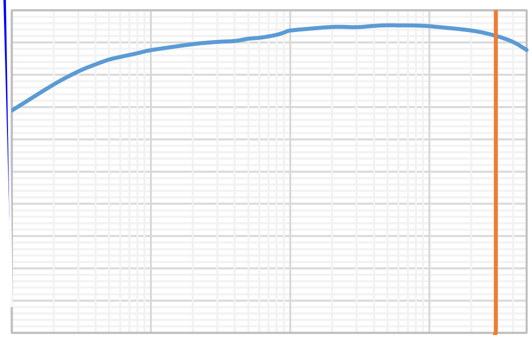
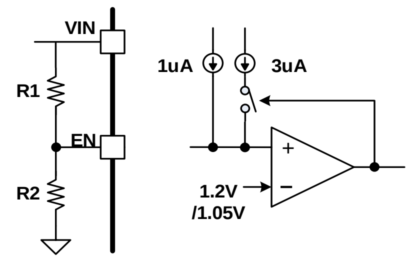


Overview

Peak Current Mode Control



$$1 = \frac{0.875 -}{3.125}$$

$$2 = \frac{{}_{1} \times 1.05}{- 1.05 + {}_{1} \quad 4}$$

-
-

Output Voltage

±

$$= (\text{——} - 1)$$

-
-

Internal Soft-Start

Bootstrap Voltage Regulator and Low Drop-out Operation

$$(max\quad) = \frac{}{} \times \left(\frac{\times \quad + \quad + }{- \quad \times \quad (\quad) +}\right)$$

Over voltage Protection

Thermal Shutdown

Typical Application

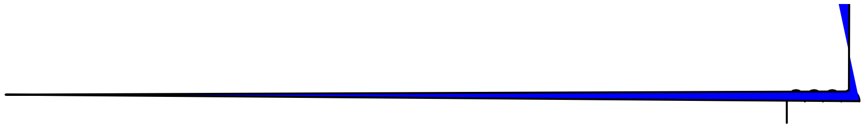


Figure 11. SCT2450C Design Example, 3.3V Output with Programmable UVLO

Design Parameters

Design Parameters	Example Value

Output Voltage

VOUT	R5	R6

$_5 = (\frac{}{} - 1) \quad _6$

-

Inductor Selection

$$= \frac{(\quad - \quad)}{\quad}$$

$$= \frac{\quad}{\quad (\quad)} \left(1 - \frac{\quad}{\quad (\quad)}\right)$$

$$= \quad + \frac{\quad}{2}$$

$$= \sqrt{(\quad)^2 + \frac{1}{12}(\quad)^2}$$

Diode Selection

$$= \frac{(\quad _{-} \quad - \quad) \times \quad \times}{_{-}} + \frac{\times \quad \times (\quad + \quad)^2}{2}$$

Input Capacitor Selection

$$I_{CINRMS} = I_{OUT} \quad \sqrt{\frac{V_{OUT}}{V_{IN}} \quad (1 - \frac{V_{OUT}}{V_{IN}})}$$

$$I_{CINRMS} = 0.5 \quad I_{OUT}$$

$$=$$

$$_1 = \frac{1}{2 \qquad _7} = \frac{}{2 \qquad _7}$$

$$_2 = \frac{1}{2} = \frac{}{2}$$

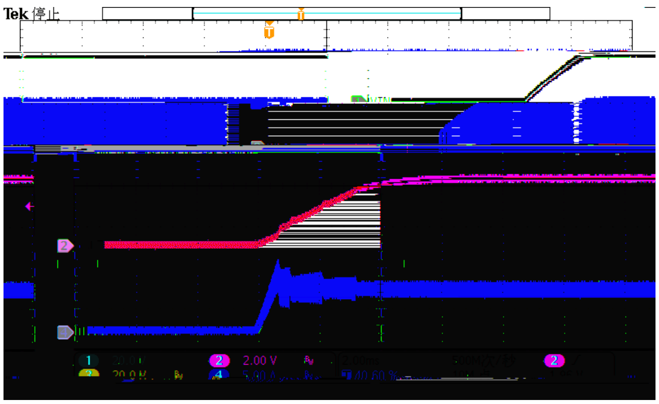
•

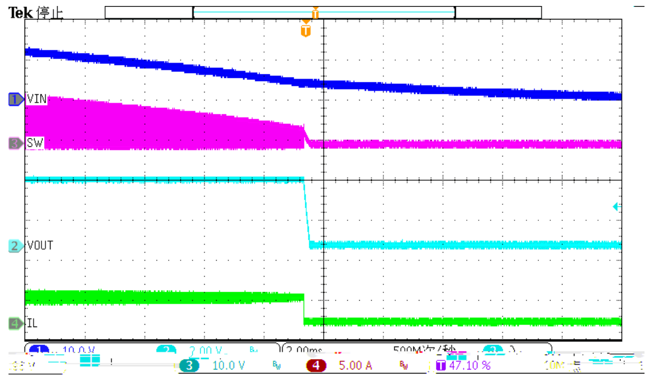
Table 3: Compensation Values for Typical Output Voltage/Capacitor Combinations at fsw=500KHz

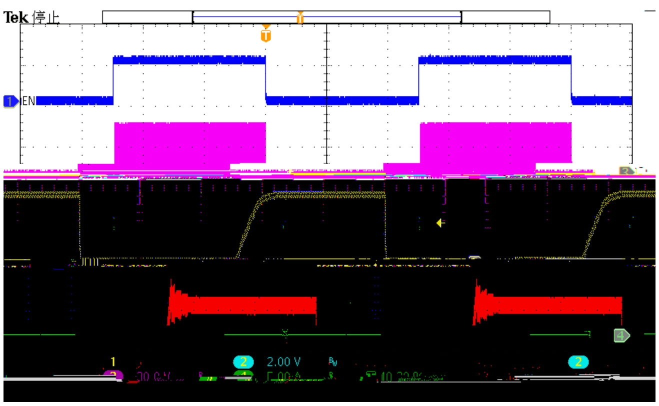
Vout	L1	COUT	R4	C7	C6
2.5V	4.7uH	4*47uF	16.9K	4.7nF	68pF (optional)
3.3V	5.5uH	4*47uF	20K	4.7 nF	47pF (optional)
5V	7.8uH	4*47uF	33.2K	3.3nF	22pF (optional)
12V	10uH	4*47uF	53.6K	1nF	220pF
24V	15uH	4*47uF	105k	1nF	

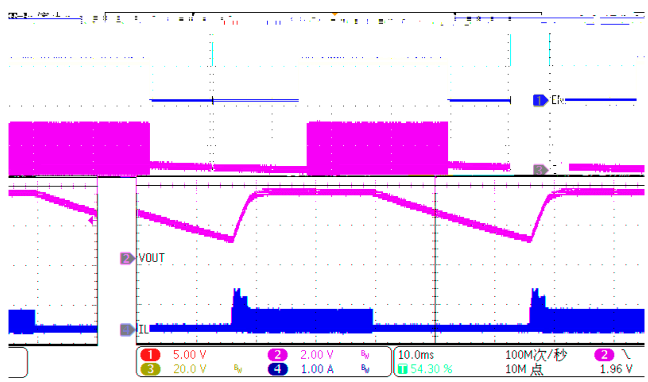
Inverting Power application

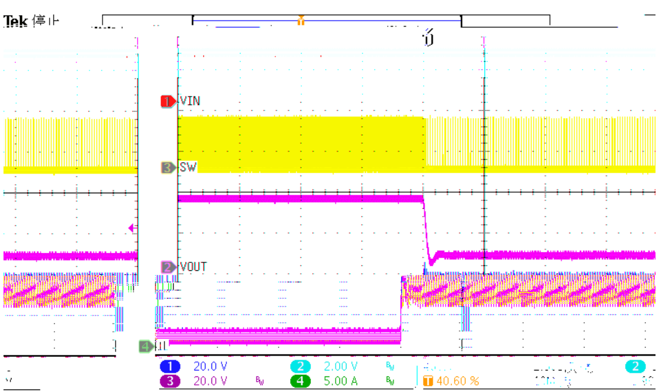
Application Waveforms

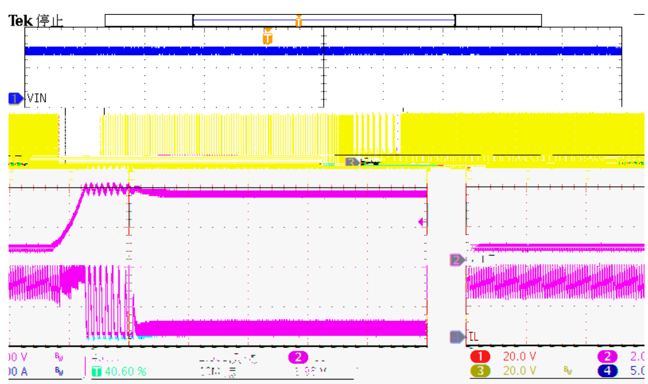




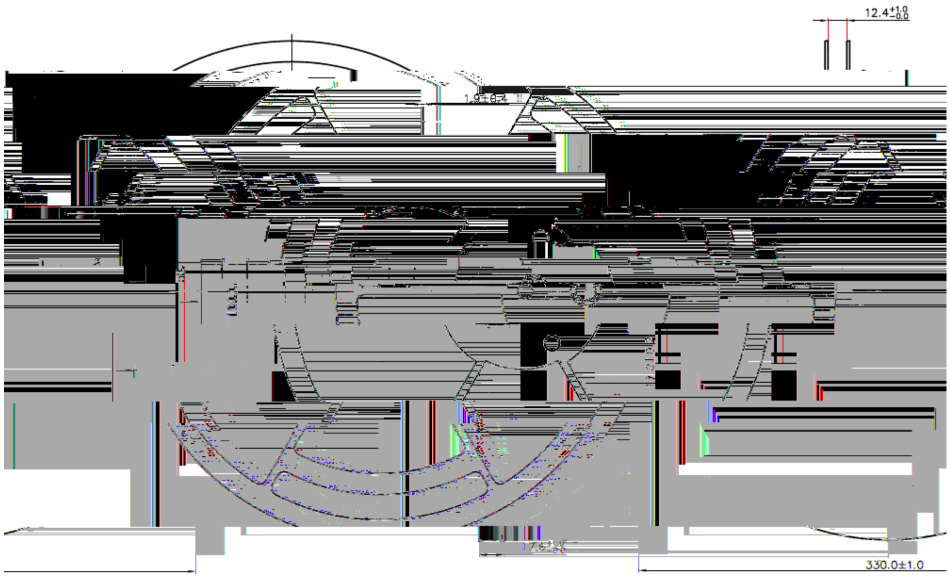


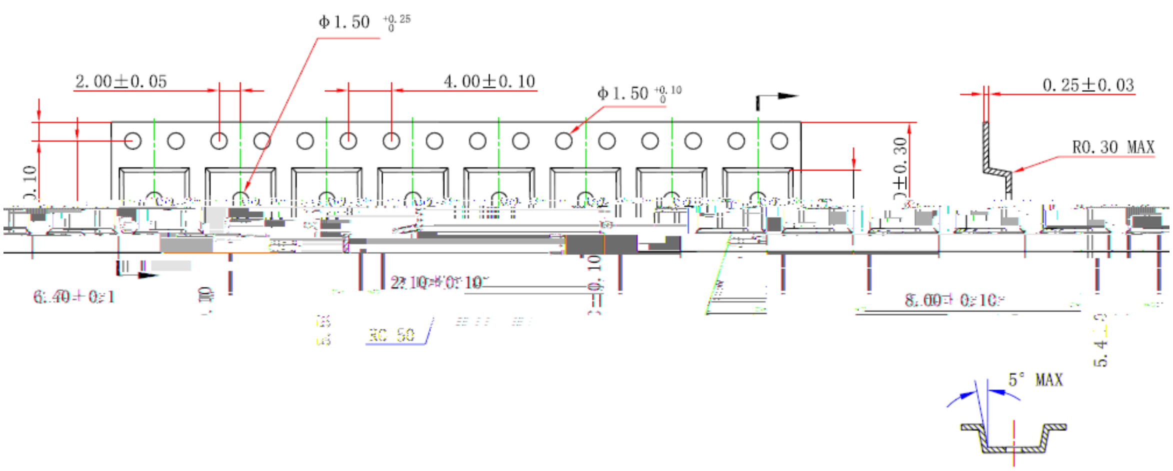






Application Waveforms(continued)


12.4+1.0 -0.0
330.0±1.0


Φ1.50 +0.25 0
2.00±0.05
4.00±0.10
Φ1.50 +0.10 0
0.25±0.03
R0.30 MAX
5° MAX