



应用简介

用于电池化成的英飞凌全频谱电源系统解决方案

日常生活所用的无线和电池供电设备越来越多，电动汽车也同样如此。不同充电容量的电池产量需求本就稳步增加，在上述趋势推动下更是动力十足。因此，电池制造商也就必须提高整个生产过程的效率，满足需求。

电池化成是电池生产必经的阶段，电池化成时，新组装的电池先以极为精确的电压和精确的电流来充放电，以便激活电池材料。化成循环对电池寿命，质量和成本都有很大的影响，但目前由于它成本高，耗时长，是目前生产的瓶颈。

英飞凌全频谱电源系统解决方案，含全面的效率和性价比双优化产品组合，能充分满足高精度，高效率和高功率密度的应用要求。

关键性能：

- › 充放电周期内的高电压和电流精度 (高达0.01%)
- › 高功率密度
- › 高效率
- › 运行期间的最佳热管理
- › 系统24/7运行，极为可靠

英飞凌的主要使能产品：

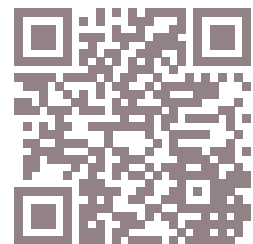
- › 低压功率MOSFET – OptiMOS™和StrongIRFET™
- › 高压功率 MOSFET – CoolMOS™
- › 栅极驱动器 IC – EiceDRIVER™
- › 分立 IGBT – TRENCHSTOP™
- › 微控制器 – XMC™

主要优点

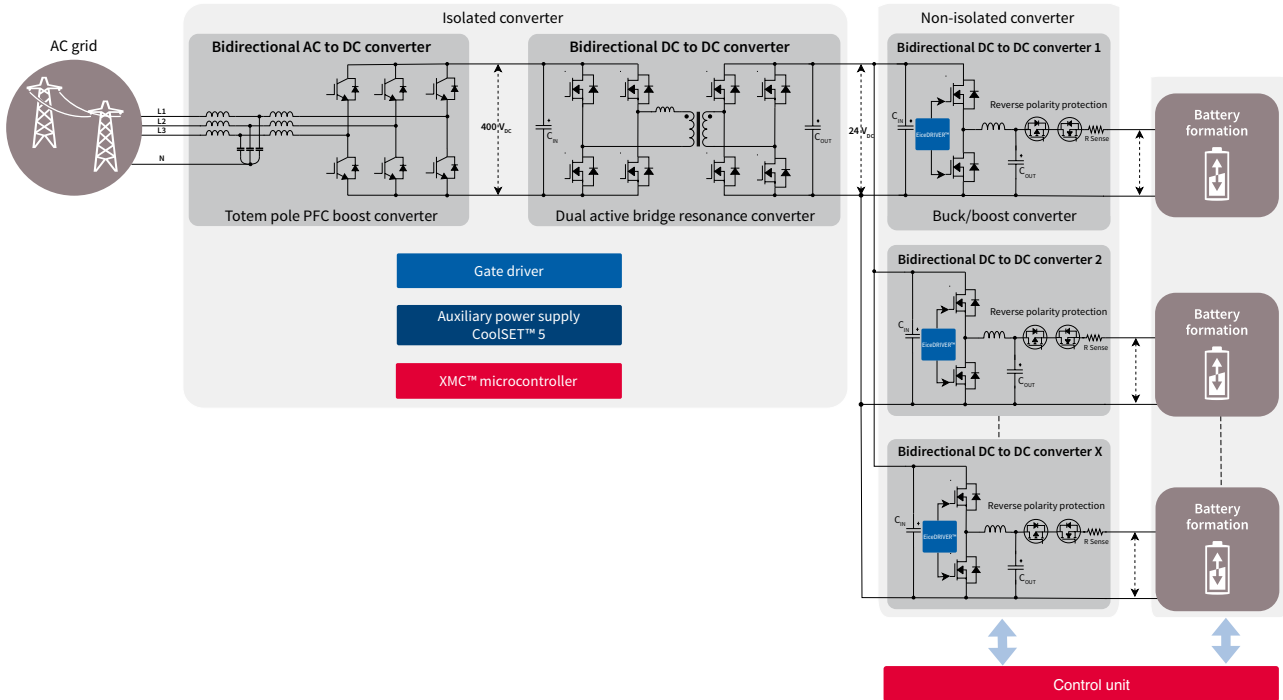
- › 高效，创新，低成本解决方案，可节省整体BOM
- › 高功率密度半导体缩减外形尺寸
- › 完整系统加快产品上市：
 - 仿真模型
 - 设计文档
 - 演示板
- › 英飞凌的质量提高了产品的使用寿命和可靠性
- › 一站式产品组合

更多信息

- › www.infineon.com/batteryformation
- › www.infineon.com/optimos
- › www.infineon.com/coolmos
- › www.infineon.com/eicedriver



系统框图 - 电池化成



AC-DC 层级: 双向变换器*			
功率	层级	CoolMOS™ 和 IGBT	Eice DRIVER™
2 kW	PFC	IPW60R090CFD7 TRENCHSTOP™ H5	2EDFx 2EDSx 2EDNx 1EDIx
4 kW		IPW60R040CFD7 TRENCHSTOP™ H5	
2 kW	隔离DC-DC 初级侧	IPW60R105CFD7	1EDIx
4 kW		IPW60R090CFD7	
辅助电源		CoolSET™ 5 - ICE5QR4780AZ	
微控制器		XMC™ 4000 系列	

隔离 DC-DC 次级侧*					
V _{out}	MOSFET 击穿电压	SMD 封装 OptiMOS™ 6 和 OptiMOS™ 5			
		D ² PAK	SSO8	TOLL	D ² PAK-7
12 V	40 V	IPB015N04L G (1.5 mΩ)	BSC007N04LS6 (0.7 mΩ)	IRL40T209 (0.7 mΩ)**	IPB011N04L (1.1 mΩ)
24 V	60 V	IPB019N06L3 G (1.9 mΩ)	BSC012N06NS (1.2 mΩ)	IPT007N06N (0.75 mΩ)	IPB014N06N (1.4 mΩ)
48 V	100 V	IPB020N10N5 (2.0 mΩ)	BSC027N10NS5 (2.7 mΩ)	IPT015N10N5 (1.5 mΩ)	IPB017N10N5 (1.7 mΩ)
96 V	150 V	IPB048N15N5 (4.8 mΩ)	BSC093N15NS5 (9.3 mΩ)	IPT059N15N3 (5.9 mΩ)	IPB044N15N5 (4.4 mΩ)
	200 V	IPB107N20N3 (10.7 mΩ)	BSC220N20NSFD (22 mΩ)	IPT111N20NFD (11.1 mΩ)	
驱动器		1EDN7550B / 2EDF7275X			
微控制器		XMC™ 4000 系列			

非隔离双向 DC-DC 层级*							
V _{in}	MOSFET 击穿电压	SMD 封装 OptiMOS™ 6 和 OptiMOS™ 5			插件封装 OptiMOS™ 和 StrongIRFET™		
		D ² PAK	SSO8	TOLL	D ² PAK-7	TO-220	TO-247
12 V	30 V	IRLS3813PbF (1.95 mΩ)	BSC011N03LS (1.1 mΩ)	IPT004N03L (0.4 mΩ)	IPB009N03L (0.95 mΩ)	IRLB3813 (1.95 mΩ)	IRFP3703 (2.8 mΩ)
24 V	40 V	IPB015N04L G (1.5 mΩ)	BSC007N04LS6 (0.7 mΩ)	IRL40T209 (0.7 mΩ)**	IPB011N04L (1.1 mΩ)	IRLB3034 (2.0 mΩ)	IRFP7430PbF (1.3 mΩ)
	60 V	IPB019N06L3 G (1.9 mΩ)	BSC012N06NS (1.2 mΩ)	IPT007N06N (0.75 mΩ)	IPB014N06N (1.4 mΩ)	IPP020N06N (2.0 mΩ)	IRFP7530 (2.0 mΩ)
48 V	100 V	IPB020N10N5 (2.0 mΩ)	BSC027N10NS5 (2.7 mΩ) BSC093N15NS5 (150 V, 9.3 mΩ)	IPT015N10N5 (1.5 mΩ)	IPB017N10N5 (1.7 mΩ)	IPP023N10N5 (2.3 mΩ)	IRF100P219 (1.7 mΩ)
96 V	200 V	IPB107N20N3 (10.7 mΩ)	BSC220N20NSFD (22 mΩ)	IPT111N20NFD (11.1 mΩ)		IPP110N20N3 (11 mΩ)	IRF200P222 (6.6 mΩ)
驱动器		1EDN7550B / 2EDF7275X					

*针对特定封装的业界最佳产品 **StrongIRFET™

Published by
Infineon Technologies Austria AG
9500 Villach, Austria

© 2019 Infineon Technologies AG.
All rights reserved.

Order number: B131-I0794-V1-5D00-AP-EC-P
Date: 03 / 2019

Please note!

THIS DOCUMENT IS FOR INFORMATION PURPOSES ONLY AND ANY INFORMATION GIVEN HEREIN SHALL IN NO EVENT BE REGARDED AS A WARRANTY, GUARANTEE OR DESCRIPTION OF ANY FUNCTIONALITY, CONDITIONS AND/OR QUALITY OF OUR PRODUCTS OR ANY SUITABILITY FOR A PARTICULAR PURPOSE. WITH REGARD TO THE TECHNICAL SPECIFICATIONS OF OUR PRODUCTS, WE KINDLY ASK YOU TO REFER TO THE RELEVANT PRODUCT DATA SHEETS PROVIDED BY US. OUR CUSTOMERS AND THEIR TECHNICAL DEPARTMENTS ARE REQUIRED TO EVALUATE THE SUITABILITY OF OUR PRODUCTS FOR THE INTENDED APPLICATION.

WE RESERVE THE RIGHT TO CHANGE THIS DOCUMENT AND/OR THE INFORMATION GIVEN HEREIN AT ANY TIME.

Additional information

For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office (www.infineon.com).

Warnings

Due to technical requirements, our products may contain dangerous substances. For information on the types in question, please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by us in a written document signed by authorized representatives of Infineon Technologies, our products may not be used in any life-endangering applications, including but not limited to medical, nuclear, military, life-critical or any other applications where a failure of the product or any consequences of the use thereof can result in personal injury.