVED : Jackal VERIFIED : Rita .

1. ELECTRICAL PERFORMANCE :

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
1-1	Contact resistance	Dry circuit of DC 20mV max., 100mA max. Wire resistance shall be removed from the measured value	Less than 10 mΩ	Sample	10 mΩ max.
				1	4.30 mΩ
				2	4.35 mΩ
				3	4.28 mΩ
				4	4.18 mΩ
				5	4.44 mΩ
1-2	Dielectric strength	When applied AC 1500V 1 minute between adjacent terminal	No Breakdown	Sample	No Breakdown
				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	
				2	
				3	
				4	
				5	
1-4	Contact resistance on Crimped portion	Crimp the wire to the terminal, measure by dry circuit, 20m V max., 100m A max., Wire resistance shall be removed from the measured value.	Less than 5 mΩ	Sample	5 mΩ max.
				1	3.38 mΩ
				2	3.13 mΩ
				3	3.22 mΩ
				4	3.25 mΩ
				5	3.31 mΩ

2. MECHANICAL PERFORMANCE :

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
2-1	Terminal crimp strength	When crimped AWG #20 size wire	More than 7.0 Kgf	Sample	7.0 Kgf min.
				1	8.57 Kgf
				2	9.01 Kgf
				3	8.69 Kgf
				4	9.24 Kgf
				5	9.72 Kgf
		When crimped AWG #22 size wire	More than 5.0 Kgf	Sample	5.0 Kgf min.
				1	6.15 Kgf
				2	6.22 Kgf
				3	6.09 Kgf
				4	6.18 Kgf
		When crimped AWG #24 size wire	More than 3.0 Kgf	Sample	3.0 Kgf min.
				1	4.56 Kgf
				2	4.24 Kgf
				3	4.02 Kgf
4	4.37 Kgf				
5	4.50 Kgf				

2-2	Terminal insertion force	Insertion speed 25±3 mm per minute into housing	Less than 1.5 Kgf	Sample	1.5 Kgf max.
				1	0.381 Kgf
				2	0.457 Kgf
				3	0.415 Kgf
				4	0.422 Kgf
5	0.445 Kgf				
2-3	Terminal retaining force in insulator	Retention speed 25±3 mm per minute from housing	More than 3.0 Kgf	Sample	3.0 Kgf min.
				1	6.35 Kgf
				2	5.80 Kgf
				3	5.36 Kgf
				4	4.98 Kgf
5	5.85 Kgf				
2-4	Single contact insertion force	Measure force to insertion using mating square pin at speed 25±3 mm per minute	700 gram max.	Sample	700 gram max.
				1	362 gram
				2	354 gram
				3	370 gram
				4	382 gram
5	363 gram				
2-5	Single contact withdrawal force	Measure force to withdrawal using mating square pin at speed 25±3 mm per minute	150 gram min.	Sample	150 gram min.
				1	435 gram
				2	415 gram
				3	383 gram
				4	398 gram
5	397 gram				
2-6	Pin retention force in Board mount Header	Push pin for insulator base at speed 25±3 mm per minute	More than 1.5 Kgf	Sample	1.5 Kgf min.
				1	3.57 Kgf
				2	4.22 Kgf
				3	3.70 Kgf
				4	3.58 Kgf
5	3.67 Kgf				
2-7	Mating & Unmating force	Speed 25±3 mm per minute (2 Circuits to 24 Circuits) 15.0 Kgf max.	(02pin) mating force	Sample	Mating
				1	0.58 Kgf
				2	0.60 Kgf
				3	0.56 Kgf
				4	0.57 Kgf
			5	0.61 Kgf	
			(02pin) Unmating force	Sample	Unmating
				1	0.64 Kgf
				2	0.61 Kgf
				3	0.55 Kgf
				4	0.55 Kgf
			5	0.59 Kgf	
			(12pin) mating force	Sample	Mating
				1	4.25 Kgf
				2	3.98 Kgf
3	3.67 Kgf				
4	3.85 Kgf				
5	4.06 Kgf				

			(12pin) Unmating force	Sample	Unmating
				1	3.83 Kgf
				2	3.39 Kgf
				3	3.13 Kgf
				4	3.26 Kgf
				5	3.30 Kgf
			(24pin) mating force	Sample	Mating
				1	7.76 Kgf
				2	7.58 Kgf
				3	6.87 Kgf
				4	7.04 Kgf
				5	7.75 Kgf
			(24pin) Unmating force	Sample	Unmating
				1	7.73 Kgf
				2	6.88 Kgf
				3	6.35 Kgf
				4	6.64 Kgf
				5	6.79 Kgf
2-8	Durability	Connector shall be subjected to 30 cycles of insertion and withdrawal	Contact resistance: Less than twice of initial	Sample	< twice of initial
				1	4.39 mΩ
				2	4.41 mΩ
				3	4.37 mΩ
				4	4.32 mΩ
				5	4.20 mΩ
			Contact resistance: Less than twice of initial for crimped portion	Sample	< twice of initial
				1	3.41 mΩ
				2	3.25 mΩ
				3	3.33 mΩ
				4	3.52 mΩ
				5	3.38 mΩ
2-9	Locking force	While with drawing plug & receptacle without terminal at speed 25±3 mm per minute	More than 5.5 Kgf	Sample	5.5 Kgf min.
				1	8.90 Kgf
				2	8.92 Kgf
				3	9.12 Kgf
				4	9.23 Kgf
				5	9.08 Kgf

3. ENVIRONMENTAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
3-1	Temperature rise	Then carried the rated current	30 max.	Sample	30 max. UL File:E159616
3-2	Vibration	1.5 mm 10-55-10 HZ/minute each 2 hours for X, Y and Z directions	Appearance: No damage Discontinuity: 1 micro second max.	Sample	No damage
				Sample	1 micro second max.

3-3	Heat aging	105 ±2 , 96 hours	No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
5	Pass				
3-4	Humidity	60 ±2 , 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	4.29 mΩ
				2	4.36 mΩ
				3	4.48 mΩ
				4	4.37 mΩ
			5	4.35 mΩ	
			Contact resistance: Less than twice of initial for crimped portion	Sample	< twice of initial
				1	3.32 mΩ
				2	3.41 mΩ
				3	3.38 mΩ
				4	3.45 mΩ
			5	3.58 mΩ	
			Dielectric strength: To pass para 1-2	Sample	Pass para 1-2
1	Pass				
2	Pass				
3	Pass				
4	Pass				
5	Pass				
3-5	Temperature cycling	One cycle consists of: 1. -55 ⁺⁰ ₋₃ , 30 min 2. Room temp. 10-15 min 3. 105 ⁺³ ₋₀ , 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	4.39 mΩ
				2	4.51 mΩ
				3	4.47 mΩ
				4	4.38 mΩ
				5	4.30 mΩ

			Contact resistance: Less than twice of initial for crimped portion	Sample	< twice of initial
				1	3.39 mΩ
				2	3.28 mΩ
				3	3.39 mΩ
				4	3.37 mΩ
				5	3.39 mΩ
3-6	Salt spray	Temperature: 35±3°C Solution: 5±1% Spray time: 48±4hours 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	4.51 mΩ
				2	4.33 mΩ
				3	4.40 mΩ
				4	4.38 mΩ
			Contact resistance: Less than twice of initial for crimped portion	Sample	< twice of initial
				1	3.38 mΩ
				2	3.13 mΩ
				3	3.22 mΩ
4	3.25 mΩ				
5	3.31 mΩ				
3-7	Solder ability	Soldering time: 5 ±0.5 sec. Soldering pot:230 ±5	Minimum: 90% of immersed area	Sample	90% of Immersed area
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
3-8	Resistance to soldering heat	Max. Infrared Reflow Soldering temperature & time : 230 for 60 sec 260 for 10 sec	No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass

4.AMBIENT TEMPERATURE RANGE:-40 to+105