

- Wide 4.5V-18V Input Voltage Range
 - 0.6V-7V Output Voltage Range
 - 5A Continuous Output Current
 - Integrated 42mΩ /17mΩ R_{ds(on)} 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
-
- 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 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 42mΩ /17mΩ on-resistance to minimize the conduction loss.

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

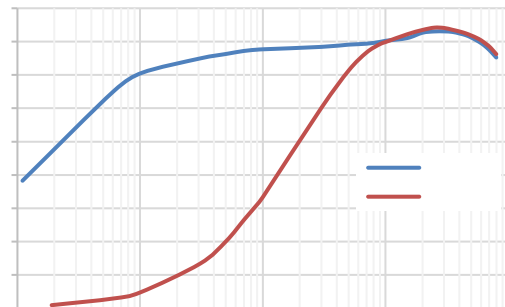
Table 1. Performance

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



EV2250-B-04A



Efficiency vs. Output Voltage



Evaluation board EV2250-B-04A is easy to set up to evaluate the perfor-10(0 rd)-35.3bcrd 1(t-22(p)-TQq0.00000912 0 612 7

Figure 3. Evaluation Board Schematic

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 Electronik	885 012 109 014	C2, C3,	22uf, 25V, 1210	2

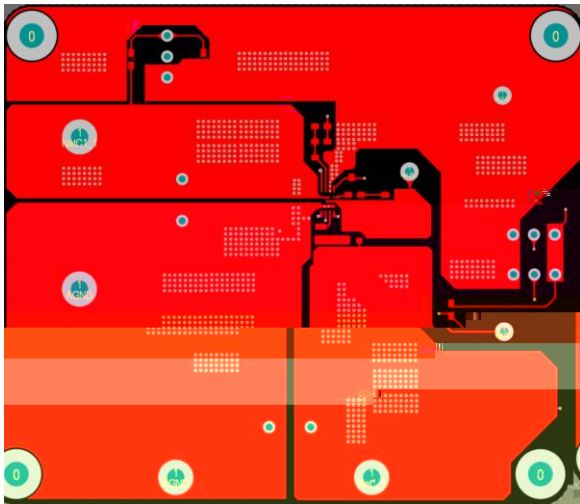


Figure 4. Top Layer

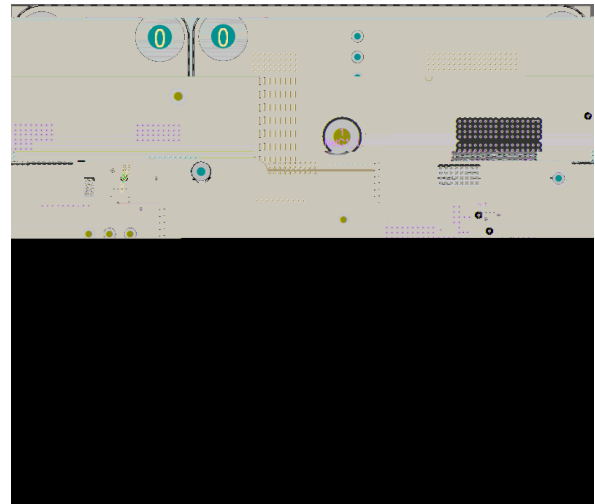


Figure 5. Inner Layer1

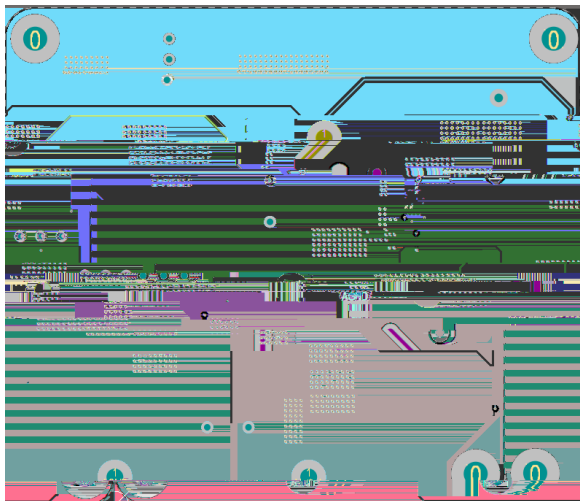


Figure 6. Inner Layer2

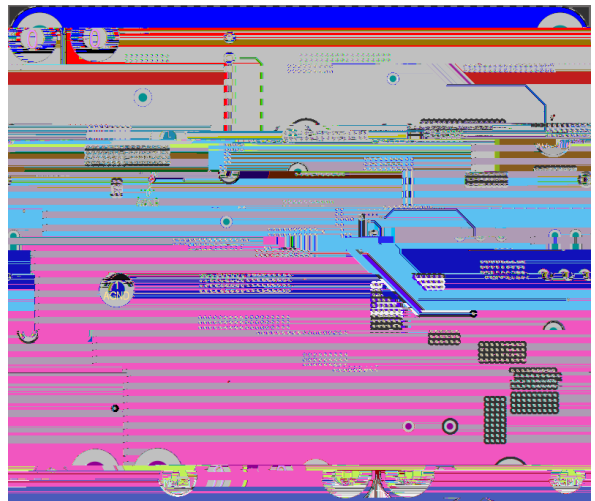


Figure 7. Bottom Layer

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

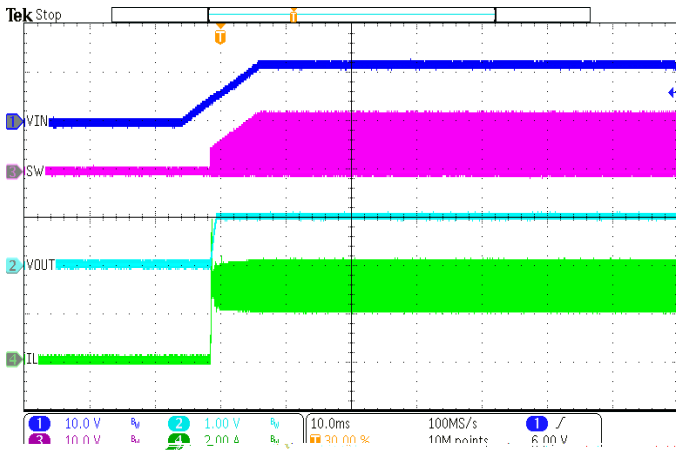


Figure 8. Power Up

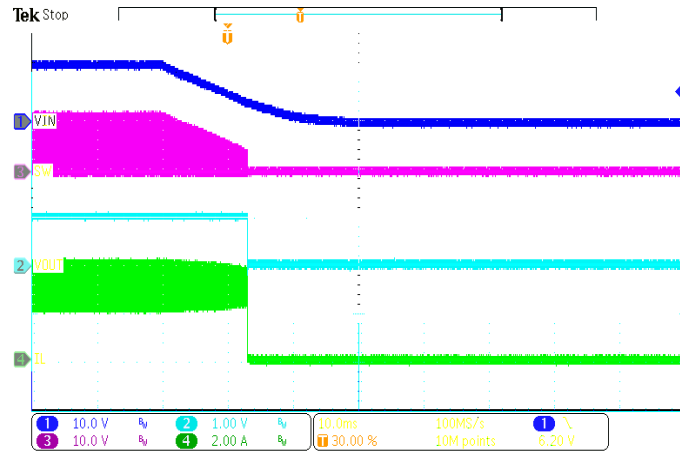


Figure 9. Power Down

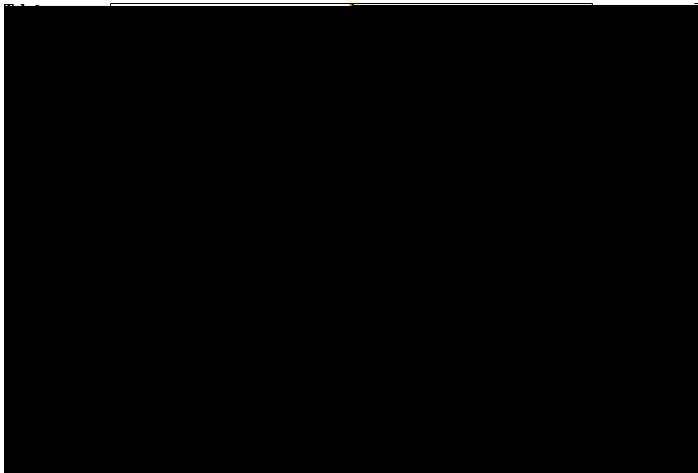


Figure 10. Switching Waveforms and Output Ripple
Iout=0.1A

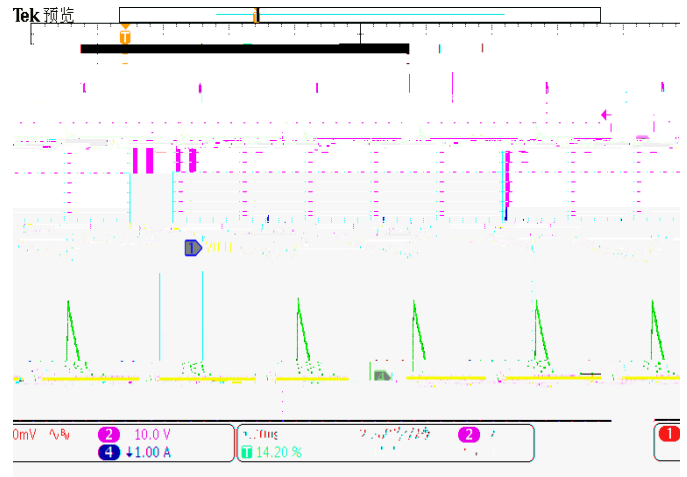


Figure 11. Switching Waveforms and Output Ripple in PFM
Iout=600mA

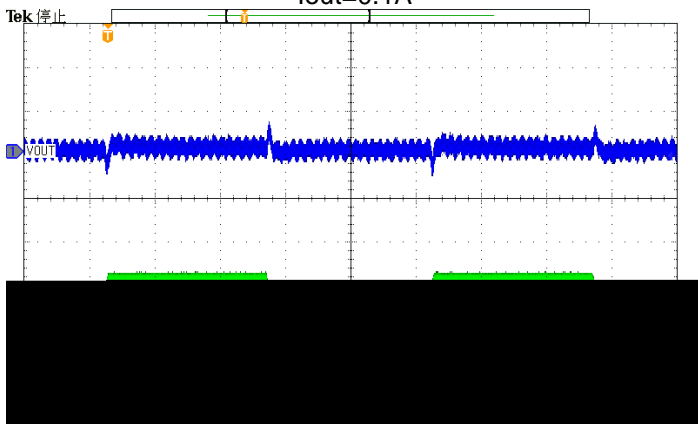


Figure 12. Load Transient
(0.2A-7.8A, SR=250mA/us)

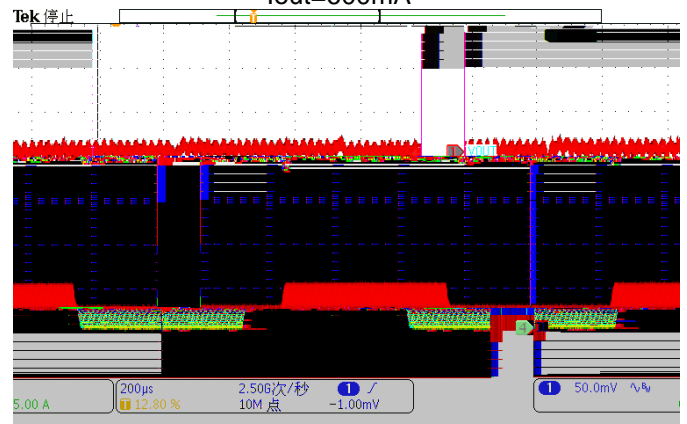


Figure 13. Load Transient
(0.2A-0.4A, SR=250mA/us)



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