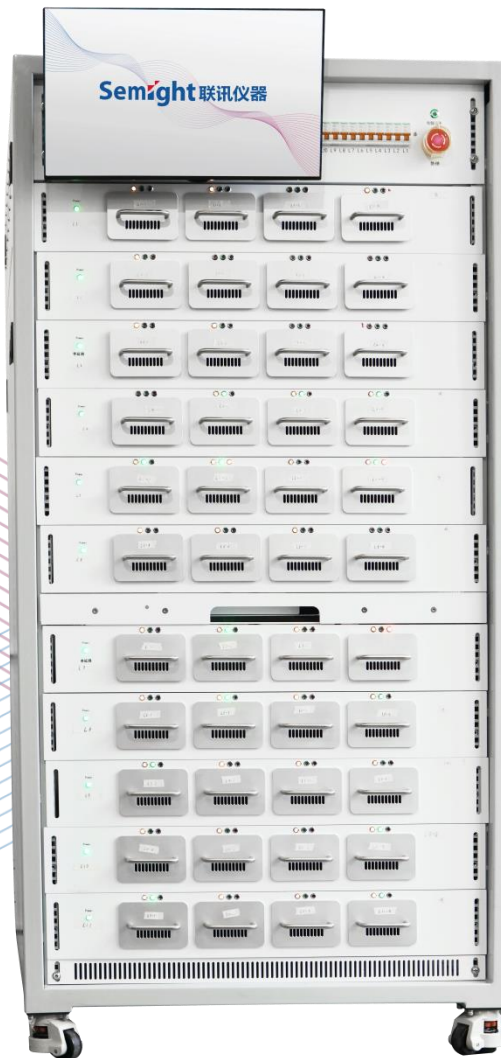


BI6201

CoC Burn-In System

Version 1.6



Product Description

The BI6201 burn in system is a high-density, multi-functional testing system specifically designed for the verification of the aging lifespan of semiconductor laser chips. The system adopts a modular framework and a large single-layer structure, significantly reducing system costs by integrating multi-channel power supplies, temperature controllers, real-time data acquisition capabilities, as well as standardized drawers and flexible fixture configurations. Customized test fixtures are suitable for various packaging types of semiconductor lasers, such as CoC (Chip on Carrier), TO-Can, etc., of different sizes. The fixtures can be easily replaced to accommodate different device types. The driving circuit of BI6201 features excellent protection networks to prevent any current or voltage overshoot, eliminating potential EOS risks. It also allows setting thresholds for current and voltage, and the system can shut down abnormal channels when the output values exceed the threshold, providing enhanced protection for the tested chips. In addition to integrating protection functions into the control circuit, the system design also considers channel-to-channel isolation performance and electrostatic discharge (ESD) protection.

Key Features

- Flexible fixture configuration for different product packaging forms. For CoC (Chip on Carrier) packaging, a fishbone-type fixture is recommended, which supports wire bonding on the fishbone fixture.
- Energy-saving temperature control: Compared to traditional oven-type TO semiconductor laser aging systems, the design of BI6201 is simpler and easier to operate, reducing energy consumption and increasing energy utilization, mainly reflected in:

- Each fixture (each drawer supports 1-2 fixtures) has independent heating, temperature control, monitoring, and heat dissipation units.
 - Heating plates or TEC can be selected for temperature control according to the requirements of the device under test.
 - Special temperature control structure with excellent thermal conductivity, with a temperature deviation of less than 1.5°C for the overall thermal sink.
- Powerful driving power supply: The system supports up to 4224 channels of 4-quadrant SMU (Source Measure Unit) driving power, making the system circuit configuration more flexible and suitable for a wider range of product types.
- The driving power supply supports the following operating modes:
- Auto Current Control Mode (ACC): The control circuit provides a stable current to each semiconductor laser, ensuring a constant supply current during the aging period even if the contact resistance of the device under test changes.
 - Auto Power Control Mode (APC): In Auto Power Control Mode (APC), the control circuit can automatically adjust the driving current based on the feedback from the device or an external Monitor Photo Diode (MPD) to maintain a constant feedback signal strength, ensuring that the output optical intensity remains at a certain level throughout the test.
- Safety and reliability: Comprehensive protection mechanisms through hardware and software eliminate potential issues such as EOS (Electrical Overstress) that could harm the device under test.
- Online power monitoring: Optional configuration for online power monitoring, supporting

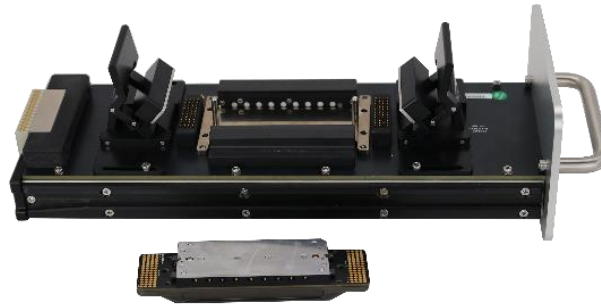
complete LIV (Light-Current-Voltage) or EA (Electro-Absorption) scans, with the ability to analyze Ith. The test repeatability deviation is less than 1%, making the system the best choice for reliability testing in the research and development phase.

- Compact integrated solution, ensuring high quality with excellent cost-effectiveness and easy maintenance.
- Alarm generation when temperature abnormalities are detected.
- Large capacity: A single system can support up to 4224 pcs DFB (Distributed Feedback) CoC simultaneously aging, with production capacity flexibly configured based on customer needs.
- Powerful software functionality: Clear and user-friendly interface, providing clear status information for each device. All test results, test statuses, and abnormal conditions are recorded in the database, supporting database data storage and query for traceable test results. Aging data can be uploaded to the database. Integrated quick inspection function for convenient and efficient inspection of equipment information.

Fixtures & Drawers



CoC fixture and drawer



CoC fixture and drawer with in-situ front optical power monitor and LIV scan function



To can fixture and drawer with in-situ front optical power monitor and LIV scan function

Technical Specifications

Parameter Type	Parameter Name	Specification
System Parameters	DUT Type	CoC, TO46, TO56
	Fixture Type	48 pcs CoC fish bone fixture
	System Capacity	11 Layers, 44 Drawers, 88 fixtures, total 4224 channels
	Gas Protection	Integrated with Gas protection feature
	Power Supply	AC 380 V, 50/60 Hz 32 A
	Air Pressure	0.4-0.6 Mpa
	Weight	<1000 kg
	Dimension (mm)	984*1102*2030
Electrical	Laser Driver Type	Each channel independent
	Laser Driver Polarity	Four-quadrant Bi-directional

	Driver Current Range	± 500 mA (0-1000 mA is optional)
	Driver Current Accuracy	$\pm 0.3\%$ full scale
	Voltage Measurement Range	± 7.5 V
	Voltage Measurement Accuracy	± 50 mV full scale
	Driver Voltage Range	± 7.5 V
	Driver Voltage Accuracy	0.3% full scale
	Current Measurement Range	± 500 mA
	Current Measurement Accuracy	$\pm 0.3\%$ full scale
	Driver Current and Voltage Compliance Limitation	Configurable
	EOS	No EOS under any operation
Temperature	Temperature Control Method	Heat plate or TEC
	Temperature Zone	Each fixture working independently
	Heat Sink Temperature Range	40-120 °C (150 °C is optional)
	Temperature Ramp Speed	40 °C to 100 °C < 20 mins 100 °C to 40 °C < 30 mins
	Heat Sink Temperature Resolution	0.1 °C
	Heat Sink Temperature Accuracy	< ± 0.5 °C
	Heat Sink Temperature Uniformity	< ± 1.5 °C ^①
	Heat Sink Temperature Stability	< ± 0.25 °C
Pogo Pin Parameters	Repeatability	Pogo pin contact points diameter <150 μ m
	Connection Test 1st Pass Rate	> 99.7%

Note ①: Heat sink temperature without DUT loading

Ordering Information

BI6201	Standard Configuration
Options:	
PM	External PD for front optical power monitoring
TO	TO-Can package burn-in
FQ	Four quadrant driver board
HP	High power consumption with TEC

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*This information is subject to change without notice.