ENGINEERING	RELIABILITY TEST REPORT	SPEC.NO.: SPCF070A
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TEST ITEM :1.ELECTRICAL
2.MECHANICAL
3.ENVIRONMENTAL

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

SERIES NO. : P/N: CF50101D0RA-10-NH

DATE OF TESTING : 2019/5/31

TEST DEPART : R&D

LOT Number:

CONTAIN : ATTACHED

TEST RESULT: ■ACCEPT □REJECT

CVILUX CORP
2019.08.02
ISSUED

APPROVE BY: Eisley CHECKED By: Eisley TESTER BY: Hank

1.ELECTRICAL PERFORMANCE :

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
1-1	Contact Resistance	Measured at 20 mV maximum open circuit at 100mA .Mated test contacts must be in a connector housing. Test as per EIA364-23	Less than 30 mΩ	Sample	＜ 30 mΩ.
				1	9.15 mΩ
				2	9.18 mΩ
				3	9.62 mΩ
				4	9.25 mΩ
				5	9.13 mΩ
1-2	Dielectric strength	Test between adjacent contacts with a voltage of 500 VAC for 1 minute at Sea level. Test as per EIA364-20 Method B	No Damage	Sample	500 V 1 minute
				1	OK
				2	OK
				3	OK
				4	OK
				5	OK
1-3	Insulation resistance	After 500 VDC for 1 minute , measure the insulation resistance between the adjacent contacts. Test as per EIA364-21	More than 1000 MΩ	Sample	1000 MΩ min
				1	＞1000 MΩ
				2	＞1000 MΩ
				3	＞1000 MΩ
				4	＞1000 MΩ
				5	＞1000 MΩ

2. MECHANICAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
2-1	FFC/FPC Retention Force	Apply axial load to FFC/FPC by operating at the speed rate of 25.4 ± 3 mm/min.	0.03 Kgf/Pin min. 10PIN X 0.03Kgf = 0.30Kgf	Sample	＞0.30Kgf
				1	0.609 Kgf
				2	0.615 Kgf
				3	0.625 Kgf
				4	0.645 Kgf
				5	0.617 Kgf
2-2	Contact retaining force in insulator	The end of terminal shall be pulled in a perpendicular to base housing at a maximum rate of 25.4 ± 3 mm/min. Test as per EIA 364-29	More than 0.15 Kgf	Sample	＞0.15 Kgf
				1	0.321 Kgf
				2	0.313 Kgf
				3	0.335 Kgf
				4	0.361 Kgf
				5	0.328 Kgf

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
2-3	TAB Retention Force	Apply axial pull out of force at the speed of 25.4 ± 3 mm/min. on the fitting nail assembled in the housing.	More than 0.10 Kgf	Sample	＞0.10 Kgf
				1	0.32 Kgf
				2	0.37 Kgf
				3	0.34 Kgf
				4	0.30 Kgf
				5	0.32 Kgf
2-4	Durability	Mate applicable FFC/FPC and insert and withdraw actuator at the speed rate of 25.4 ± 3mm/min Times :Up to 20 cycles.	Appearance: No damage	Sample	
				1	OK
				2	OK
				3	OK
				4	OK
				5	OK
			Contact Resistance： Less than 60 mΩ	Sample	＜ 60 mΩ.
				1	11.03 mΩ
				2	12.11 mΩ
				3	12.12 mΩ
				4	12.51 mΩ
				5	11.69 mΩ
			0.03 Kgf/Pin min. 10PIN X 0.03Kgf = 0.30Kgf	Sample	＞0.30Kgf
				1	0.587 Kgf
				2	0.586 Kgf
				3	0.602 Kgf
				4	0.599 Kgf
				5	0.613 Kgf

3.ENVIRONMENTAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
3-1	Temperature rise	The object of this test procedure is to detail a standard method to assess the current carrying capacity of mated battery connector contact. Test as per EIA364-70 Method B	30°C max.	Sample	30 ℃ max.
				1	18 ℃
				2	19 ℃
				3	22 ℃
				4	17 ℃
				5	18 ℃

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
3-2	Vibration	Subject mated FFC/FPC, All contacts shall be connected in series and DC 100mA shall be applied. Frequency:10~55 Hz Full amplitude1.5mm in 3 directions for 2 hours respectively. (EIA 364 – 28 Condition I)	Appearance : No damage	Sample	No damage
				1	OK
				2	OK
				3	OK
				4	OK
				5	OK
			Discontinuity: 1 micro second max.	Sample	500 V 1 minute
				1	OK
				2	OK
				3	OK
				4	OK
				5	OK
3-3	Physical Shock	Subject mated FFC/FPC to 50 G's half-sine shock pulses of 11ms duration. Three shocks in each direction applied along three mutually perpendicular planes for a total of 18 shocks. (EIA364-27 condition A)	Appearance : No damage	Sample	No damage
				1	OK
				2	OK
				3	OK
				4	OK
				5	OK
			Discontinuity: 1 micro second max.	Sample	500 V 1 minute
				1	OK
				2	OK
				3	OK
				4	OK
				5	OK
3-4	Solder ability	Steam age 1 hour at 90℃～96℃ Solder time to be 5±1 seconds at 245℃±5℃, using unactivated flux. (EIA364-52)	Minimum: 95% of immersed area	Sample	
				1	OK
				2	OK
				3	OK
				4	OK
				5	OK
3-5	Resistance to soldering heat	Soldering time: 10 second , 2times Soldering pot: 250~260°C max.	Appearance : No damage	Sample	No damage
				1	OK
				2	OK
				3	OK
				4	OK
				5	OK

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
3-6	Hand Soldering Method	Use a soldering iron that has a sufficient head capacity and high stability of temperature. The tip of the iron should be shaped so as not to touch the part body directly. Temperature : 380±10℃ 3s	Appearance : No damage	Sample	No damage
				1	OK
				2	OK
				3	OK
				4	OK
				5	OK
3-7	Heat aging	Subject unmated connectors to temperature life at 85℃±2℃ for 96 hours. Test as per EIA 364 – 17 Test Condition Ⅲ Method A.	Appearance: No damage Contact resistance: Less than 60 mΩ	Sample	
				1	OK
				2	OK
				3	OK
				4	OK
				5	OK
				Sample	＜ 60 mΩ.
				1	11.50 mΩ
				2	12.41 mΩ
				3	12.66 mΩ
				4	12.38 mΩ
				5	12.12 mΩ
3-8	Humidity	Subject unmated connectors to 96 hours at 40℃ with 90% to 95% RH. Test as per EIA 364 – 31 Method Ⅱ Test Condition A.	Appearance: No damage	Sample	
				1	OK
				2	OK
				3	OK
				4	OK
				5	OK
			Contact resistance : Less than 60 mΩ	Sample	＜ 60 mΩ.
				1	11.44 mΩ
				2	11.71 mΩ
				3	11.65 mΩ
				4	11.91 mΩ
				5	11.63 mΩ

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
3-8	Humidity	Subject unmated connectors to 96 hours at 40℃ with 90% to 95% RH. Test as per EIA 364 – 31 Method Ⅱ Test Condition A.	Insulation resistance More than 1000 MΩ	Sample	＞1000 MΩ.
				1	＞1000 MΩ
				2	＞1000 MΩ
				3	＞1000 MΩ
				4	＞1000 MΩ
				5	＞1000 MΩ
3-9	Temperature cycling	Subject unmated connectors shall be tested in accordance with EIA364–32 Test Condition Ⅰ. (1)-55℃,30 minute (2)+25℃,5 minute (3)+85℃,30 minute (4)+25℃,5 minute consecutive 10 cycles.	Appearance : No damage	Sample	
				1	OK
				2	OK
				3	OK
				4	OK
				5	OK
			Contact resistance: 60 mΩ Max.	Sample	＜ 60 mΩ.
				1	14.3 mΩ
				2	15.5 mΩ
				3	15.1 mΩ
				4	14.8 mΩ
				5	13.9 mΩ

4. AMBIENT TEMPERATURE RANGE: -40 to + 85°C