TO-252 Package Type

1、结构特点：

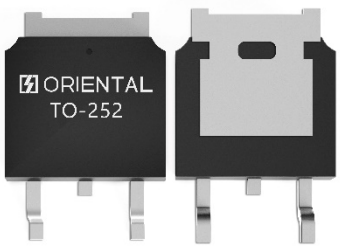
扁平外形，尺寸小巧（约 10.3mm×6.6mm×2.3mm），适合高密度电路布局。

三个引脚，芯片通过金属丝键合与引脚相连，底部有大面积散热焊盘，直接焊接在 PCB 上，兼顾大电流输出与散热功能。

1. Structural Features

It features a flat profile and compact dimensions (approx. 10.3mm × 6.6mm × 2.3mm), making it ideal for high-density circuit layouts.

Equipped with three pins, the chip is connected to the pins via wire bonding. A large-area thermal pad on the bottom is directly soldered onto the PCB, which ensures both high-current output and efficient heat dissipation performance.



2、散热性能：

底部焊盘可将热量快速传导至 PCB，热阻低至 5.5℃/W（典型值），配合 PCB 大面积铺铜和散热过孔，能有效降低结温，保障高功率场景下的稳定性。

2. Thermal Performance

The bottom pad enables rapid heat conduction to the PCB, with a typical thermal resistance as low as 5.5°C/W. Combined with large-area copper pouring and thermal vias on the PCB, it can effectively reduce the junction temperature and ensure stability in high-power applications.

3、电气性能：

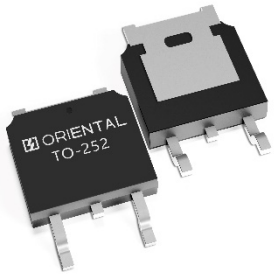
寄生电感低至 1.2nH，寄生电容＜100pF，适合高频开关应用，开关损耗低，信号传输延迟小。

支持中等功率应用，常见电流范围在几十安培。

3. Electrical Performance

The parasitic inductance is as low as 1.2 nH and the parasitic capacitance is less than 100 pF, making it suitable for high-frequency switching applications with low switching losses and minimal signal transmission delay.

It supports medium-power applications, with a typical current range of several tens of amperes.



4、应用场景：

电源管理：如开关电源、电池管理系统，可实现高效率电能转换。

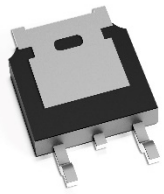
汽车电子：发动机控制单元、车载充电模块等，满足 AEC-Q101 认证要求。

工业自动化：驱动工业电机、变频器等，支持长时间高负荷运行。

消费电子：小型充电器、智能设备电源模块，节省空间并降低温升。

4. Application Scenarios

- **Power Management**: Such as switching power supplies and battery management systems, enabling high-efficiency power conversion.
- **Automotive Electronics**: Such as engine control units (ECUs) and on-board charging modules, meeting the requirements of AEC-Q101 certification.
- **Industrial Automation**: Driving industrial motors, frequency converters, etc., supporting long-term high-load operation.
- **Consumer Electronics**: Small chargers and power modules for smart devices, saving space and reducing temperature rise.



5、优势与局限：

优势：体积小、成本低、散热较好，适用于空间受限的中等功率场景。

局限：相比 TO-263 等封装，散热能力有限，高功率场景需优化 PCB 散热设计。

5. Advantages and Limitations

Advantages: Compact size, low cost, and good heat dissipation performance, making it suitable for space-constrained medium-power applications.

Limitations: Compared with packages such as TO-263, its heat dissipation capacity is limited; optimized PCB heat dissipation design is required for high-power applications.