

Auto-Grade VCSEL Diode

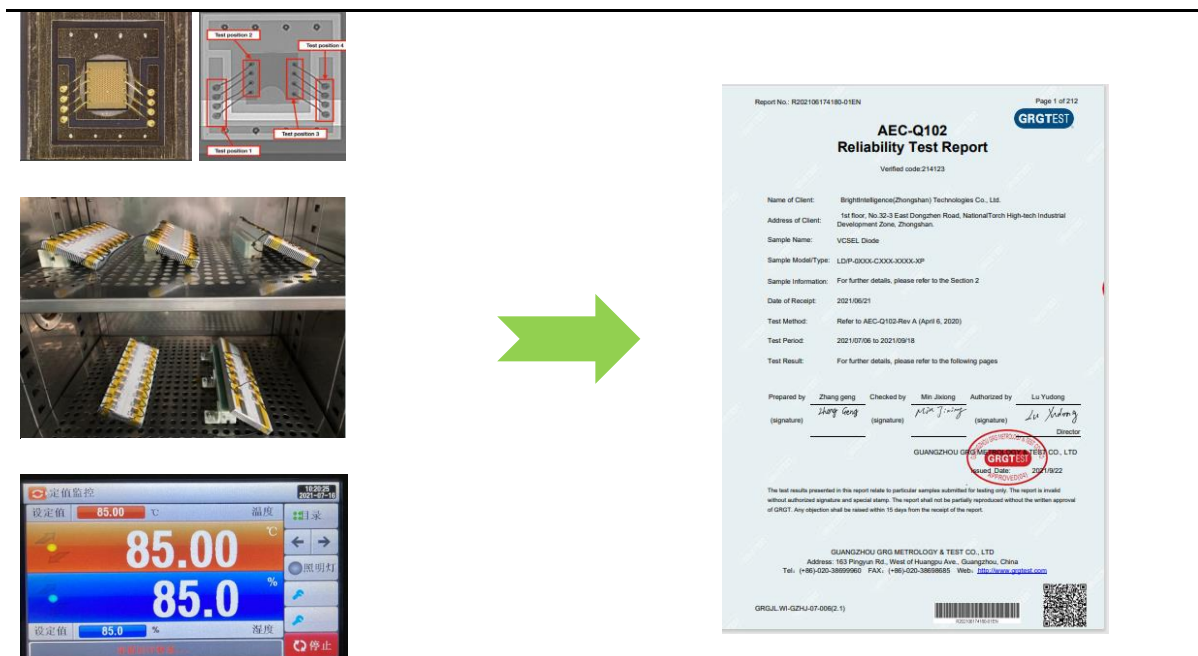
AEC-Q102 Test and 50g Bump Test Qualified

Brightlaser VCSEL diodes have passed AEC-Q102 automotive qualification testing, as well as Bump Test of 50g (50 times the acceleration of gravity). provides high-reliability VCSEL products for automotive applications.

【AEC-Q102 Certification】

Among many AEC quality certification standards, AEC-Q102 is a stress test certification based on failure mechanism for discrete optoelectronic semiconductors in automotive applications. These tests mainly measure the strength, safety, reliability and overall feasibility of optoelectronic components. Each test has failure criteria and acceptance criteria. Take laser components as an example, including a single pure laser chip, and a package combination of laser chips, optical components, and other converters.

Brightlaser newly launched AEC-Q102 qualified VCSEL (Vertical Cavity Surface Emitting Laser) diode LD/P-0XXX-CXXX-XXXX-XP series, is good for optical in-cabin sensing (ICS) systems, with high conversion efficiency and high reliability, support 2D NIR imaging and 3D TOF sensing; the fast speed responsive advantage is also ideal for 4D sensor, ADAS and lidar applications.



Key Features:

- 2W / 4W Optical Output Power
- Configuration with VCSEL, Diffuser, Photodiode,
- High power conversion efficiency

【50g (50 times acceleration of gravity) Bump Test】

Automotive electronic components need to work under diverse pressures and dynamic environments; The Bump Test is to simulate whether the product function is normal or failure when under a series of impacts in working environment. Bump Tests assess the integrity and reliability of the product structure.

Brightlaser VCSEL device LP000X-C00X-XXXXSP-0103 passed the Bump Test above 50G and obtained the certification report IEC60068-2-29:1993. This implies that the integrity and reliability of the VCSEL diode have reached the automotive standard production process.

1.2 Environmental condition(s)

Temperature: 23.2°C

Humidity: 48%RH

1.3 Test standard Refer to the standard IEC60068-2-29:1993 and according to client's requirements.

1.4 Test condition(s)

- 1) Sample status: unpackaged.
- 2) Peak acceleration: 500m/s²
- 3) Pulse duration: 6ms
- 4) Pulse shape: half sine wave
- 5) Axial: $\pm X/\pm Y/\pm Z$ axis
- 6) Number of impacts: 10 times per axis




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TEST REPORT

Applicant: Brightlaser(Zhongshan) Technologies Co., Ltd.
Address: 1st floor, No.32-3 East Dongshan Road, National Torch High-tech Industrial Development Zone, Zhongshan.

The following sample(s) was/were submitted and identified on behalf of the client as:

Sample name: Laser diode with FOD
Model No.: LP000X-C00X-XXXXSP-0103
Material: Aluminum nitride bracket + diffuser
Number of sample: 10pcs
Sample Received: 2021-06-06
Testing Period: 2021-06-06

Test item: Bump test
Test standard: Refer to the standard IEC60068-2-29:1993 and according to client's requirements.

Test results: Please refer to next page(s)

Wrote by: *Ming He*
 Reviewed by: *Collin*
 Approved by: *Wenke Huang*
 Authorized signatory: *Wenke Huang*
 Date: 2021-06-17

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The automotive qualification also means that this series of devices are very durable, and the certification standards exceed the quality requirements of consumer electronics and industrial applications, so they are also highly competitive in the consumer electronics and industrial application markets.

In addition, Brightlaser is ISO9001 certified Semiconductor Manufacture Company. VCSEL products have passed SGS authoritative certification, CE, RoHS, and SVHC certification.



Innovations for Freedom

Brightlaser was founded in 2014, is a global pioneer supplier in VCSEL technology from components, sensors, to total solutions for AI/IoT applications including Optical Communication, Consumer Electronics, ADAS, Machine Vision, Telecom, Robotics, Smart House, Surveillance System, etc.

As a high-tech company, Brightlaser possesses its own VCSEL intellectual properties in wafer design, advanced chip process, and applications. Brightlaser headquartered in Hong Kong, established branch offices in Shen Zhen and Zhong Shan of China. The factory located in Zhong Shan covers footprint of 160,000 Sq. ft., equipped with globally state-of-art GaAs techniques, and the first 6-inch VCSEL chip fab & packaging line in mainland China.

In recent years, Brightlaser has caught up extremely quickly with all the opportunities the market has been giving, is becoming increasingly competitive. Currently, we are working with world-wide-leading partners and customers in technologies, marketing, and sales.

To cope with the rapidly growing, we are seeking professional dealers, distributors to join this promising field. As a self-driven, proactive, taking initiative, team player, you are welcome to our fast-paced, dynamic team of collaborators.