Packaging Of High Power Semiconductor Lasers Micro And Opto Electronic Materials Structures And Systems

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Packaging Of High Power Semiconductor

The characteristics and challenges of the design and various packaging, processing, and testing techniques are detailed by the authors. New

technologies, in particular thermal technologies, current applications, and trends in high power semiconductor laser packaging are described at length and assessed.

Packaging of High Power Semiconductor Lasers | SpringerLink

This book introduces high power semiconductor laser packaging design. The challenges of the design and various packaging and testing techniques are detailed by the authors. New technologies and current applications are described in detail.

Packaging of High Power Semiconductor Lasers | Xingsheng ...

In this document, the term high power laser refers to a semiconductor laser having a front facet power of at least 50 mW. One aspect of the invention is a packaged high power semiconductor laser comprising the laser surrounded by

a hermetically sealed container filled with a gaseous medium containing at least 100 ppm oxygen.

Packaging of high power semiconductor lasers - Corning ...

In fact, semiconductor packages only degrade the performance of a power device by adding thermal and electrical resistance, inductance, size, cost, and reliability problems. The key reason packaging is required is to protect silicon devices from the environment – humidity in particular.

It's Time to Rethink Power Semiconductor Packaging

Get this from a library! Packaging of high power semiconductor lasers. [Hui Liu; Xingsheng Liu; Linling Xiong; Wei Zhao, Ph.D.;] -- This book introduces high power semiconductor laser packaging design. The characteristics and challenges of the design and various packaging, processing, and testing techniques are detailed by the ...

Packaging of high power semiconductor lasers (eBook, 2014 ...

The reason for ditching the package in the first place was serendipitous. As a fledgling startup, no company specializing in power semiconductor packaging wanted to be bothered with small volumes and high up-front engineering costs. So we went with the idea of supplying our products in chip-scale formats.

Six Reasons to Rethink Power Semiconductor Packaging

Polymeric packaging of high power semiconductor devices: Material selection & reliability assessment Abstract: For power thyristor devices used in high voltage direct current (HVDC) schemes, hermetic packages are still being used despite plastic packaging having made successful progress towards replacing them in various high reliability applications, e.g. aerospace

and military.

Polymeric packaging of high power semiconductor devices ...

The characteristics and challenges of the design and various packaging, processing, and testing techniques are detailed by the authors. New technologies, in particular thermal technologies, current applications, and trends in high power semiconductor laser packaging are described at length and assessed.

Packaging of High Power Semiconductor Lasers (Micro- and ...

In this chapter, the status and trend of power semiconductor module packaging for HEV/EV are investigated. Firstly, the functionality of power electronics and module in HEV/EV power-train system, as well as the performance requirements by automotive industry, is addressed. A general overview of HEV/EV module design and manufacturing is discussed.

Status and Trend of Power Semiconductor Module Packaging ...

A power semiconductor device is a semiconductor device used as a switch or rectifier in power electronics (for example in a switch-mode power supply).Such a device is also called a power device or, when used in an integrated circuit, a power IC.. A power semiconductor device is usually used in "commutation mode" (i.e., it is either on or off), and therefore has a design optimized for such ...

Power semiconductor device - Wikipedia

Abstract: High power semiconductor laser arrays have been widely used in many fields, such as pumping solid state laser aerospace, industry, medicine and display. For many applications, high power semiconductor lasers operating quasi-continuous wave (QCW) mode are demanded. For QCW laser, the output peak power is higher and average power

is low.

Packaging of high power semiconductor laser arrays using a ...

A method for packing a high power semiconductor laser characterised by: (A) fixedly positioning semiconductor laser (21) having an InGaAs active layer in a container (27), said laser having an operating optical power of at least 50 milliwatts; (B) introducing a gaseous medium into said container (27), said gaseous medium having an oxygen content of at least 100 parts per million; and (C ...

Packaging of high power semiconductor lasers - CORNING INC

A package for a high power semiconductor laser comprising a hermetically sealed container filled with a dry gaseous medium containing oxygen. The presence of oxygen in the laser atmosphere is counter to standard practice in the art which teaches the use

of an atmosphere of a dry inert gas. The package also includes a getter for organic impurities, e.g., a getter composed of a porous silica or ...

US5770473A - Packaging of high power semiconductor lasers ...

For power thyristor devices used in high voltage direct current (HVDC) schemes, hermetic packages are still being used despite plastic packaging having made successful progress towards replacing ...

Polymeric packaging of high power semiconductor devices ...

Abstract of the Disclosure A package for a high power semiconductor laser comprising a hermetically sealed container filled with a dry gaseous medium containing oxygen. The package also may include a getter for organic impurities, e.g., a getter composed of a porous silica or a zeolite. The hydrogen content of the materials used to form the package can be reduced by baking at an elevated ...

CA2128068C - Packaging of high power semiconductor lasers ...

The Secret for Miniature Converters with High Power Density. ... Miniaturization and packaging of power electronics by embedding of semiconductor switches into the build-up layers of a printed circuit board has experienced a considerable development throughout recent years.

Packaging for Power Electronics - Fraunhofer IZM

The properties of wide band gap (WBG) semiconductors are beneficial to power electronics applications ranging from consumer electronics and renewable energy to electric vehicles and high-power traction applications like high-speed trains. WBG devices, properly integrated, will allow power electronics systems to be smaller, lighter, operate at higher temperatures, and at higher frequencies than ...

High-Performance Packaging Technology for Wide Bandgap ...

For power thyristor devices used in high voltage direct current (HVDC) schemes, hermetic packages are still being used despite plastic packaging having made successful progress towards replacing them in various high reliability applications, e.g. aerospace and military. Although hermetic technologies have demonstrated an excellent history of reliability and performance, they offer several ...

Polymeric packaging of high power semiconductor devices ...

Packaging is critical to achieving maximum performance from RF power transistors. Since RF power transistors are among the most expensive components in a power amplifier (PA), and the PA is the most expensive component in a cellular base station, there is obvious motivation to reduce the cost of the transistor without sacrificing performance.