



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

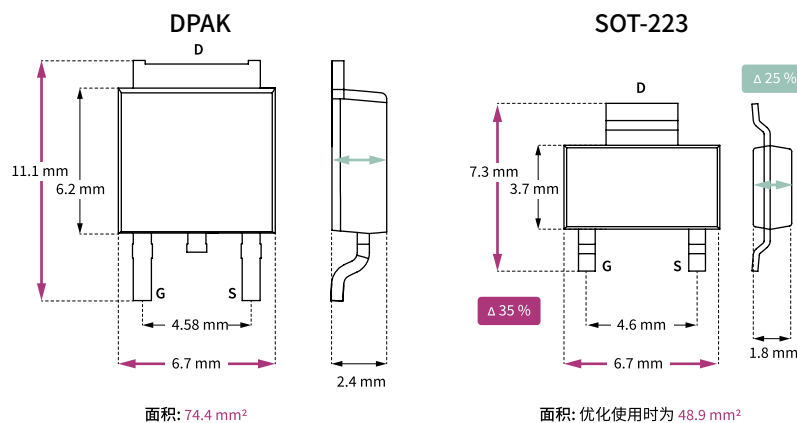
- › 提供更低 MOSFET 芯片温度
- › 与之前的技术相比, 效率更高
- › 改善外形, 超薄设计

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

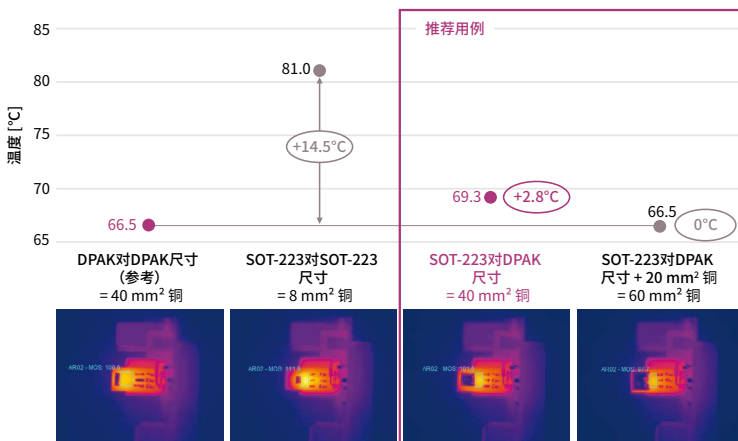
一流的性价比

- › 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
4500			IPN80R4K5P7
3300			IPN80R3K3P7
2400			IPN80R2K4P7
2000		IPN70R2K0P7S	IPN80R2K0P7
1400		IPN70R1K4P7S	IPN80R1K4P7
1200		IPN70R1K2P7S	IPN80R1K2P7
900		IPN70R900P7S	IPN80R900P7
750		IPN70R750P7S	IPN80R750P7
600	IPN60R600P7S	IPN70R600P7S	IPN80R600P7
450		IPN70R450P7S	
360	IPN60R360P7S	IPN70R360P7S	

■ 生产中 ■ 即将推出

700 V和800 V CoolMOS™ P7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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