



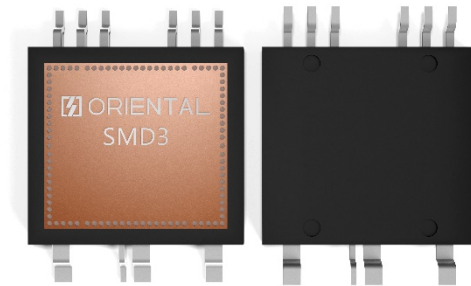
## SMD3 Package Type

### 1、封装简介

关于 OBC 塑封模块，它是一种专门用于车载充电器（OBC）的集成化功率半导体组件。它通过先进的塑封工艺，将多个 SiC、SJ 或 IGBT 芯片、连接基板等集成在一个紧凑的封装内，主要目的是为了实现 OBC 的高功率密度、高效率和小型化设计。

#### 1. Package Overview

The OBC plastic-encapsulated module is an integrated power semiconductor component specifically designed for on-board chargers (OBC). It integrates multiple SiC, SJ or IGBT chips, connection substrates, and other components into a compact package by means of advanced plastic encapsulation technology, aiming to achieve the design objectives of high power density, high efficiency and miniaturization for OBCs.



### 2、结构特点：

**卓越的散热与功率密度：**模块内部采用高热导率 DBC 陶瓷片，并优化布局，显著降低热阻。这使得芯片工作温度更低，或在相同体积下能通过更大电流。

**提升系统集成度与可靠性：**模块在出厂前已完成内部绝缘和性能测试，并大幅减少了外部 PCB 上的连线、爬电距离和分立器件数量，从而简化了设计，提高了整机可靠性。

**简化开发与生产：**由于模块是预集成的标准化组件，可以缩短开发周期，降低在布局、散热和绝缘处理上的设计风险。在产线上也减少了贴片和焊接工序，有利于自动化生产。

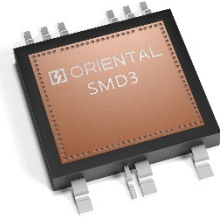
#### 2. Structural Features

**Superior Heat Dissipation and Power Density:** The module adopts high-thermal-conductivity DBC ceramic substrates and incorporates an optimized layout, which significantly reduces thermal resistance. This enables the chips to operate at lower temperatures or handle higher currents within the same volume.

**Enhanced System Integration and Reliability:** The module undergoes internal insulation and performance testing before delivery. It also drastically cuts down on the number of connections, creepage distances, and discrete components required on the external PCB, thereby simplifying the design and improving the reliability of the complete equipment.



**Simplified Development and Production:** As a pre-integrated standardized component, the module shortens the development cycle and lowers design risks related to layout, heat dissipation, and insulation treatment. It also reduces the number of component placement and soldering processes on the production line, facilitating automated manufacturing.



### 3、应用场景：

车载充电器（OBC）、DC-DC 转换器、电动压缩机等。

### 3. Application Scenarios

On-board Chargers (OBC), DC-DC Converters, Electric Compressors, etc.

