



## 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

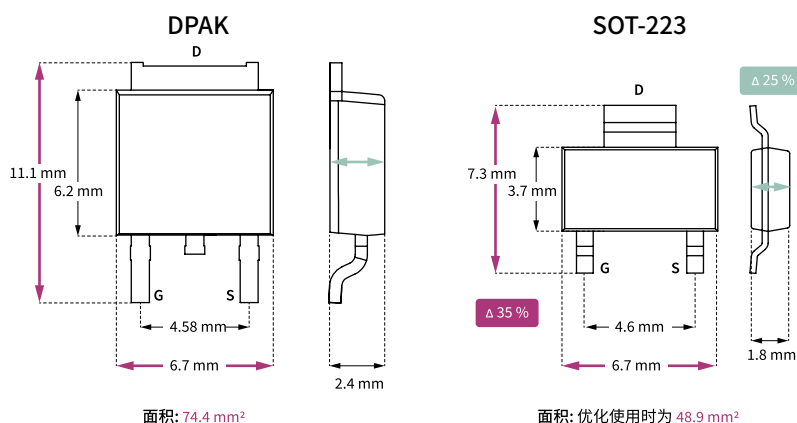
- › 提供更低 MOSFET 芯片温度
- › 与之前的技术相比, 效率更高
- › 改善外形, 超薄设计

#### 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

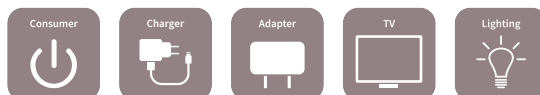
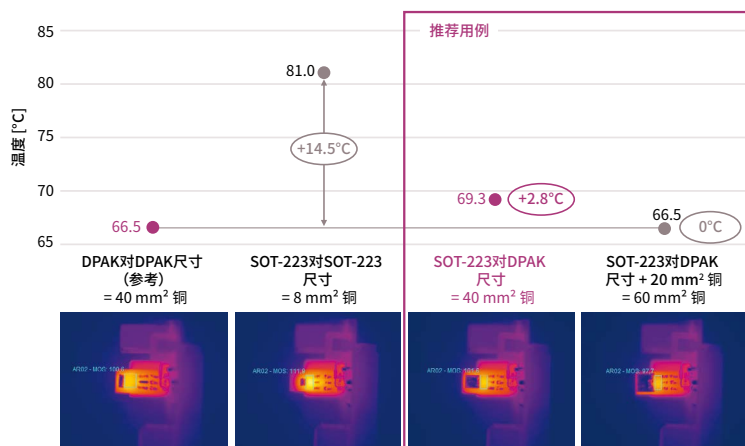
#### 一流的性价比

- › 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 mm<sup>2</sup> 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 mm<sup>2</sup> 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 mm<sup>2</sup>的 额外覆铜区域, 温度等于DPAK温度。

## 产品系列

R <sub>DS(on)</sub> [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	

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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