



PRODUCT SPECIFICATION  
CKM 2542 SERIES(Pb FREE)  
2.54mm PITCH CONNECTOR

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REVISION HISTORY:

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A	NEW RELEASE	2022.05.10	Jimmy Wang

<b>REVISION:</b> <b>A</b>	<b>ECR/ECN INFORMATION:</b> EC No.: DATE: 2022.05.10	<b>TITLE:</b> 2.54mm PITCH CONNECTOR	<b>SHEET No.</b> 1 of 5
<b>DOCUMENT NUMBER:</b> <b>SP-2542-002</b>		<b>CREATED/REVISED</b> Jimmy Wang	<b>CHECKED BY</b> Sun Lee
		<b>APPROVED BY</b> Ivan Su	



### 1.0. SCOPE

This product specification covers performance, tests and quality requirements for **2542 Connector System** When tests are performed on subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using the applicable product drawing.

### 2.0. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. In the event of conflict between the requirements of the specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

#### 2.1. APPLICABLE DOCUMENTS AND SPECIFICATIONS

- EIA-364
- UL-94 Flammability

### 3.0. REQUIREMENTS

#### 3.1 Design and Construction

Product shall be of the design, construction and physical dimensions specified on the applicable product drawing

#### 3.2 Material

Materials used in the construction of this product shall be as specified on the applicable product drawing

#### 3.3 Ratings

1. Voltage: 250V AC (rms) / DC
2. Current: 22AWG-3A; 24AWG-2A;  
26AWG-1A; 28AWG-0.8A
3. Operating Temperature: -40 to 105°C

#### 3.4 Performance and Test Description.

Product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

#### 3.5 Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Initial examination of product.	Meets requirements of product drawing and Application.	EIA-364-18. Visual and dimensional (C of C) inspection per product drawing.
Final examination of product.	Meets visual requirements.	EIA-364-18. Visual inspection.
<b>ELECTRICAL REQUIREMENT</b>		
Low Level Contact Resistance (LLCR).	10mΩ max. initial. 20mΩ max. final.	EIA-364-23. Subject specimens to 100mA max. and 20mV max. open circuit voltage. See Figure 3.

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Insulation resistance.	1000MΩ min. initial. 500MΩ min. final.	EIA-364-21. 500VDC, 2 minute hold. Test between adjacent contacts.
Withstanding voltage.	1 minute hold with no breakdown or flashover. 1.3mA max. leakage current.	EIA-364-20, Condition I. 800VAC at sea level. Test between adjacent contacts.
Temperature rise	30°C max. Temperature rise at specified current.	EIA-364-70, Method 1. Stabilize at a single current level until 3 readings at 5 minute intervals are within 1°C.

**MECHANICAL REQUIREMENT**

Durability	See Note.	EIA-364-9. Manually mate and unmate specimens with companion headers for 30 cycles at a max. rate of 500 cycles per hour.
Mating force.	4.5N max. per contact.	EIA-364-13. Measure force necessary to mate specimens with companion headers at a maximum rate of 12.7mm per minute.
Un mating force.	0.5N min. per contact.	EIA-364-13. Measure force necessary to un mate specimens from companion headers at a maximum rate of 12.7mm per minute.
Crimp tensile.	Before dipping in tin 1.0kg min. After dipping in tin 0.5kg min.	EIA-364-8. Determine crimp tensile at a rate of 25.4mm per minute.
Pin Retention Force	1.0kg min.	EIA-364-29. Apply axial load at max. rate of 25.4mm per minute until dislodged.

**ENVIRONMENTAL**

Solder ability	The contact solder tails should be covered by a continuous new solder coating for min 95% of affected area.	Subject contacts to solderability testing ,as specified solder transfer at 245±5°C for 3±0.5s.
Soldering iron method	No damage	Apply solder iron in solder tail Temperature: 350±10°C, 3 sec.
Resistance to Wave Soldering Heat	No physical damage shall occur.	Subject product mounted on printed circuit board to solder bath at 260±5°C for 5s±0.5s.

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Thermal shock.	See Note.	EIA-364-32, Test condition VIII, 5 cycles at -40°C to +105°C.
Humidity cycling.	See Note.	EIA-364-31, Method III. 40°C at 95% RH. for 96 hours.
Temperature life.	See Note.	EIA-364-17, Method A, Test Condition 4, Test Time Condition C. Subject mated specimens to 105°C for 96 hours.
Salt Spray	See Note.	EIA-364-26, Mated connector shall be placed on a salt spray chamber on the following conditions Salt Solution Density : 5±1% Temperature : 35±1°C Duration : 24Hours

Figure 1(End)

**NOTE**

Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown in Figure2.

**Test Sequence**

Test or Examination	Test Group (a)					
	1	2	3	4	5	6
	Test Sequence (b)					
Initial examination of product	1	1	1	1	1	1
LLCR	4.6	2.6			2.4	2.6
Insulation resistance		3.7	2.5			3.7
Withstanding voltage		4.8	3.6			4.8
Temperature rise vs current				2		
Solder ability dip test						
Durability	5					
Mating force	2					
Un mating force	3					
Crimp tensile						
Contact retention				3		
Thermal shock		5				
Humidity cycling			4(c)			
Temperature life						5
Salt Spray					3	
Final examination of product	7	9	7	4	5	9

Figure 2

**NOTE:**

- (a) See paragraph 4.1.A.
- (b) Numbers indicate sequence in which tests are performed.
- (c) Precondition specimens with 10 durability cycles.

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**4. QUALITY ASSURANCE PROVISIONS**

4.1 Qualification Testing

A. Specimen Selection

Specimens shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. Test groups 1, 2, 3 and 5 shall each consist of a minimum of 5 specimens with a minimum of 30 data points. Test group 4 shall consist of a minimum of 5 specimens with a minimum of 30 header posts

B. Test Sequence

Qualification inspection shall be verified by testing specimens as specified in Figure 2.

4.2 Requalification Testing

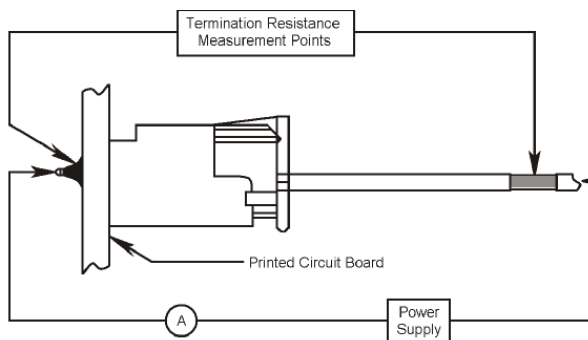
If changes significantly affecting form, fit or function are made to the product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by development/product, quality and reliability engineering.

4.3 Acceptance

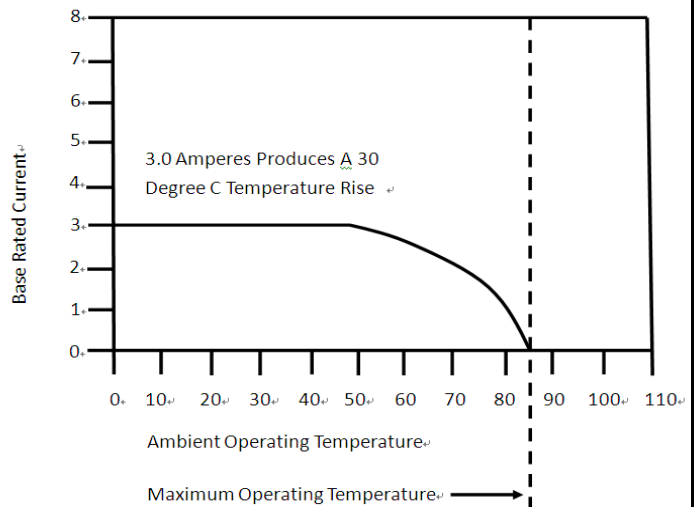
Acceptance is based on verification that the product meets the requirements of Figure 1. Failures attributed to equipment, test setup or operator deficiencies shall not disqualify the product. If product failure occurs, corrective action shall be taken and specimens resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

4.4 Quality Conformance Inspection

The applicable quality inspection plan shall specify the sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with the applicable product drawing and this specification.



**Figure 3**  
**LLCR Measurement Points**



**Figure 4**  
**Current Rating**

**NOTE:**

To determine acceptable current carrying capacity for percentage connector loading and wire gage indicated, use the Multiplication Factor (F) from the above chart and multiply it times the Base rated Current for a single circuit at the maximum ambient operating temperature shown in Figure 4.

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