



ENGINEERING DEPT.		PRODUCT SPECIFICATION For Solder & Straight Dip D-Sub Connector of system CD13	SPEC.NO.: SPCD046B
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1. SCOPE:

This specification contains the test requirement of subject connectors when tested under the condition and below standards base on CviLux test procedure

2. APPLICABLE STANDARDS:

MIL - STD - 202	Methods for test of connectors for electronic equipment
EIA-364	Test methods for electrical connectors
SS-00254	Test methods for electronic components, LEAD-FREE soldering Part design standards

3. APPLICABLE SERIES NO.: **CD1315S*100-R**

4. SHAPE, CONSTRUCTION AND DIMENSIONS

See attached drawings

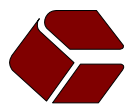
5. MATERIALS

See attached drawings

6. ACCOMMODATED P.C.BOARD

1.6 mm (.063")

REVIEWED : Eisley APPROVED : Sun VERIFIED : Jessie .



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7. ELECTRICAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT	
7.1	Rated current and voltage		3A 250V AC (r.m.s.)	
7.2	Contact resistance	Dry circuit of DC 20 mV max. , 100 mA max. Per EIA-364-23	Less than 25 mΩ (Initial) △R: Less than 10 mΩ (Final)	
7.3	Dielectric strength	Apply 1000 V AC (RMS) for 1 minute between the adjacent contacts, and between the contacts and ground in the un-mated connector assemblies. Per EIA-364-20	No breakdown Current leakage< 0.5mA	
7.4	Insulation resistance	Apply a voltage 500 V DC for 1 minute between the adjacent contacts, and between the contacts and ground in the un-mated connector assemblies. Per EIA-364-21	More than 5000 MΩ	

8. MECHANICAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT	
8.1	Single contact insertion force	Mate connector at a rate of 25±6mm (1±1/4inch) per minute. Per EIA-364-13	0.341 kgf max.	
8.2	Single contact withdrawal force	Mate connector at a rate of 25±6mm (1±1/4inch) per minute. Per EIA-364-13	0.021 kgf min.	
8.3	Durability	Mate and unmated connectors up to 500 cycles at a maximum rate of 100 cycles per hour prior to Environmental tests. Per EIA-364-09	Appearance: No damage Contact resistance: △R: Less than 10 mΩ (Final)	
8.4	Mating and Un-mating force	Mate connector at a rate of 25±6mm (1±1/4inch) per minute. Per EIA-364-13	Mating (Max.)	Un-mating (Min.)
			6.0 kgf	1.2 kgf

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9. ENVIRONMENTAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT
9.1	Temperature rise	Mate connectors: measure the temperature rise at the current rate 3A. Per EIA-364-70	ΔT : 30 °C max.
9.2	Vibration (Random)	Test condition: Random. Frequency range: 10 Hz to 500 Hz PSD value: 15 G RMS minimum. Duration: 15 minutes in each X, Y, Z axis. Per EIA-364-28 Condition V Test letter B	Appearance: No damage Discontinuity: 1 micro second max. Contact resistance: ΔR : Less than 10 m Ω (Final)
9.3	Mechanical Shock	Wave form: Trapezoidal wave form. Peak acceleration: 30 G's. Duration: 11ms Quantity: three drops in each of six directions. Total 18 drops per connector. Per EIA-364-27 Condition A	Appearance: No damage Discontinuity: 1 micro second max. Contact resistance: ΔR : Less than 10 m Ω (Final)
9.4	Solder ability	Steam age for 1 hour non-activated flux. Soldering time: 5 $\pm$ 0.5 second Soldering temperature: 245 $\pm$ 5 °C Per EIA-364-52	Minimum: 95% of immersed area
9.5	Resistance to soldering heat	Dip connector terminal tails in solder: Soldering Duration: 10 $\pm$ 0.5 seconds Soldering temperature: 260 $\pm$ 5 °C See 11. wave solder profile (Figure.1) Per EIA-364-56	No Damage or discoloration of connector materials.
9.6	Temperature Aging	Mate connectors; expose to : 250 hours at 105 $\pm$ 3 °C Per EIA-364-17 Test condition 3 Method A	Appearance: No damage Contact resistance: ΔR : Less than 10 m Ω (Final)



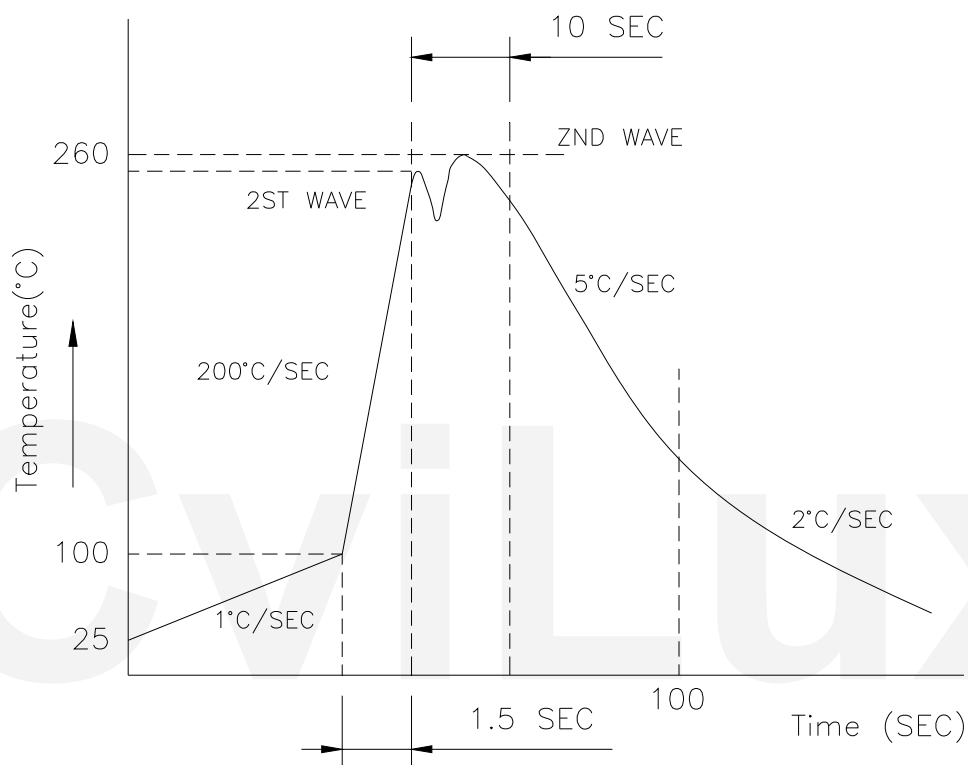
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	ITEM	TEST CONDITION	REQUIREMENT
9.7	Thermal Shock	Mate connectors; expose to 5 cycles of: Temperature °C , Duration (Minutes) (1) -55 ⁺⁰ ₋₃ °C , 30 min. (2) +25±10 °C , 5 max. (3) +85 ⁺³ ₋₀ °C , 30 min. (4) +25±10 °C , 5 max. Per EIA-364-32 Test Condition I	Appearance: No damage Contact resistance: △R: Less than 10 mΩ (Final)
9.6	Humidity	Subject mated connectors should be tested according to the condition listed below : Temperature : 25~65°C Humidity : 90-95% (R.H) Duration : 96 hours Per EIA-364-31 Method III Test Condition B	Appearance: No damage Contact resistance: △R: Less than 10 mΩ (Final) Dielectric strength: To pass para7-3 Insulation resistance: More than 5000 MΩ
9.8	Salt spray	Temperature: 35 ± 3 °C Solution: 5 ± 1% Spray time: 48 ± 4 hours (Stamping before plated) Spray time: 24 ± 4 hours (Stamping after plated) Mate connectors and expose to the following salt mist conditions. Upon completion of the exposure period, salt deposits shall be removed by a gentle wash or dip in running water and dried naturally, after which the specified measurements shall be performed. The specimens shall be suspended from the top using waxed twine, string or nylon thread. The test only define the plating area, without plating area (as copper cross section) will not be defined. EIA 364-26B / MIL-STD-202 Method 101	Appearance: No damage Contact resistance: △R: Less than 10 mΩ (Final)

10. OPERATING TEMPERATURE RANGE: -55 ~ +75 °C

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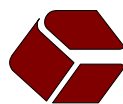
11. Recommended Wave Solder Profile (Lead-free)



Profile Feature	Pb-Free System
Average Ramp-Up Rate	200°C / second
Heating rate during preheat	Typical 1-2,max 4°C / sec
Final preheat temperature	Within 125°C of solder temp
Peak Temperature	260°C
Time within +0~5°C of actual peak	10 seconds
Ramp-Down Rate	5°C / seconds max

Figure 1. Recommended Wave Solder Profile

12. PRODUCT QUALIFICATION TEST SEQUENCE



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Test or Examination	Test Group						
	A	B	C	D	E	F	G
	Test SEQUENCE (a)						
Examination of product	1,7	1,14	1,7	1,3	1,3	1,6	1,3
Contact Resistance	2,6	2,7,11	2,5			2,5	
Dielectric strength		4,13					
Insulation Resistance		3,12					
Temperature Rise							2
Mating / Un-mating Force	3,5	5,8	3,6				
Durability		6					
Vibration (Random)						3	
Mechanical Shock						4	
Solder ability					2		
Resistance to Soldering Heat				2			
Temperature Aging	4						
Thermal Shock		9					
Humidity		10					
Salt Spray			4				

NOTE: (a) Numbers indicate sequence in which tests are performed.

(b) Discontinuities shall not take place in this group, during tests.