

EXS210071-01

EXS1550-060-05-0801100

SLED TOSA 1550nm

Revision: 1.0
Date: 28-09-2012
Confidentiality: **None**

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1. SCOPE

1.1 PURPOSE

The purpose of this document is to specify the electro-optical performance and dimensions of superluminescent light emitting diode (SLED) TOSA.

1.2 RESPONSIBILITY

EXALOS is responsible for establishing, implementing and maintaining this procedure. The Quality representative shall ensure that a timely Engineering Change Notice (ECN) is issued in accordance with EXALOS procedure for any changes.

2. REFERENCE DOCUMENT

- EXS-WI-0001 Visual Inspection Criteria SLED Chip on Submount Procedure
- MIL STD 883 C method.
- Bellcore GR-468-CORE

3. ELECTRO-OPTICAL PERFORMANCE ($T_{\text{SLED}} = 25^{\circ}\text{C}$)

| Parameter | Symbol | Min | Typ | Max | Unit |
|----------------------------|-----------------|------|------|------|------|
| Operating Current | I_{op} | 0 | | 200 | mA |
| Power in SMF | P_o | 0.5 | 2 | | mW |
| Centre Wavelength | λ_c | 1530 | 1550 | 1570 | nm |
| 3dB Bandwidth | | 50 | 60 | | nm |
| Spectral ripple [RB=0.1nm] | | | 0.1 | 0.3 | dB |

4. ABSOLUTE MAXIMUM RATINGS

Stresses beyond the absolute maximum ratings may cause permanent damage to the device.

Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

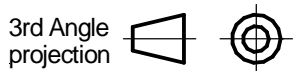
| Parameter | Symbol | Cond. | Min | Max | Unit |
|----------------------------|------------------|--------------------|-----|-----|--------------------|
| Forward current | I_F | | | 250 | mA |
| Reverse voltage | V_R | | | -2 | V |
| Forward voltage | V_F | $I_{F,\text{max}}$ | | 2 | V |
| Storage temperature | T_{stg} | | -40 | 85 | $^{\circ}\text{C}$ |
| Operating temperature | T_{op} | $I_{F,\text{max}}$ | -20 | 65 | $^{\circ}\text{C}$ |
| Lead soldering temperature | | | | 260 | $^{\circ}\text{C}$ |
| ESD | | human b.m | | 500 | V |

5. SCREENING (EXS210071-01)

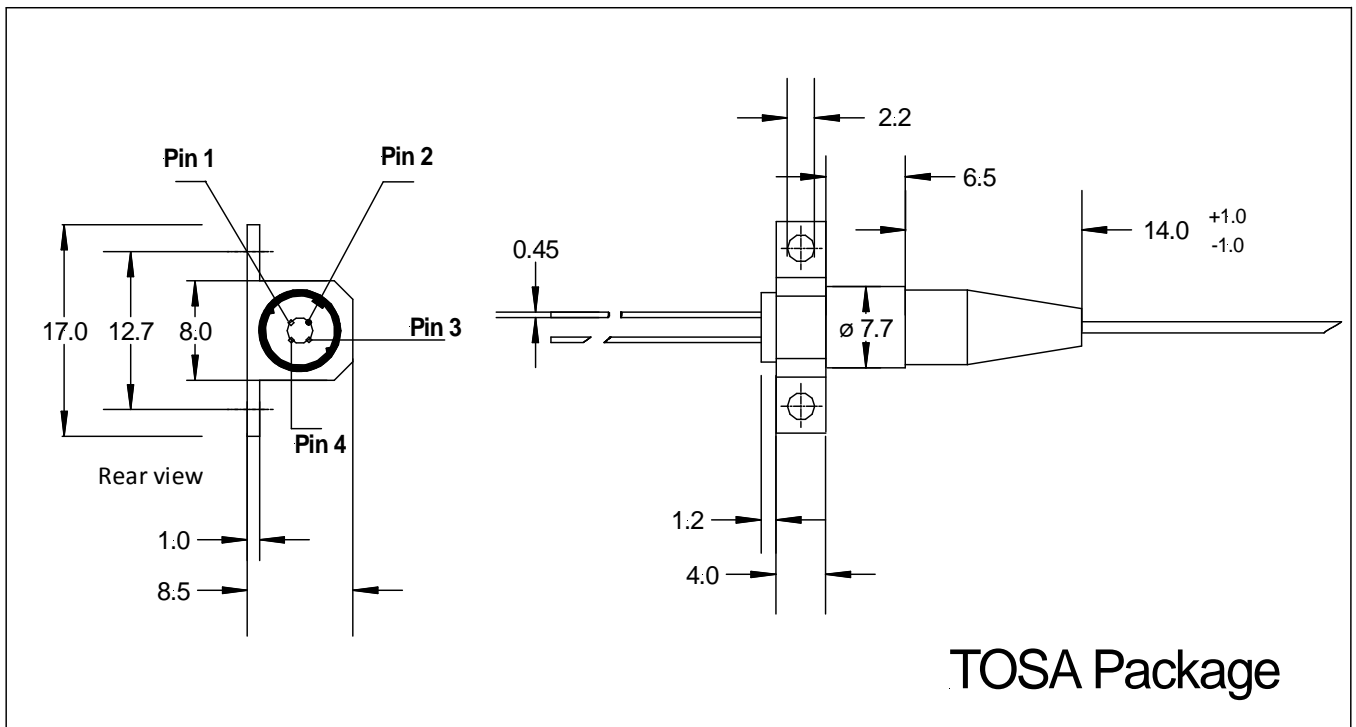
The manufactured 1550nm SLED Module is required to meet all operating conditions specified in Table 4.1, Electro-Optical Performance Specifications after being subjected to the following screening tests.

| Test Item | Test Conditions | Reference | Sample |
|------------------------------------|--|---|--------|
| Hermetic Seal (At TO-CAN Level) | Fine leak : | MIL-STD-883, Method 1014 Condition A | 100 % |
| | Max. leak rate 5×10^{-8} atm.cc/sec Gross leak : | MIL-STD-883, Method 1014 Condition C | 100 % |
| Temperature Cycling | -40°C to +85°C, ramp rate $\geq 5^\circ$ C/min 20 cycles | MIL-STD-883, Method 1010 | 100% |

6. PACKAGE DIMENSIONS [mm]



Tolerances: .X ± 0.25 mm
.XX ± 0.05 mm



| EXS210071-01 | |
|--------------|------------------------|
| Pin | Function |
| 1 | NC |
| 2 | SLED CATHODE (-), CASE |
| 3 | SLED ANODE (+) |
| 4 | NC |



7. FIBRE AND CONNECTOR

| Part | Description |
|--------------------------------|---------------------------|
| SM Fibre | SMF-28, 9/125 μm |
| Tight buffer secondary coating | 900 μm |
| Fibre pigtail length [min] | 1 m |
| Optical connector | FC/APC (Narrow Key 2.0mm) |

8. IMPORTANT NOTES

1. Avoid electrostatic discharges, which may destroy the SLED.
2. Never use the bare die without heat sinking.
3. Adequate eye protection against laser radiation should be used while handling and operating the module.
4. EXALOS declines any responsibility if the device is used in applications where human life may be endangered.
5. Back reflections may influence the output power and spectral characteristics of the SLED. The use of optical isolators and/or angled connectors is recommended. Back reflections of less than -30dB are recommended.
6. The measured optical spectrum of the 1550nm shows absorption lines in the wavelength range from 1420nm to 1490nm which are believed to origin from absorptions in the atmosphere

9. ORDERING INFORMATION

Please use the following **part number** to order product from EXALOS:

E X S 2 1 0 0 7 1 - 0 1

9.1 TECHNICAL DESCRIPTION

