ENGINEERING DEPT.		PRODUCT SPECIFICATION	SPEC.NO.: SPCVS003C
REVISIONS	ECNT117158	For CVS3 Series Connector System	PAGE: 1/13

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

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

SERIES NO. : CVS3502M1RM-NH SERIES

DATE OF TESTING : 01/21/2016”

TEST DEPART : R & D

LOT Number:

CONTAIN :

TEST RESULT: ■ACCEPT □REJECT

APPROVE BY: Eisely CHECKED By: Clark TESTER BY: Clark

A.

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
1	Examination of Product		No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
2	Insertion Force	Measure the force necessary to insert the connector between male and female at a maximum rate of 12.5 mm per minute. Test as per EIA364-13	50P:8.5 Kgf max.	Sample	< 8.5 Kgf
				1	4.98 Kgf
				2	5.08 Kgf
				3	5.02 Kgf
				4	4.92 Kgf
				5	4.95 Kgf
3	Low level 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	Initially : Less than 80 mΩ Finally: Less than 100 mΩ	Sample	< 80 mΩ.
				1	53.23 mΩ
				2	52.86 mΩ
				3	53.24 mΩ
				4	53.35 mΩ
				5	53.88 mΩ
4	Removal Force	Measure the force necessary to insert the connector between male and female at a maximum rate of 12.5 mm per minute. Test as per EIA364-13	50P:1.4 Kgf max.	Sample	> 1.4 Kgf
				1	1.72 Kgf
				2	1.78 Kgf
				3	1.76 Kgf
				4	1.81 Kgf
				5	1.84 Kgf
5	Durability	The connector shall be subject to 20 cycles for insertion and extraction .Test done at a maximum rate of 200 cycles per hour. Test as per EIA364-09	Appearance: No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
			Contact resistance: Less than 100 mΩ	Sample	< 100 mΩ
				1	53.89 mΩ
				2	54.01 mΩ
				3	53.95 mΩ
				4	53.74 mΩ
				5	53.66 mΩ

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
6	Insertion Force	Measure the force necessary to insert the connector between male and female at a maximum rate of 12.5 mm per minute. Test as per EIA364-13	50P:8.5 Kgf max.	Sample	< 8.5 Kgf
				1	4.07 Kgf
				2	4.32 Kgf
				3	4.48 Kgf
				4	3.92 Kgf
				5	3.95 Kgf
7	Low level 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	Initially : Less than 80 mΩ Finally: Less than 100 mΩ	Sample	< 100 mΩ.
				1	53.43 mΩ
				2	52.88 mΩ
				3	53.38 mΩ
				4	53.45 mΩ
				5	53.88 mΩ
8	Removal Force	Measure the force necessary to insert the connector between male and female at a maximum rate of 12.5 mm per minute. Test as per EIA364-13	50P:1.4 Kgf max.	Sample	> 1.4 Kgf
				1	1.52 Kgf
				2	1.61 Kgf
				3	1.56 Kgf
				4	1.48 Kgf
				5	1.62 Kgf
9	Examination of Product		No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass

B.

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
1	Examination of Product		No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
2	Low level 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	Initially : Less than 80 mΩ Finally: Less than 100 mΩ	Sample	< 80 mΩ.
				1	53.42 mΩ
				2	52.75 mΩ
				3	53.32 mΩ
				4	53.56 mΩ
				5	53.71 mΩ
3	Insulation resistance	After 250 VDC for 1 minute , measure the insulation resistance between the adjacent contacts. Test as per EIA364-21	More than 100 MΩ	Sample	> 100 MΩ
				1	18×10^4 MΩ
				2	18×10^4 MΩ
				3	17×10^4 MΩ
				4	17×10^4 MΩ
				5	18×10^4 MΩ
4	Dielectric Withstanding Voltage	Test between adjacent contacts with a voltage of 150 VAC for 1 minute at Sea level. Test as per EIA364-20 Method B	No current leakage And flashover or Damage detected	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
5	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	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
6	Low level 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	Initially : Less than 80 mΩ Finally: Less than 100 mΩ	Sample	< 100 mΩ
				1	53.85 mΩ
				2	53.79 mΩ
				3	53.88 mΩ
				4	53.84 mΩ
				5	54.09 mΩ
7	Insulation resistance	After 250 VDC for 1 minute , measure the insulation resistance between the adjacent contacts. Test as per EIA364-21	More than 100 MΩ	Sample	> 100 MΩ
				1	5×10^4 MΩ
				2	4×10^4 MΩ
				3	4×10^4 MΩ
				4	4×10^4 MΩ
				5	6×10^4 MΩ
8	Dielectric Withstanding Voltage	Test between adjacent contacts with a voltage of 150 VAC for 1 minute at Sea level. Test as per EIA364-20 Method B	No current leakage And flashover or Damage detected	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
9	Examination of Product		No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass

C.

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
1	Examination of Product		No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
2	Low level 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	Initially : Less than 80 mΩ Finally: Less than 100 mΩ	Sample	< 80 mΩ.
				1	53.14 mΩ
				2	52.99 mΩ
				3	53.36 mΩ
				4	53.41 mΩ
				5	53.78 mΩ
3	Temperature Life (Heat aging)	Subject mated connectors to temperature life at 85±5℃ for 250 hours. Test as per EIA 364-17 Test Condition 3 Method A.	Appearance : No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
4	Low level 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	Initially : Less than 80 mΩ Finally: Less than 100 mΩ	Sample	100 mΩ max.
				1	54.05 mΩ
				2	53.82 mΩ
				3	54.13 mΩ
				4	53.52 mΩ
				5	54.18 mΩ
5	Examination of Product		No damage .	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass

D.

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
1	Examination of Product		No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
2	Low level 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	Initially : Less than 80 mΩ Finally: Less than 100 mΩ	Sample	< 80 mΩ.
				1	53.15 mΩ
				2	52.68 mΩ
				3	52.74 mΩ
				4	53.21 mΩ
				5	53.32 mΩ
3	Salt Spray	Unmated connectors shall be tested in accordance with EIA364-26 Condition B. Temperature： 35℃ +1℃/-2℃ Density：5% in weight Duration：48 hours	Appearance of contact area shall be no rusted or erodent.	Sample	No rusted
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
4	Low level 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	Initially : Less than 80 mΩ Finally: Less than 100 mΩ	Sample	< 100 mΩ
				1	54.78 mΩ
				2	54.65 mΩ
				3	54.62 mΩ
				4	54.42 mΩ
				5	54.84 mΩ
5	Examination of Product		No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass

E.

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
1	Examination of Product		No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
2	Low level 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	Initially : Less than 80 mΩ Finally: Less than 100 mΩ	Sample	< 80 mΩ.
				1	54.21 mΩ
				2	53.65 mΩ
				3	52.69 mΩ
				4	54.76 mΩ
				5	53.33 mΩ
3	Insulation resistance	After 250 VDC for 1 minute , measure the insulation resistance between the adjacent contacts. Test as per EIA364-21	More than 100 MΩ	Sample	> 100 MΩ
				1	17×10^4 MΩ
				2	17×10^4 MΩ
				3	17×10^4 MΩ
				4	18×10^4 MΩ
				5	18×10^4 MΩ
4	Dielectric strength	Test between adjacent contacts with a voltage of 150 VAC for 1 minute at Sea level. Test as per EIA364-20 Method B	No current leakage And flashover or Damage detected.	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
5	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 5 cycles..	Appearance : No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
6	Low level 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	Initially : Less than 80 mΩ Finally: Less than 100 mΩ	Sample	< 100 mΩ
				1	53.74 mΩ
				2	53.65 mΩ
				3	53.92 mΩ
				4	53.62 mΩ
				5	54.08 mΩ
7	Insulation resistance	After 250 VDC for 1 minute , measure the insulation resistance between the adjacent contacts. Test as per EIA364-21	More than 100 MΩ	Sample	> 100 MΩ
				1	5×10^4 MΩ
				2	6×10^4 MΩ
				3	6×10^4 MΩ
				4	5×10^4 MΩ
				5	5×10^4 MΩ
8	Dielectric Withstanding Voltage	Test between adjacent contacts with a voltage of 150 VAC for 1 minute at Sea level. Test as per EIA364-20 Method B	No current leakage And flashover or Damage detected	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
9	Examination of Product		No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass

F.

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
1	Examination of Product		No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
2	Solder ability	Steam age 1 hour at 90℃～96℃ Solder time to be 5±1 seconds at 245℃, using unactivated flux. Test as per EIA364-52	Minimum: 95% of immersed area	Sample	95% of
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
3	Examination of Product		No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass

G.

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
1	Examination of Product		No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
2	Soldering Heat Withstanding	Reflow soldering(Infrared): Refer soldering method The conditions specified on paragraph 10 shell be repeated twice.	Inspect dimension during the test, no physical damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
3	Examination of Product		No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass

H.

	ITEM	TEST CONDITION	REQUIREMENT	TEST RESULT	
1	Examination of Product		No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
2	Vibration	Subject mated connectors to ： Power spectral density：0.02 g^2/Hz Overall RMS .g：5.35 Duration：15 minute in each X.Y.Z. axis mutually perpendicular planes. Test as per EIA 364 – 28 Condition V Test letter A.	Appearance: No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
			Discontinuity : 1 Micro second max.	Sample	1 micro second
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
3	Physical Shock	Subject mated connectors to 30 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. Test as per EIA364-27 condition H	Appearance : No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
			Discontinuity : 1 Micro second max.	Sample	1 micro second
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
4	Examination of Product		No damage	Sample	No damage
				1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass

Test of description \ Test Group		A	B	C	D	E	F	G	H
1	Examination of Product	1,9	1,9	1,5	1,5	1,9	1,3	1,3	1,4
2	Low level Contact Resistance	3,7	2,6	2,4	2,4	2,6			
3	Dielectric Withstanding Voltage		4,8			4,8			
4	Insulation Resistance		3,7			3,7			
5	Insertion Force	2,6							
6	Removal Force	4,8							
7	Durability	5							
8	Humidity		5						
9	Temperature Life			3					
10	Salt Spray				3				
11	Thermal shock (Temperature cycling)					5			
12	Solderability						2		
13	Soldering Heat withstanding							2	
14	Random vibration								2
15	Physical shock								3