



产品简介

采用SOT-223封装的CoolMOS™ P7

将优秀性能、易用性和高性价比的封装解决方案相结合

英飞凌于2016年推出具有SOT-223封装的CoolMOS™ CE, 现在客户也可以使用高性价比的CoolMOS™ P7直接替换DPAK。CoolMOS™ P7旨在通过提供出色的性能和易用性、改善外形并提升价格竞争力来应对低功率SMPS市场的典型挑战。这种组合使得采用SOT-223封装的CoolMOS™ P7非常适合充电器、适配器、电视和照明等目标应用。

关键特性和优点

最匹配性能的超级结技术

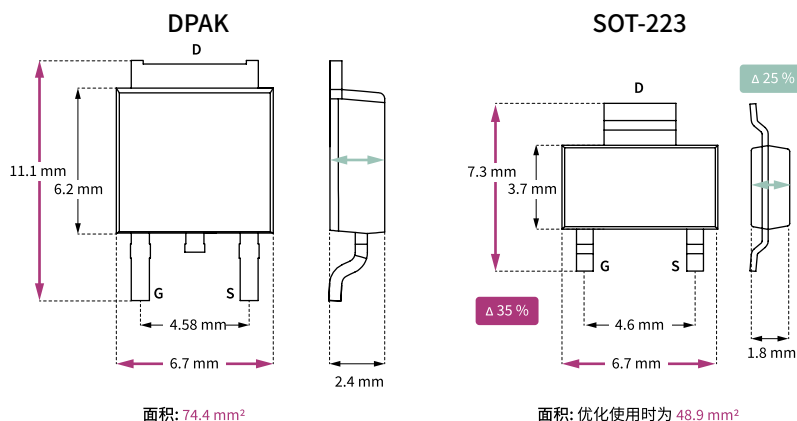
- › 提供更低MOSFET芯片温度
- › 与之前的技术相比, 效率更高
- › 改善外形, 超薄设计

高性价比的封装解决方案

- › 直接替换DPAK, 成本更低
- › 节省设计空间, 功耗低, 尺寸小
- › 相较于DPAK, 热行为更优

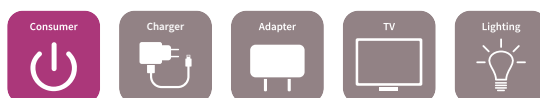
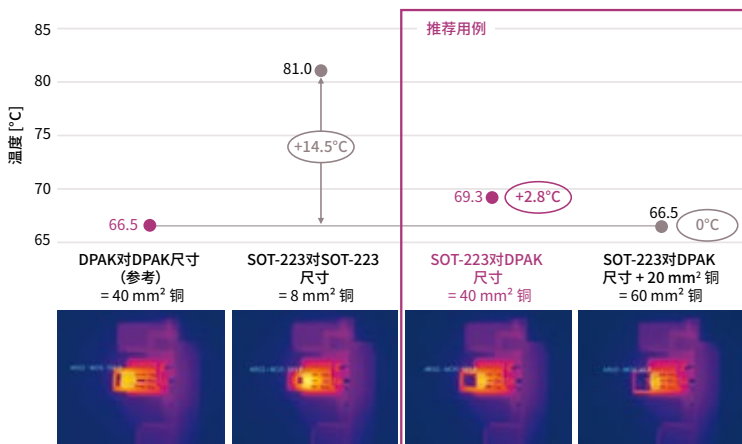
一流的性价比

- › 不仅有高性能技术, 价格更具吸引力



不采用中间管脚的SOT-223封装与DPAK的尺寸完全兼容, 因此可以进行一对一直接替换和成本较低的第二货源。

热行为与DPAK相似



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SOT-223的热行为取决于电路板布局和功耗。我们在测试环境中测量了散热，并与仿真结果进行了比较：

- › 相较于DPAK, DPAK尺寸的温度提高了 ~2°C – 3°C - 放置在标准DPAK尺寸上, SOT-223封装的温度提高了2°C到3°C。这种行为使得SOT-223适合作为 设计有温度裕量的DPAK 的替代品。
- › 与DPAK + 20 mm² 额外覆铜面积 温度相同 - 在许多 设计中, MOSFET安装在较大的 覆铜区域 (作为PCB内的 嵌入式散热器) 内。只要在DPAK尺寸外还有 20 mm² 或更大面积的铜, 未能观察到温度升高。
- › 在SOT-223尺寸上温度升高超过 10°C – 放置在不含覆铜区域的 SOT-223尺寸周围, 与DPAK相比, 此封装导致温度 升高 10°C以上。这意味着 选择通过SOT-223 节省空间 仅适用于极低功耗的应用。

多个应用的热测量由仿真证实, 环境温度 = 70°C, 功率损耗 = 250 mW。仿真 证明, 与DPAK相比, DPAK尺寸上的温度预计升高2°C至 3°C, 而对于超过20 mm²的 额外覆铜区域, 温度等于DPAK温度。

产品系列

| R _{DS(on)} [mΩ] | 标准级 | | 工业级 | |
|-----------------------------|--------------|--------------|-------------|-------------|
| | 600 V | 700 V | 800 V | 950 V |
| 4500 | | | IPN80R4K5P7 | |
| 3700 | | | | IPN95R3K7P7 |
| 3300 | | | IPN80R3K3P7 | |
| 2400 | | | IPN80R2K4P7 | |
| 2000 | | IPN70R2K0P7S | IPN80R2K0P7 | IPN95R2K0P7 |
| 1400 | | IPN70R1K4P7S | IPN80R1K4P7 | |
| 1200 | | IPN70R1K2P7S | IPN80R1K2P7 | IPN95R1K2P7 |
| 900 | | IPN70R900P7S | IPN80R900P7 | |
| 750 | | IPN70R750P7S | IPN80R750P7 | |
| 600 | IPN60R600P7S | IPN70R600P7S | IPN80R600P7 | |
| 450 | | IPN70R450P7S | | |
| 360 | IPN60R360P7S | IPN70R360P7S | | |

700 V, 800 V 和950 V CoolMOS™ P7 SJ MOSFETs针对反激拓扑结构进行了优化。600 V CoolMOS™ P7适用于硬开关和软开关 拓扑结构 (反激、PFC和LLC)。

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