

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: CF50321D0RE-05-NH

DATE OF TESTING : 2015/7/21

TEST DEPART : R&D

LOT Number:

CONTAIN : ATTACHED

TEST RESULT: ACCEPT REJECT



APPROVE BY: Eisley

CHECKED By: Eisley

TESTER BY: Hank

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**1.ELECTRICAL PERFORMANCE :**

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
1-1	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
1-2	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
1-3	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	9.48 mΩ
				2	9.55 mΩ
				3	9.61 mΩ
				4	9.40 mΩ
				5	9.38 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. 32PIN X 0.03Kgf = 0.96Kgf	Sample	>0.96Kgf
				1	1.224 Kgf
				2	1.189 Kgf
				3	1.238 Kgf
				4	1.245 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	0.382 Kgf
				2	0.374 Kgf
				3	0.355 Kgf
				4	0.322 Kgf
				5	0.389 Kgf

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	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	0.45 Kgf
				2	0.52 Kgf
				3	0.48 Kgf
				4	0.50 Kgf
				5	0.44 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	11.12 mΩ
				2	12.84 mΩ
				3	12.41 mΩ
				4	12.60 mΩ
			FFC/FPC Retention Force: 0.03 Kgf/Pin min. 32PIN X 0.03Kgf = 0.96Kgf	Sample	> 0.96Kgf
				1	1.088 Kgf
				2	1.112 Kgf
				3	1.062 Kgf
4	1.044 Kgf				
5	1.100 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 °C max.
				1	27 °C
				2	28 °C
				3	28 °C
				4	28 °C
				5	27 °C

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	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
				Sample	
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		No damage
				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		No damage
				1	OK
				2	OK
				3	OK
				4	OK
				5	OK
3-4	Solder ability	Steam age 1 hour at 90°C ~96°C Solder time to be 5±1 seconds at 245°C±5°C, using unactivated flux. ( EIA364-52 )	Minimum: 95% of immersed area		
				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		No damage
				1	OK
				2	OK
				3	OK
				4	OK
				5	OK
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°C 3s	Appearance : No damage		No damage
				1	OK
				2	OK
				3	OK
				4	OK
				5	OK

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ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT		
3-7 Heat aging	Subject unmated connectors to temperature life at 85°C±2°C 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	11.49 mΩ	
			2	12.44 mΩ	
			3	12.88 mΩ	
			4	12.25 mΩ	
			5	12.12 mΩ	
			3-8 Humidity	Subject unmated connectors to 96 hours at 40°C with 90% to 95% RH. Test as per EIA 364 – 31 Method II Test Condition A.	Appearance: No damage
1	OK				
2	OK				
3	OK				
4	OK				
5	OK				
Contact resistance : Less than 60 mΩ	Sample	< 60 mΩ.			
	1	11.84 mΩ			
	2	12.83 mΩ			
	3	12.72 mΩ			
	4	12.44 mΩ			
Insulation resistance More than 1000 MΩ	Sample	> 1000 MΩ.			
	1	> 1000 MΩ			
	2	> 1000 MΩ			
	3	> 1000 MΩ			
	4	> 1000 MΩ			
5	> 1000 MΩ				

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	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
				Sample	
3-9	Temperature cycling	Subject unmated connectors shall be tested in accordance with EIA364-32 Test Condition I . (1)-55°C,30 minute (2)+25°C,5 minute (3)+85°C,30 minute (4)+25°C,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	14.89 mΩ
				2	15.76 mΩ
				3	15.88 mΩ
4	14.74 mΩ				
5	15.53 mΩ				

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