



## Product Brief

# 800 V CoolSET™

## AC-DC integrated power stage

### Quasi resonant CoolSET™

The quasi resonant CoolSET™ series continues to deliver design agility and miniaturization. Upon the successful F3 CoolSET™, it offers the possibility of higher efficiency and better EMI performance. The digital frequency reduction feature scores a very stable operation with decreasing load change.

### Fixed frequency CoolSET™

Infineon's AC-DC integrated power stage 800 V CoolSET™ fixed frequency offers lowest standby power consumption < 300 mW at no load condition and lowest on-resistance for record efficiency levels. 650 V or 800 V avalanche rugged CoolMOS™ Power MOSFET is integrated optionally.

### Quasi-resonant CoolSET™ 800 V

$P_{out}^{1)}$ 85 V <sub>AC</sub> ... 265 V <sub>AC</sub>	18 W	24 W	37 W	47 W
$R_{DS(on)}$	4.7 Ω	2.2 Ω	1.0 Ω	0.6 Ω
Package	800 V depletion CoolMOS™			
DIP-7	ICE2QR4780Z	ICE2QR2280Z ICE2QR2280Z-1		ICE2QR0680Z
DSO-12	ICE2QR4780G	ICE2QR2280G ICE2QR2280G-1	ICE2QR1080G	ICE2QR0680Z

<sup>1)</sup> Output power assume 78-83% efficiency.  $T_a = 50^\circ\text{C}$ ,  $T_j = 125^\circ\text{C}$  and no copper area for 650 V device and 232 mm<sup>2</sup> copper area for 800 V device.

### Fixed frequency PWM IC and CoolSET™ 800 V

$P_{out}^{2)}$ 85 V <sub>AC</sub> ... 265 V <sub>AC</sub>	11 W	16 W	22 W	30 W	37 W	43 W
$R_{DS(on)}$	10.0 Ω	4.7 Ω	2.2 Ω	1.5 Ω	1.0 Ω	0.6 Ω
Package	800 V depletion CoolMOS™					
DIP-7	ICE3AR10080JZ ICE3AR10080CJZ	ICE3AR4780JZ ICE3AR4780VJZ ICE3AR4780CJZ	ICE3AR2280JZ ICE3AR2280JZ-T ICE3AR2280CJZ ICE3AR2280VJZ ICE3BR2280JZ	ICE3AR1580VJZ	ICE3AR1080VJZ	ICE3AR0680JZ ICE3AR0680VJZ ICE3BR0680JZ
DSO-12		ICE3AR4780JG	ICE3AR2280JG		ICE3AR1080JG	

<sup>2)</sup> Output power assume 76-83% efficiency.  $T_a = 50^\circ\text{C}$ ,  $T_j = 125^\circ\text{C}$  and no copper area

### Product highlights

#### 800 V quasi-resonant CoolSET™

- > Digital frequency reduction with decreasing load
- > Cycle-by-cycle current limitation with fold-back correction
- > Built-in digital soft-start
- > Active burst mode for lowest standby power < 50 mW
- > Latch-off mode for short-winding and output voltage
- > Enhanced integrated protection functions

#### 800 V fixed frequency CoolSET™

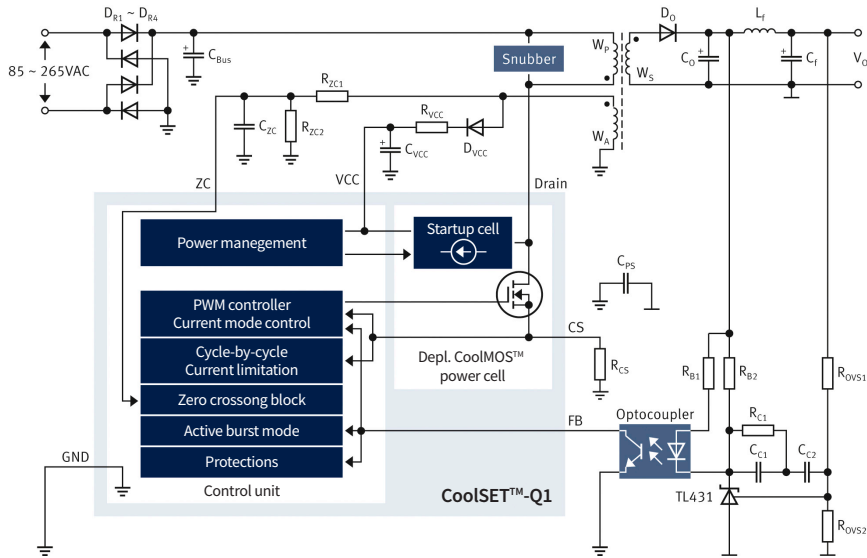
- > 800 V avalanche rugged CoolMOS™ with startup cell
- > Active burst mode to reach the lowest standby power < 100 mW
- > Selectable enter and exit burst mode level
- > Adjustable blanking window for high load jumps
- > Frequency jitter and soft driving for low EMI



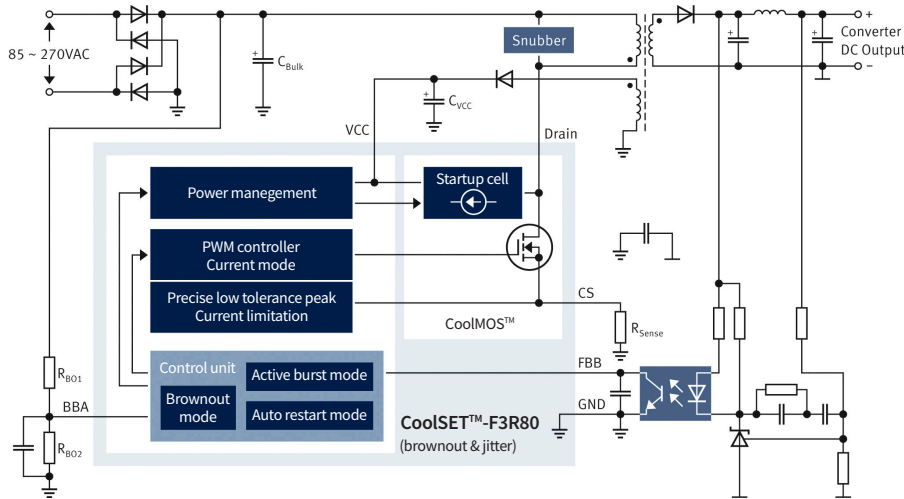
# 800 V CoolSET™

## AC-DC integrated power stage

Application diagram – 800 V quasi-resonant CoolSET™



Application diagram – 800 V fixed frequency CoolSET™



Published by  
Infineon Technologies AG  
85579 Neubiberg, Germany

© 2016 Infineon Technologies AG.  
All Rights Reserved.

Visit us:  
[www.infineon.com](http://www.infineon.com)

Order Number: B121-H9546-V1-7600-EU-EC-P  
Date: 05/2016

**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](http://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.



## Стандарт Электрон Связь

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

### Наши контакты:

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331