



# Frequently Asked Questions

## 常见问答(FAQ's)

---

# FAQ List 常见问答列表

**Q1:** Where is the country of origin for these MOSFET devices?

这些MOSFET器件的原产地国家是哪里？

**A1:** IceMOS is a “fabless company”. We have manufacturing partners throughout Asia. Our wafer/die production is done in Japan, and our assembly and test partners are in other parts of Asia.

IceMOS是一家设计公司。我们在亚洲各地都有制造合作伙伴。我们的晶圆/模具生产在日本，我们的组装和测试伙伴在亚洲其他地区。

**Q2:** What Management System does IceMOS have in place?

IceMOS有什么管理系统？

**A2:** IceMOS is ISO9001, IATF16949 and ISO14001 certified and qualified. We follow the ISO Supply Chain Management guidelines and require that our manufacturing partner maintain the same quality certifications.

IceMOS已通过ISO9001、IATF16949和ISO14001认证。我们遵循ISO供应链管理指南，并要求我们的制造合作伙伴保持相同的质量认证。

**Q3:** Does IceMOS offer environmentally friendly devices?

IceMOS提供环保设备吗？

**A3:** Yes. Our MOSFETs meet RoHS product level compliance for the European Union's Directive RoHS2 (2011/65/EU) + (EU) 2015/863, that restricts the use of hazardous substances.

是的。我们的mosfet满足RoHS产品水平符合欧盟指令RoHS2 (2011/65/EU) + (EU) 2015/863，这限制了有害物质的使用。

**Q4:** Does IceMOS offer custom devices?

IceMOS是否提供自定义设备？

**A4:** We can create a customer spec if the business case will support doing this. There may be some up front NRE cost required if a new mask set is needed. We welcome the opportunity to learn more about your request.

如果业务案例支持这样做，我们可以创建一个客户规范。如果需要新的掩模组，可能需要一些预先的NRE成本。我们欢迎有机会了解更多关于您的要求。

**Q5:** Are all of the data sheets available on the IceMOS web site?

所有数据表均可在IceMOS网站上查阅吗？

**A5:** Yes. This is the most current list of devices that are in production. We do have some “Preliminary” data sheet on our website for those devices that are not fully qualified or characterized yet. Contact your sales representative for the latest qualification status of that device.

是的。这是正在生产的设备的最新列表。我们的网站上有一些初步的数据表，这些设备还没有完全合格或特征。有关该设备的最新认证状态，请与您的销售代表联系。

**Q6:** Can IceMOS ship directly to my factory from your assembly site?

IceMOS可以从你们的封装厂直接运到我的工厂吗？

**A6:** All products are shipped from the IceMOS Distribution Center located in Hong Kong as part of the normal product flow. We can drop ship to anywhere in the world from that Distribution Center.

所有产品均由位于香港的IceMOS配送中心发货，作为正常产品流程的一部分。我们可以从那个配送中心把货物送到世界上任何地方。

# FAQ List 常见问答列表

**Q7 :** What is the difference between a Superjunction MOSFET and MOSFET?

超结MOSFET和MOSFET之间的区别是什么?

**A7 :** The short answer is that in general a Superjunction MOSFET On-Resistance is typically lower than normal MOSFET for the same voltage spec.

简短的回答是, 一般超结MOSFET的通电阻通常低于正常MOSFET的相同电压规格。

**Q8:** Why does the Superjunction MOSEFT have a superior on On-Resistance?

为什么超结MOSEFT在抗阻上有优势?

**A8:** The term “Superjunction” means that the silicon has a fully depleted vertical structure that can sustain higher voltages with a high PN concentration. That gives it a lower Resistance when compared to a standard (planar) MOSFET.

术语超结意味着硅具有完全耗尽的垂直结构, 可以在高PN浓度下维持更高的电压。这使得它与标准(平面)MOSFET相比具有更低的电阻。

**Q9:** What is the difference between Gen1 and Gen2 IceMOS product?

Gen1和Gen2的IceMOS产品有什么不同?

**A9:** The Gen2 design has a Shrink cell pitch in comparison to the Gen1 structure. Shrinking the cell made about 40% reduction in the device’s On-Resistance for the same die size. Lower Qg is also the feature of GEN2 comparing to GEN1.

与Gen1结构相比, Gen2设计有一个收缩细胞间距。对于相同的模具尺寸, 缩小电池可以使器件的导通电阻降低40%左右。GEN2的Qg也比GEN1低。

**Q10:** In addition to the On-Resistance, are there other characteristic of Superjunction MOSFETs that offer an advantage?

除了导通电阻, 超结mosfet还有其他特性提供优势吗?

**A10:** Superjunction devices also have a lower figure of merit ( $R_{DS(ON)} \times Q_G$ ) is one of the product features that separates us from our competitor with similar  $R_{DS(ON)}$  product.

超结设备也有一个较低的数字的优点, ( $R_{DS(ON)} \times Q_G$ )这是我们的产品特点, 有别于我们的竞争对手的类似的 $R_{DS(ON)}$ 产品。

# FAQ List 常见问答列表

**Q11:** What are the most common applications where Superjunction MOSFETs can be used?

超结mosfet可以使用的最常见应用是什么?

**A11:** The most common applications are Power Supplies, Motor Drives, and DC-AC Invertors just to name a few. Superjunction MOSFETs can replace standard (planar) MOSFETs that are being used in any existing application.

最常见的应用是电源供应，电机驱动，和直流-交流逆变器只是举几个例子。超结mosfet可以取代在任何现有应用中使用的标准(平面)mosfet。

**Q12:** How does the future IceMOS technology roadmap compare with other Silicon MOSFET (including Superjunction MOSFET), IGBT, or Wideband Gap FETs like SiC, or GaN FETs?

未来的IceMOS技术路线图如何与其他硅MOSFET(包括超结MOSFET)，IGBT，或宽带Gap fet如SiC，或GaN fet比较?

**A12:** There are advantages and disadvantages for each of these different technologies when compared side-by-side. In the case of the IceMOS silicon based Superjunction technology, the greatest advantages are (1) the long-term proven reliability record of silicon, (2) the relatively low cost of manufacturing, and (3) the ease with which the process can be scaled.

当并排比较这些不同的技术时，它们各有优点和缺点。以基于硅的IceMOS超结技术为例，其最大的优势是(1)硅的长期可靠记录，(2)制造成本相对较低，(3)工艺易于规模化。

**Q13:** Does IceMOS offer any fast recovery device feature?

IceMOS是否提供快速恢复设备的功能?

**A13:** Introducing a fast recovery device is on our product roadmap and development work is currently underway. The targeting introduction date will be in Q4 of 2023.

介绍快速恢复设备是我们的产品路线图和开发工作目前正在进行中。预计将于2023年第四季度推出。