The Z45 Platform containing the part numbers X-2325807-X and X-2325811-X 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. The Z35 Platform has completed qualification testing per the 501-19231 document listed in Section 2.1 of this document.

Mini CoB LED Holder Platform

1. SCOPE

1.1. Content

This specification covers performances, tests and quality requirements of the Mini CoB LED Holder Platform with part numbers X-2213678-X & X-2213929-X applied according application specification 114-133062. Part numbers X-2325807-X and X-2325811-X applied per app specification 114-133107.

1.2. Qualification

When tests are performed on the subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

1.3. Qualification Test Results

Successful qualification testing on the subject product line has not been completed. The Qualification Test Report number will be issued upon successful qualification testing.

2. APPLICABLE DOCUMENTS AND FORMS

The following documents and forms constitute a part of this specification to the extent specified herein. Unless otherwise indicated, the latest edition of the document applies.

2.1. TE Documents

- 114-133062: Application Specification for Z35 Platform
- 114-133107: Application Specification for Z45 Platform
- 114-32208: LUMAWISE LED Holders (for cross-reference of LED holders & customer COBs)
- 501-19231: Qualification Test Report – Z35 Platform
- 502-134277: Engineering Test Report – Z45 Platform

2.2. Industry Documents

- UL 8754: UL Standard for Safety Holders, Bases, and Connectors for Solid-State (LED) Light Engines and Arrays
- IEC 60838-2-2: Miscellaneous lamp holders – Part 2-2: Particular requirements – Connectors for LED-modules

2.3. Reference Document

- 109-197 Test Specification (TE Test Specification vs EIA and IEC Test Methods)

3. REQUIREMENTS

3.1. Design and Construction

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

3.2. Ratings

Wire: 18AWG to 20AWG, solid, stranded (maximum 16 strands for 18 AWG and maximum 7 strands for 20AWG) and fused.

| Indicates Change

NOTE
The maximums for energy presented here are independent of each other. It is not possible to meet two of them without violating the third one.

Temperature rating is representative for the LED holder. Review of maximum temperature limits for accessories (for example reflectors) being used in conjunction with the LED holder may result in a more limited range.

Voltage	Current	Energy	Temperature
60V DC (maximum)	3 Ampere (maximum)	100W maximum	-40°C to 105° C (operating)

3.3. Test Requirements and Procedures Summary

Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

TEST DESCRIPTION	REQUIREMENT	PROCEDURE
Initial examination of product	Meets requirements of product drawing.	Visual, dimensional, and functional inspection according to the quality inspection plan.
Final Examination of Product	The product shall not have visible marks of damage, break, or defect before and after the execution of the tests.	EIA-364-18B
ELECTRICAL		
Contact resistance	Initial bulk resistance maximum 20mΩ. Maximum Δ20mΩ of the bulk resistance after testing.	EIA-364-23, Option 1 Open voltage: 20 mV maximum Current 100 mA maximum
Withstanding Voltage	No creeping discharge. No flashover shall occur. Leakage current shall not exceed 0.5 mA. Test between contact and ground plate with dummy LED mated.	The samples shall be exposed for 48 hours to moist air having a relative humidity of 93±5% at a temperature of 25±2°C. Following the 48-hour period and while still exposed to moist air, the device shall be subjected to the dielectric Withstanding voltage test. 2.0 kV AC for 1 minute with 1-mm thick plastic insulated LED dummy. 1.6 kV AC for 1 minute with FR4 LED dummy having a distance of 1.4 mm from top contour edge of LED to contact pad.
Insulation Resistance	500 MΩ minimum Construction and base material of applied COB LED can give different results.	EIA 364-21 Voltage: 500 VDC for 1 minute. Test between contact and ground plate.
Temperature Rise	ΔT<30°C with I = 5A	EIA 364-70, Method 2 Measure temperature rise at 1 A and increase current in steps of 1 A. After a stabilization period of 1 hour and up to 5A. The holder with LED is mounted on a cooling device made from a bare aluminum plate with dimensions 80x100x8 mm.

TEST DESCRIPTION	REQUIREMENT	PROCEDURE
MECHANICAL		
Wire insertion force (solid and tinned wires only)	Maximum 15N. No visual damage.	EIA 364-13 method A. Max rate of 25.4mm/min
Wire retention force	Minimum 22.3N. No visual damage.	EIA 364-13 method A
Vibration	No electrical discontinuity greater than 1µsec shall occur. No physical damage.	EIA 364-28, Test Condition VII, Test Condition D Vibration frequency: 20 to 500 Hz, 3.10 g peak. Vibration direction: 3 mutually perpendicular directions Duration: 15 minutes each
Mechanical Shock	No electrical discontinuity greater than 1µsec shall occur. No physical damage.	EIA 364-27, Test Condition H Accelerated velocity: 30 G half sinusoidal shock pulses Number of shocks: 3 in each direction applied along 3 mutually perpendicular directions with 18 total shocks.
LED repairability (during LED assembly in production)	LED still locks in holder. See note.	Mate and un-mate specimen 3 times. One un-mating/mating cycle: unscrew socket, remove LED, replace LED and screw down socket. Test should be done before any energized use in application.
Wire insertion repairability (solid and tined wires only)	See note.	Extract wire and replace with new wire 3 times. One cycle: extracting wire by turning and pulling, replace with same size wire
Reflector Insertion Force (*Z35L and Z45L only)*	20N Maximum	EIA 364-13 method A. Max rate of 25.4mm/min Measure force required to insert reflector onto LED holder.
Reflector Retention (*Z35L and Z45L only)*	10N Minimum	EIA 364-13 method A. Max rate of 25.4mm/min Measure force required to remove reflector from LED holder.
ENVIRONMENTAL		
Temperature life	See note	EIA-364-17, Method A, Test Condition 4 Subject mated specimens for 125 hours. Test temperature: 125°C

Thermal shock	See note.	EIA-364-32, Test Condition VIII Subject specimens to 25 cycles between -40° and 105°C with 30-minute dwells at temperature extremes and 1-minute transition between temperatures.
Damp heat cycling	See note.	EIA-364-31, Method IV Subject specimens to 10 cycles (10 days) between 25° and 65°C at 80 to 100% RH.
Contact normal force relaxation	Normal force should be at least 0.5N at maximum deflection.	500 hours on 125°C mounted on plate with dummy LED. Measurement points: initial and after 500h

NOTE
Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in Product Qualification/ Requalification Test Sequence shown in Figure 2.

Figure 1

3.4. Product Qualification and Requalification Test Sequence

TEST OR EXAMINATION	TEST GROUP (a)						
	1	2	3	4	5	6	7
	TEST SEQUENCE (b)						
Initial examination of product	1	1	1	1	1	1	1
Final Examination of Product	9	8	7	9	4	5	4
Contact resistance	2,4,6,8	2,4,6	2,4,6	2,4,6,8		2,4	
Withstanding Voltage	3						
Insulation Resistance	5						
Temperature Rise	7						
Wire insertion force					2		
Wire retention force		7			3		
Vibration		3					
Mechanical Shock		5					
LED repairability (during LED assembly in production)			3				
Wire insertion repairability (solid and tined wires only)			5				
Reflector Insertion Force (*Z35L and Z45L only)*							2
Reflector Retention (*Z35L and Z45L only)*							3
Temperature life				3			
Thermal shock				5			
Damp heat cycling				7			
Contact normal force relaxation						3(c)	

NOTE

(a) Test groups 1,4 and 5 contain 5 samples on solid 18AWG, 5 samples on solid 20AWG, 5 samples on stranded 18AWG and 5 samples on stranded 20AWG. Test groups 2, 3, and 6 contain a minimum of ten total samples. Test group 7 contains a minimum of 5 total samples tested in conjunction with LEDil type Elise reflector.

(b) Numbers indicate sequence in which tests are performed.

(c) LLCR to be measured midway through step 3. LLCR to be measured right before 500h on 25°C and immediately after.

Figure 2