

O P441 Ar h dk k n QoanoC e a

BA 2 PQNAO

- Wide 4.5V-18V Input Voltage Range
- 0.6V-7V Output Voltage Range
- 5A Continuous Output Current
- Integrated 42m /17m Rdson of HS/LS Power MOSFETs
- Fixed 1ms Soft-start Time
- Selectable 400KHz, 800KHz and 1.2MHz Switching Frequencies
- Selectable PFM and USM Operation Modes
- Cycle-by-Cycle Current Limiting
- Output Over-Voltage Protection
- Over-Temperature Protection
- Available in a QFN 12-leads 2mmx3mm Package

AO NELPEK

The SCT2250 is a high efficiency synchronous step-down DC-DC converter with 4.5V-18V input voltage range and adjustable output voltage down to 0.6V. It offers a small saving 2mmx3mm QFN package that supplies continuous 5A output current. The device fully integrates high-side and low-side power MOSFETs with 42m /17m on-resistance to minimize the conduction loss.

2 LLHE 2 PEK O

- High End DTV
- Set-top Box, XDSL Modem, Personal Video Recorders
- Server, Cloud-Computing, Storage
- Telecom & Networking, Small-cell Base Stations, Point-of-Load (POL)
- IPCs, Factory Automation

The converter requires a minimum number of external components and is available in a QFN- 12 (2mmx3mm) package.

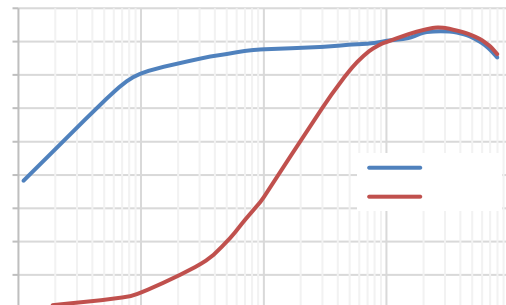
Board Number	IC Number
EV2250-B-04A	SCT2250

LANBKNI 2 AOQI I 2 NU

Table 1. Performance

Specifications are at TA = 25 °C

Parameter	Condition	Value
Input Voltage	DC up to V	4.5V-18V
Output Voltage		1V ± 1%
Output Current	Continuous DC current	5A
Frequency	Default	800KHz





MQE G OP NP LNK AOQNA

Evaluation board EV2250-B-04A

O DAI 2 PE E2 CN2 I

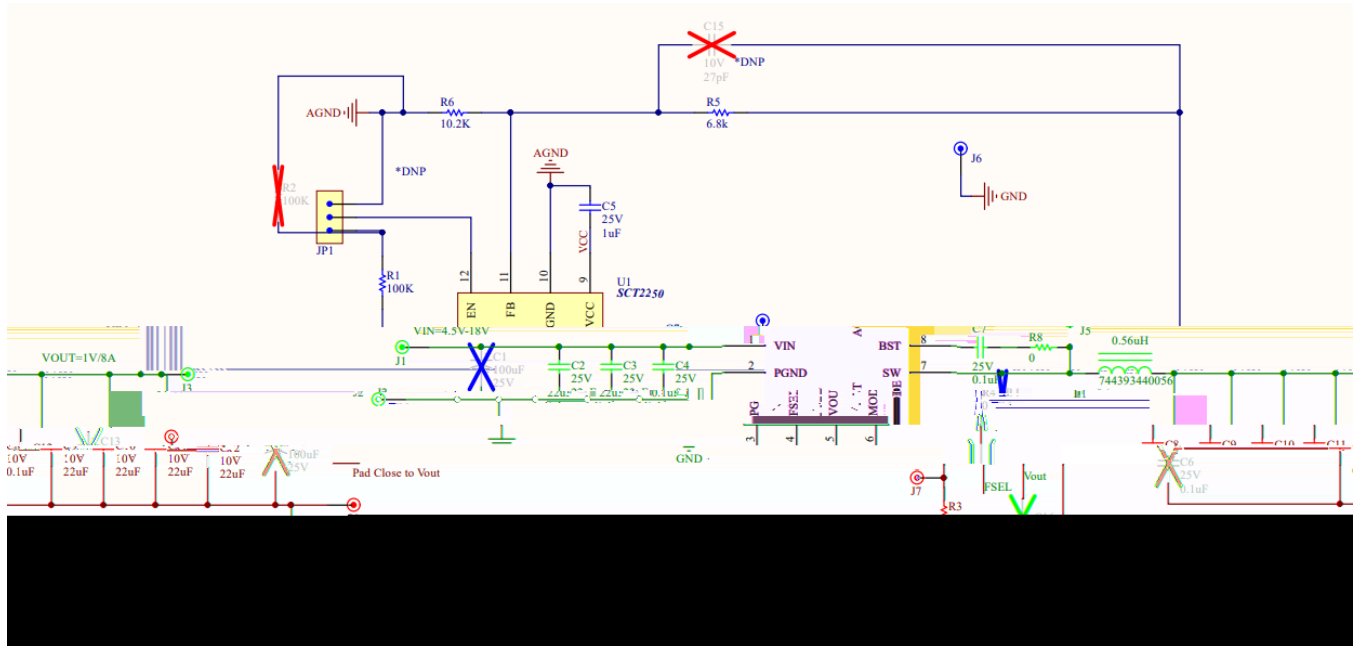


Figure 3. Evaluation Board Schematic

HHKBI 2 PANE2 HO

Table 2. Bills of Materials

Manufacture	Comment	Designator	Description	Quantity
PANASONIC	Not Install	C1 C13,	100uF, 35V, 10mm*12.5mm (DxL),F=5mm	0
Wurth Elektronik	885 012 109 014	C2, C3,	22uf, 25V, 1210	2
Wurth Elektronik	885 012 206 071	C4, C7	0.1uF, 25V, 0603	2
Wurth Elektronik	885 012 206 020	C8	0.1uF, 10V, 0603	1
Wurth Elektronik	885 012 106 022	C5	1uF, 25V, 0603	1
Wurth Elektronik	Not Install	C6	0.1uF, 10V, 0603	0
Wurth Elektronik	885 012 109 010	C9, C10, C11, C12	22uf, 16V, 1210	4
YAGEO	Not Install	C15	27pF,50V,0603	0
Wurth Elektronik	Not Install	C16	0.1uF, 10V, 0603	0
	Terminal 2.1	J1, J2, J3, J4	terminal	4
	Terminal 1.1	J5, J6, J7	terminal	3
Wurth Elektronik	613 003 111 21	JP1, JP2, JP3	Header, 100mil, 3x1, Tin plated, TH	3
Wurth Elektronik	744 393 440 056	L1	Inductor, Shielded, 0.56uH, 16A, 3.19mohms, SMT	1
YAGEO	RC0603TR-071100K	R1, R3	100K 1% 0603	2
YAGEO	Not Install	R2	100K 1% 0603	0
YAGEO	Not Install	R4	10ohm 1% 0603	0
YAGEO	RC0603FR-076K8L	R5	6.8k 1% 0603	1
YAGEO	RC0603FR-0710K2L	R6	10.2k 1% 0603	1
YAGEO	RC0603FR-070RL	R8	0 1% 0603	1
SCT	SCT2250	U1	SCT2280	1

LNE PA EN QBP K 2 N H 2 UKQP

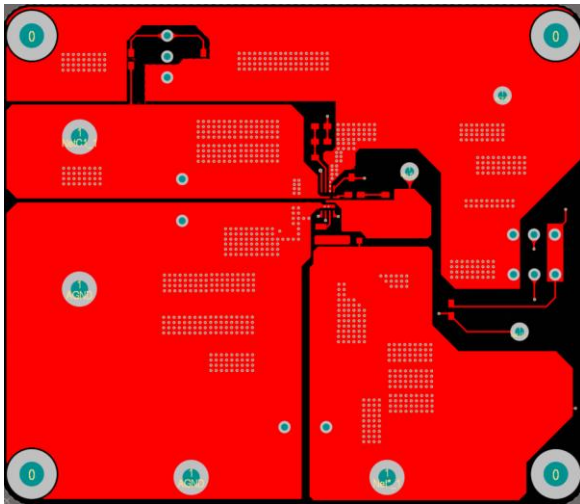


Figure 4. Top Layer

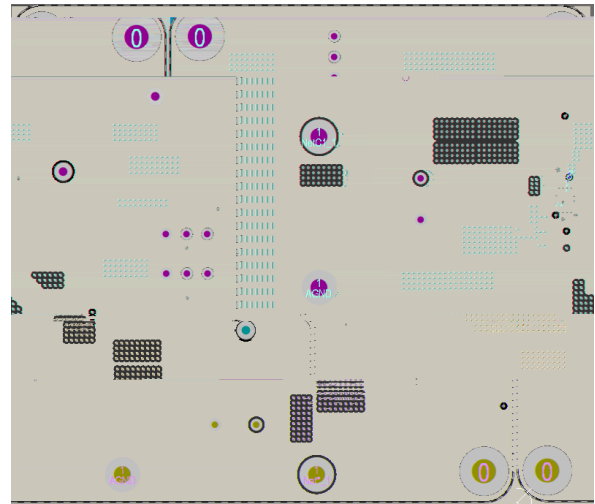


Figure 5. Inner Layer1

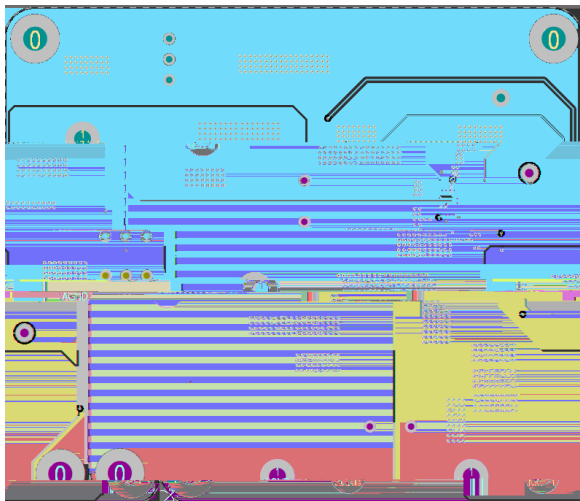


Figure 6. Inner Layer2

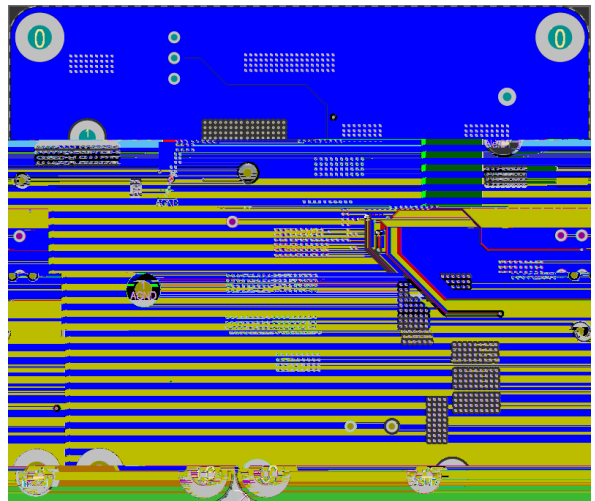


Figure 7. Bottom Layer

AR PAOP NAOQHPO

Vin=12V, Vout=1V, 5A loading, unless otherwise noted

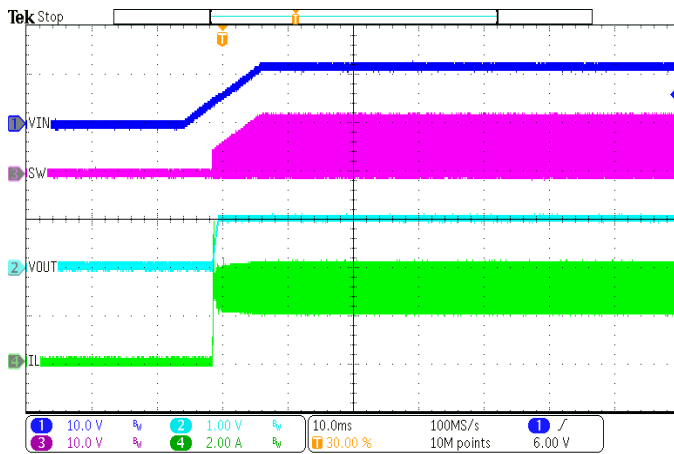


Figure 8. Power Up

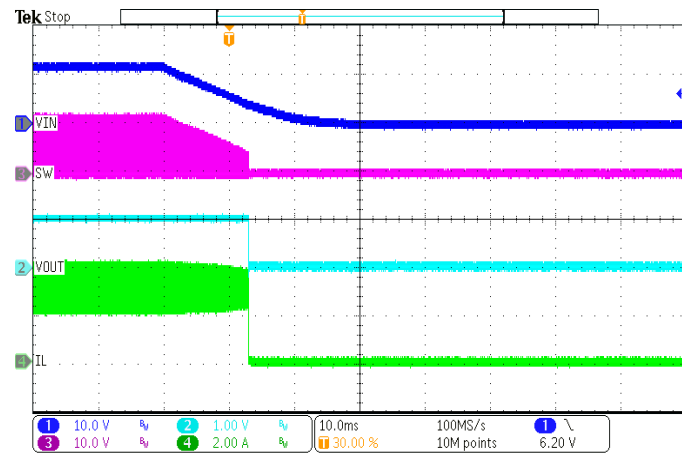


Figure 9. Power Down

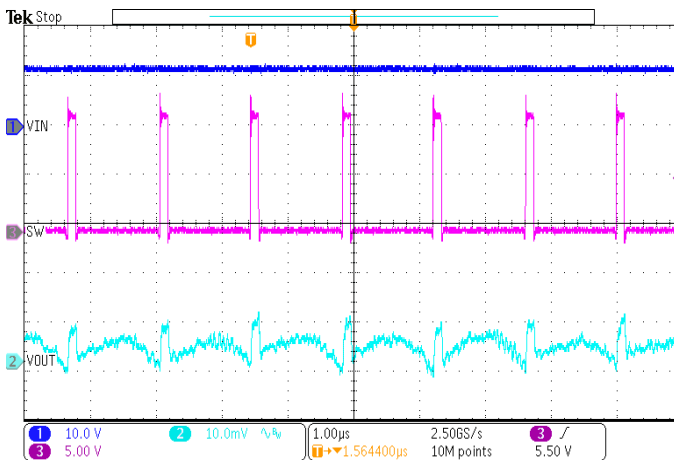


Figure 10. Switching Waveforms and Output Ripple
Iout=0.1A

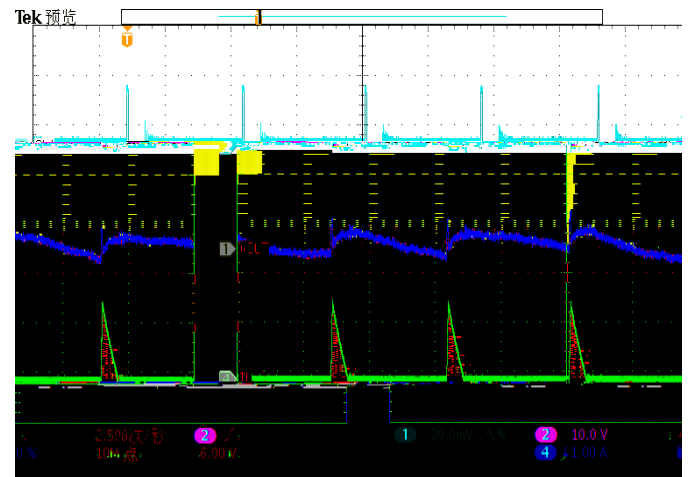


Figure 11. Switching Waveforms and Output Ripple in PFM
Iout=600mA

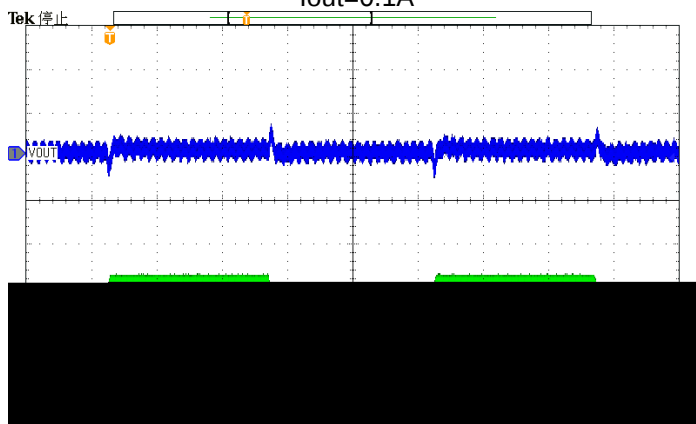


Figure 12. Load Transient
(0.2A-7.8A, SR=250mA/us)

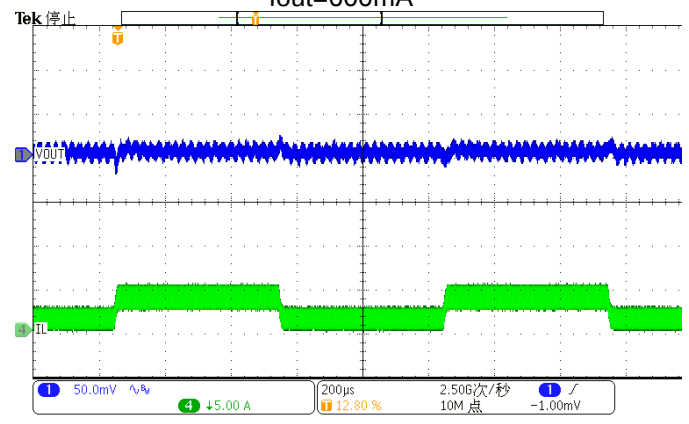


Figure 13. Load Transient
(0.2A-0.4A, SR=250mA/us)

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