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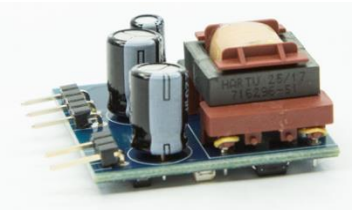
Bias supply DC-DC KIT_6W_12V_BIAS_ICE3

Auxiliary supply solution featuring off-line SMPS current mode controller IC CoolSET™ with integrated 650 V CoolMOS™

Di Domenico Francesco (IFAT PMM ACDC AE)
Zechner Florian (IFAT PMM ACDC AE)
Rev. 1.1

Description
KIT_6W_12V_BIAS_ICE3



Ordering code:
KIT_6W_12V_BIAS_ICE3

Board components

- CoolSET™ (ICE3RBR4765JZ)

Board specifications

- Input voltage: 90 V_{DC} - 400 V_{DC}
- Output voltage: 12 V_{DC} (prim. and sec. side)
- Output power max.: 6 W (prim. + sec. side)

To be used with the following boards

- EVAL_800W_ZVS_FB_CFD7
- EVAL_2KW_ZVS_FB_CFD2
- EVAL_2KW_ZVS_FB_CFD7
- EVAL_2.5KW_CCM_4PIN
- EVAL_2K5W_CCM_4P_V2

Bill of materials

Part	Value	Pcs*	Remark	Device	Package
R5	1100092; 47	1		R-EU_R0805	R0805
R4, R6	1100124; 1k	2		R-EU_R0805	R0805
R3	1100131; 2k	1		R-EU_R0805	R0805
R1, R2	1100581; 560	2		R-EU_MELF0207R	MINI_MELF-0207R
C8	1100965; 1,5n	1		C-EUC0805	C0805
C5	1100985; 100n	1		C-EUC0805	C0805
R7	1R2	1		MMA02040C1208FB300	MINI_MELF-0204R
PCB1	6W_BIAS-Supply	1		PCB_NUTZEN	PCB-NUTZEN
D1, D4	10BQ100	2		MBRS1100T3	SMB
C6	22µ/25V	1		CPOL-EUE2.5-6	E2,5-6
C3	33p/3000V	1		C-EUC1808	C1808
C2	100n/500V	1		C-EUC1210	C1210
C1, C4	220µ/25V	2		CPOL-EUE5-8.5	E5-8,5
C7	220n/16V	1		C-EUC0805	C0805
Q1	BC847C	1		BC847	SOT23
D6	BZX84-B13,215	1		BZX84	SOT23
TR1	HARTU-716296-51	1		HARTU-716296-51	EF-16_
IC1	ICE3RBR4765JZ	1	Infineon component	ICE3RBR4765JZ	PG-DIP-7-4
D5	LL4448	1		LL4448	MINIMELF
D2	LYT679	1		LEDT679	P-LCC-2
X2, X4	PINHEAD-1X01/90	2		PINHEAD-1X01/90	PINHEAD-1X01/90
X3	PINHEAD-1X02/90	1		PINHEAD-1X02/90	PINHEAD-1X02/90
X1	PINHEAD-1X03/90	1		PINHEAD-1X03/90	PINHEAD-1X03/90
D3	SMAJ15	1		SMAZ	SMA

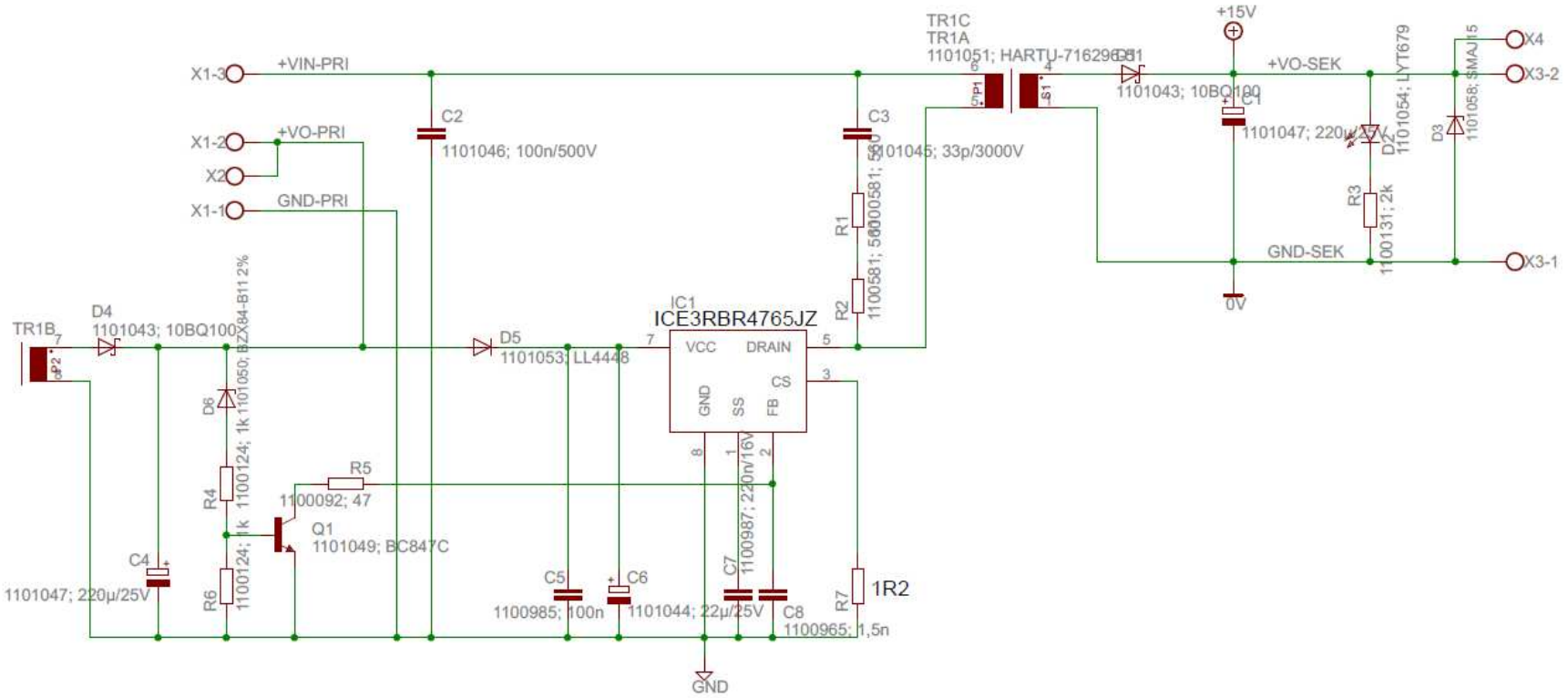
Product features

CoolSET™ ICE3RBR4765JZ

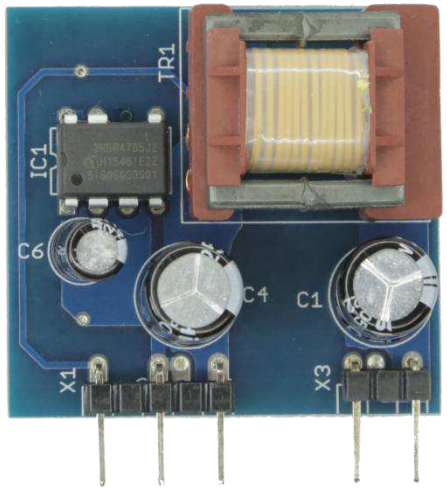
Off-line SMPS current mode controller IC with integrated 650 V CoolMOS™ and start-up cell in DIP-7 package. It has a more robust design and can work to -40°C. The outstanding performance includes BiCMOS technology, active burst mode, built-in frequency jitter, soft gate driving, propagation delay compensation, built-in soft start time, built-in blanking time and extendable blanking time for over load protection, external auto-restart enable feature, etc.

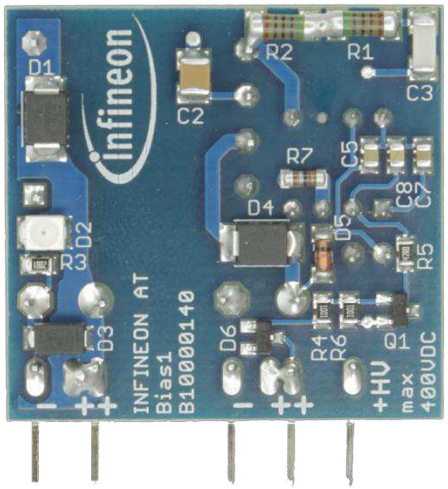
- 650 V avalanche rugged CoolMOS™ with built-in start-up cell
- Active burst mode for lowest standby power
- Fast load jump response in active burst mode
- 65 kHz internally fixed switching frequency
- Auto restart protection mode for overload, open loop, V_{CC} under voltage, over temperature and over voltage
- Built-in soft start
- Built-in blanking window with extendable blanking time for short duration high current

Schematic



Base board
KIT_6W_12V_BIAS_ICE3





~35mm

~37mm

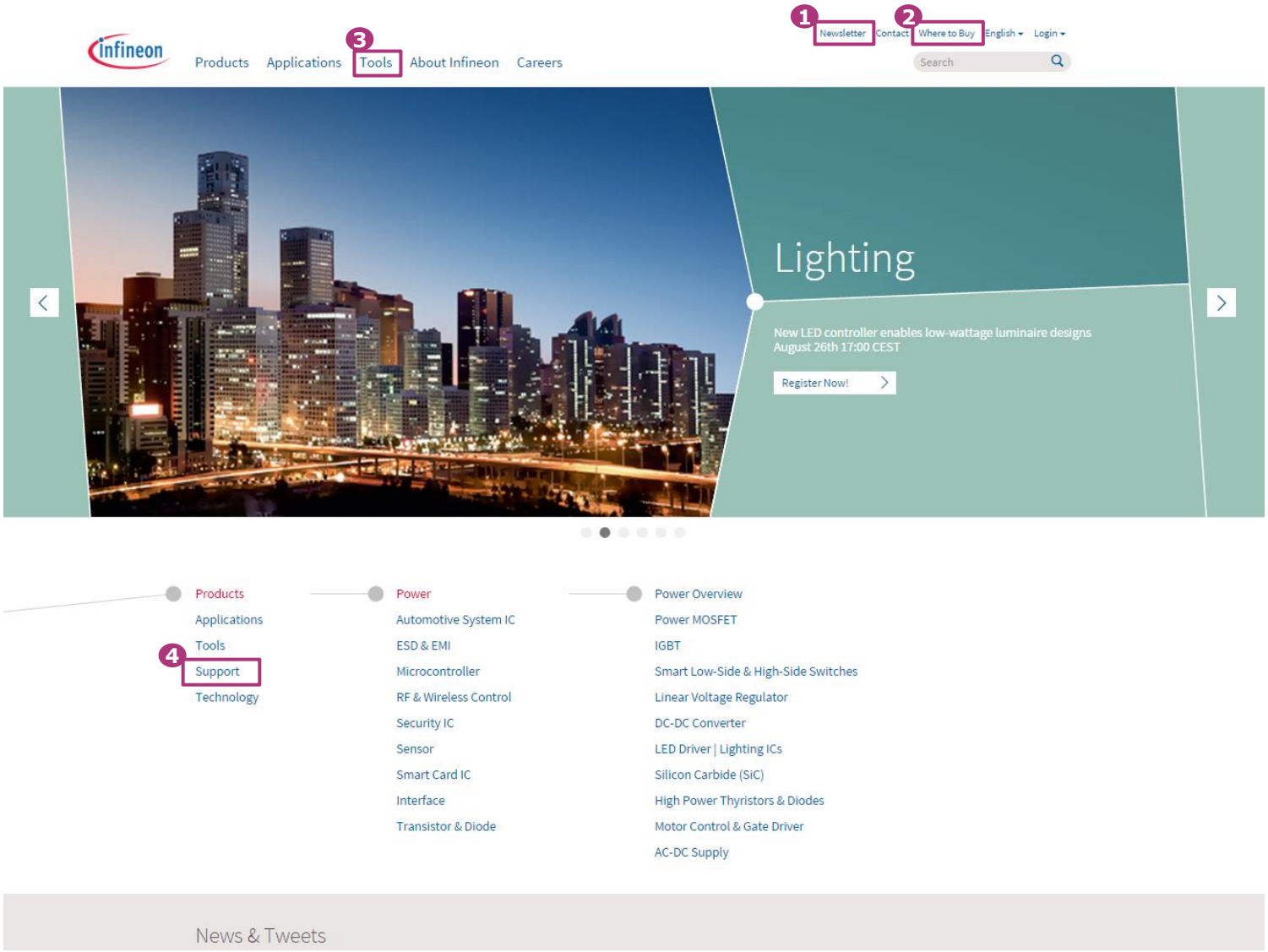
Ordering code:
KIT_6W_12V_BIAS_ICE3

Auxiliary supply solution featuring off-line SMPS current mode controller IC CoolSET™ with integrated 650 V CoolMOS™

Support

Technical Material	› Application Notes › Simulation Models › Datasheets › PCB Design Data	› EVAL_2KW_ZVS_FB_CFD2 › EVAL_2K5W_CCM_4P_V2
Evaluation Boards	› Evaluation Boards › Demoboards › Reference Designs	› www.infineon.com/evaluationboards
Videos	› Technical Videos › Product Information Videos	› www.infineon.com/mediacenter

Support
Online tools and services



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