
TE socket type LK

DESIGN OBJECTIVES

The product described in this document has not been fully tested to ensure conformance to the requirements outlined below. Therefore, TE Connectivity (TE) makes no representation or warranty, express or implied, that the product will comply with these requirements. Further, TE may change these requirements based on the results of additional testing and evaluation. Contact TE Engineering for further details.

1. SCOPE**1.1. Content**

This specification covers performance, tests and quality requirements for TE Connectivity type LK socket.

1.2. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest revision of the document applies. In the event of conflict between the requirements of this 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.

1.3. Tyco Electronics Documents

- 114-32038: Application Specification
- 501-19182: Qualification Test Report.
- 2173470 Product Drawing.
- TE Connectivity Specification 109-1: General requirements for Test Specifications.

1.4. Commercial Standards

- EIA-364: Electrical Connector/Socket Test Procedures Including Environmental Classifications

TE socket type LK

2. REQUIREMENTS AND TESTING PROCEDURE.

SAMPLE PREPARATION

The samples for testing must be selected at random from the current production and shall be in accordance with relevant drawings. All samples shall be stored during 1 day at 50% Relative Humidity.

SAMPLE COMPOSITION

Each test group shall consist of 10 connectors.

2.1. Ratings

The applicable wires are AWG 22 stranded and solid wire, and AWG 24, solid wire.

Performance	Value	Unit
Operating Temperature	-40 to ≤ 125	°C
Max Voltage	75	V DC
Max Current	Tbd*	A

*Note: Target is 1.5 A and value will be finalized when 501 report is issued.

2.2. Performance and Test Description

Product is designed to meet the electrical, mechanical and environmental performance requirements specified in Par. 3.5. Unless otherwise specified, all tests shall be performed at ambient environmental conditions per EIA-364.

2.3. Test Requirements and procedures.

1. PRODUCT EXAMINATION		
TEST	REQUIREMENT	PROCEDURE
1.2 Visual Examination	The product shall not have visible marks of damage, break or defect before and after the execution of the tests.	EIA-364-18.

TE socket type LK

2. MECHANICAL REQUIREMENTS		
TEST	REQUIREMENT	PROCEDURE
2.1 Cable retention force	4 N minimum	EIA-364-13, Method A, Testing speed 25mm/min.
2.2 Contact normal force of LED contact spring		EIA-364-13, Method B, testing speed 10mm/min.
2.3 Mechanical operation	No evidence of physical damage Fig.1	EIA-364-09, perform 5 mating cycles with LED contact
2.4 Vibration Test	No electrical discontinuity >1μsec shall occur. No physical damage.	EIA-364-28, Test Condition VII, Condition D. Subject mated specimens to 3.10 g rms between 20-500 Hz. 15 minutes in each of 3 mutually perpendicular axes.
2.5 Mechanical Shock	No electrical discontinuity > than 1μsec shall occur. No physical damage.	EIA-364-27, Method A. Subject mated specimens to 50 g half- sine shock pulses of 11 milliseconds duration. 3 shocks in each direction of 3 mutually perpendicular axes, 18 shocks in total.

3. ELECTRICAL REQUIREMENTS		
TEST	REQUIREMENT	PROCEDURE
3.1 Low Level Contact Resistance	25 milliohms maximum. Fig. 2	EIA-364-23. max. open voltage 20 mV, max. current 100 mA.
3.2 Temperature rise versus current curve	$\Delta T < 30^{\circ}\text{C}$ at 1.5 A See fig. 1	EIA 364-70, Method 2
3.3 Voltage proof	One minute hold with no breakdown or flashover See fig. 3	EIA 364-20, Method A, 3000V DC Test between contact vs ground plate. See fig 3.
3.4 Insulation resistance	>500 MΩ See fig. 3	EIA 364-21, 500 V DC for 1 minute. Test between Contact vs ground plate

TE socket type LK

4. ENVIRONMENTAL REQUIREMENTS		
<i>TEST</i>	REQUIREMENT	<i>PROCEDURE</i>
4.1 Temp life	LLCR No evidence of physical damage	EIA-364-17, Method A, Test Condition 5, Subject mated specimens to 125°C for 500 hours.
4.2 Thermal shock	LLCR No evidence of physical damage See Fig. 3	EIA-364-32, Method A Test Condition VIII Subject specimens to 25 cycles between -40 and 125°C with 30 minute dwells at temperature extremes and 1 minute transition between temperatures.
4.3 Damp heat cycling		EIA-364-31, Method III. Subject specimens to 10 cycles (10 days) between 25 and 65°C at 80 to 100% RH.

TE socket type LK

3. TEST SEQUENCES.

	SAMPLE DESCRIPTION	TEST GROUPS				
		1	2	3	4	5
	Wire 22 AWG solid	10	10	10	10	10
	Wire 24 AWG solid	10	10	10	10	10
	Wire 22 AWG stranded	10	10	10	10	10
TEST	DESCRIPTION					
1	Visual examination	1,5	1,9	1,6	1,8	1,5
2.1	Cable retention	4				
2.2	Contact normal force	2				
2.3	Mechanical operation	3				
2.4	Vibration test			2		
2.5	Mechanical Shock			4		
3.1	LLCR		2,4,6,8	3,5	2,7	2,4
3.2	Temperature Rise / Derating				3	
3.3	Voltage proof				4	
3.4	Insulation resistance				5	
4.1	Temp life		7		6*	
4.2	Thermal shock		3			3**
4.3	Damp Heat Cycling		5			

Note:

* In testgroup 4 the duration of the temp life test will be extended till 1000 hrs. Measurements done at 250 hrs. interval.

** In testgroup 5 the duration of the thermal shock test will be extended till 1000 cycles. Measurements done at 250 cycles interval.

TE socket type LK

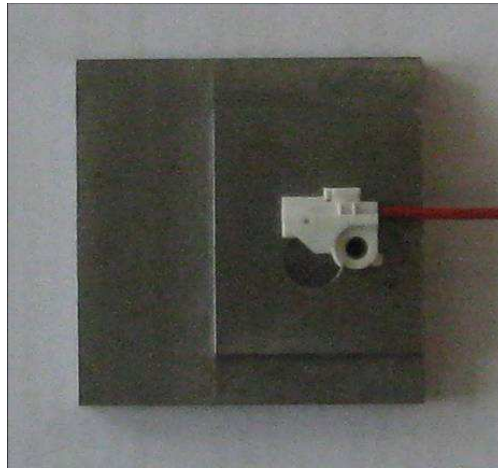


Fig 1.
Fixture for mechanical and voltage tests

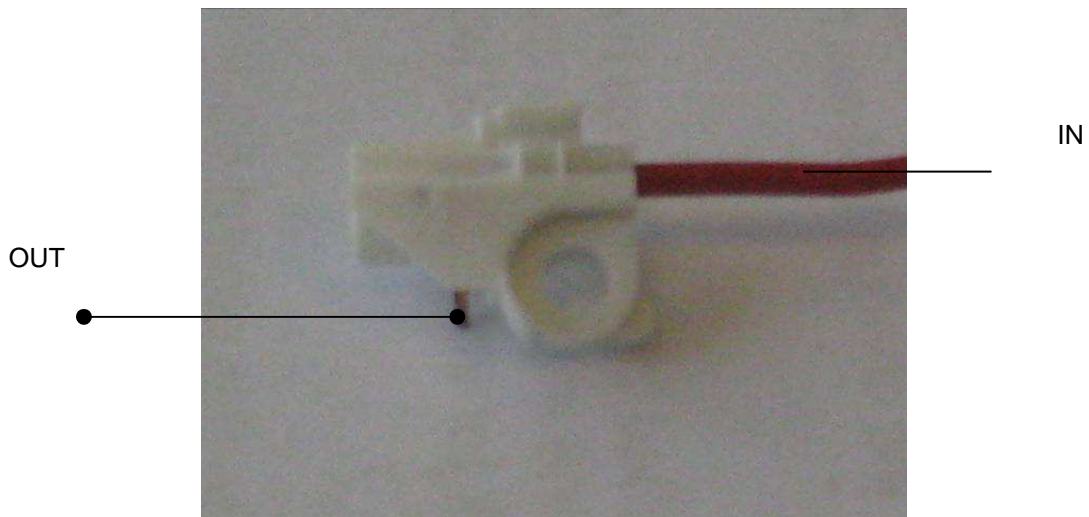


Fig. 2
LLCR test setup

TE socket type LK

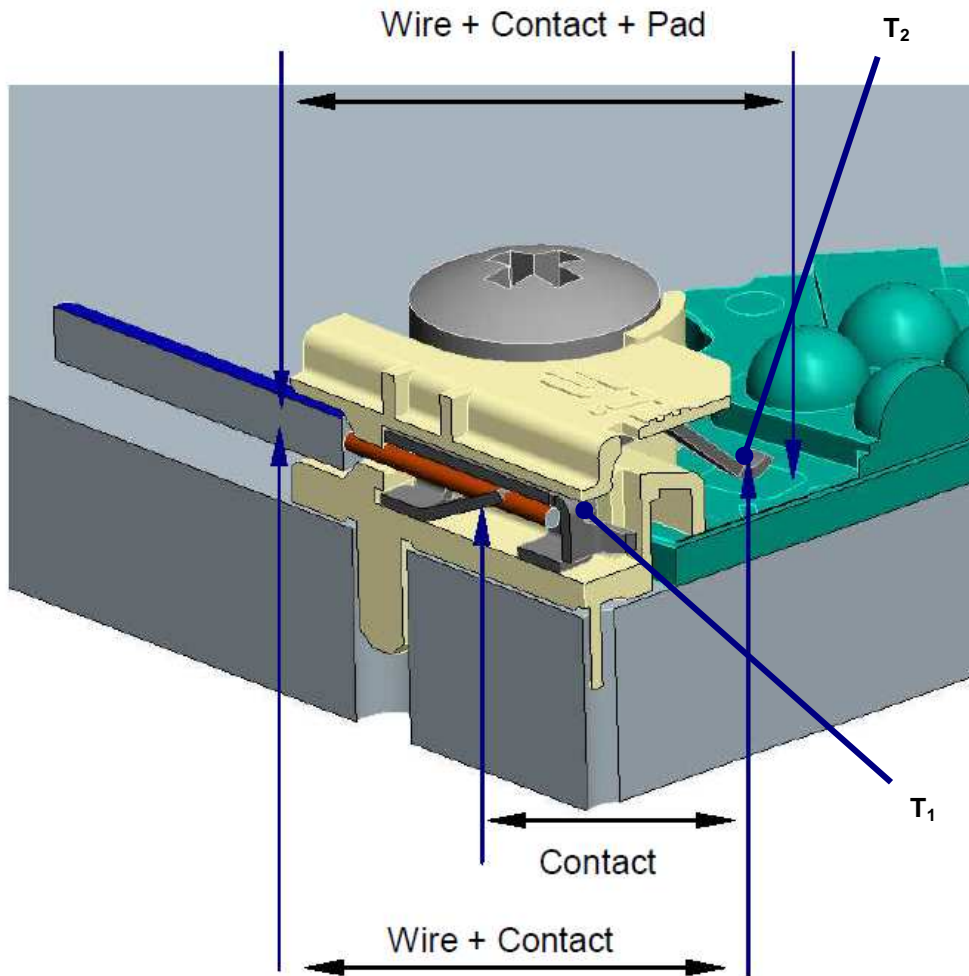


Fig. 3

Measure T_1 and T_2 location for the Temperature rise test

NOTE