

## 产品简介

# 700 V CoolMOS™ P7系列

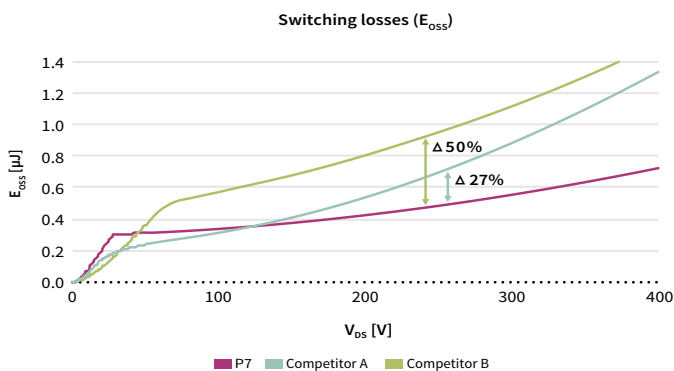
## 英飞凌对反激式拓扑结构的解答

专门针对当前以及未来的反激式拓扑结构趋势而研发 – 新型700 V CoolMOS™ P7系列旨在主攻手机充电器或和笔记本电脑适配器等低功耗SMPS市场, 与当今使用的超级结技术相比, 它可提供显著的性能提升。

通过结合客户反馈和20多年的超级结MOSFET经验, 700 V CoolMOS™ P7在以下方面有着显著的优点:

- > 效率和散热
- > 易用性
- > EMI行为

与竞争产品相比, 新型CoolMOS™ P7将开关损耗( $E_{OSS}$ )降低27%到50%, 效率提升3.9%, 更令人印象深刻的是将器件温度降低16 K。与以前的650 V CoolMOS™ C6相比, 在基于反激式的充电器应用中, 如果系统的开关速度为140 kHz, P7将效率提升2.4%并将器件温度降低12 K。



为了将抵抗ESD能力提升到HBM 2级, 700 V CoolMOS™ P7自身集成Zener二极管。有助于提高组装良率, 减少生产相关的故障并最终节省制造成本。

英飞凌在开发过程中始终牢记易用性, 因此该技术采用优异的3 V  $V_{GS(th)}$ 和 $\pm 0.5$  V偏差。使得P7很容易实现设计导入并且可以使用较低的栅源电压, 这使得P7更容易驱动并且减小待机损耗。

### 主要特性

- > 极低的FOM  $R_{DS(on)} \times E_{OSS}$ ;
- 较低的 $Q_g$ ,  $E_o$ 和 $E_{off}$
- > 高性能技术
  - 低开关损耗( $E_{OSS}$ )
  - 高效
  - 杰出的散热性
- > 允许高速开关
- > 集成Zener二极管
- > 优化的3V  $V_{GS(th)}$ ,  $\pm 0.5$  V的偏差
- > 精细的产品组合

### 主要优势

- > 富有成本竞争力的技术
- > 与C6技术相比, 效率提升高达2.4%, 且器件温度降低12 K
- > 在较高的开关速度下, 效率进一步提升
- > 支持更小的磁性器件尺寸从而降低成本
- > 抗ESD能力高达HBM 2级水平
- > 容易驱动和设计导入
- > 可以实现小体积和高功率密度设计
- > 容易选择最合适的产品

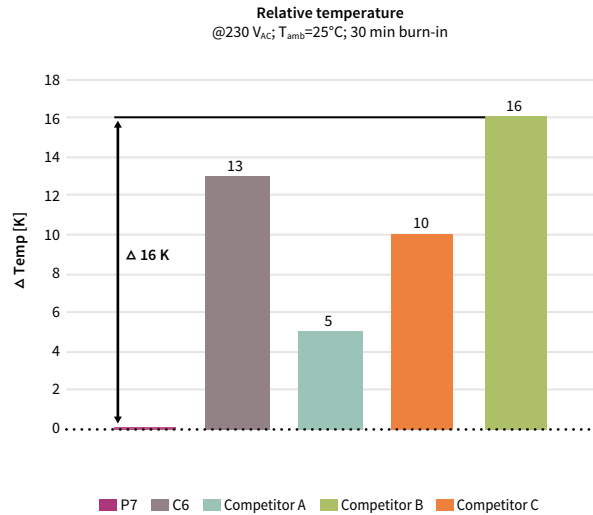
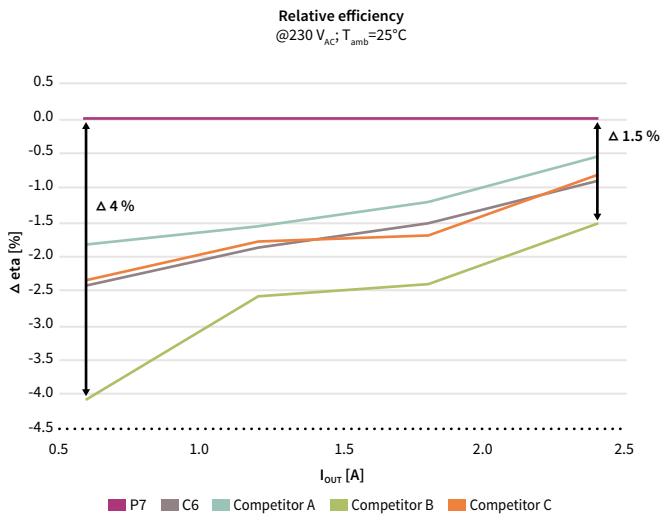


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在高端12 W充电器上即插即用对比

与竞争对手产品相比, 700 V CoolMOS™ P7可将效率提升高达4%, 器件温度降低最多16 K。



这些测量数据有力的证明700 V CoolMOS™ P7是高功率和小体积设计的正确选择。它能实现最佳的产品性能, 并且在高频下效果更明显。

### 700 V CoolMOS™ P7细分组合

ESD class		R <sub>DS(on)</sub> [mΩ]	TO-220 FullPAK	TO-220 FullPAK Narrow Lead	TO-252 DPAK	TO-251 IPAK Short Lead	TO-251 IPAK Short Lead with ISO Standoff	SOT-223
CDM	HBM							
Class C3 ≥1 kV	Class 1C 1-2 kV	2000					IPSA70R2K0P7S	IPN70R2K0P7S
		1400			IPD70R1K4P7S	IPS70R1K4P7S	IPSA70R1K4P7S	IPN70R1K4P7S
		1200					IPSA70R1K2P7S	IPN70R1K2P7S
		900	IPA70R900P7S	IPAN70R900P7S	IPD70R900P7S	IPS70R900P7S	IPSA70R900P7S	IPN70R900P7S
	Class 2 2-4 kV	750	IPA70R750P7S	IPAN70R750P7S			IPSA70R750P7S	IPN70R750P7S
		600	IPA70R600P7S	IPAN70R600P7S	IPD70R600P7S	IPS70R600P7S	IPSA70R600P7S	IPN70R600P7S
		450	IPA70R450P7S	IPAN70R450P7S			IPSA70R450P7S	IPN70R450P7S
		360	IPA70R360P7S	IPAN70R360P7S	IPD70R360P7S	IPS70R360P7S	IPSA70R360P7S	IPN70R360P7S

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