
3.8V-28V Vin, 3A Synchronous Step-down DCDC Converter with EMI Reduction**FEATURES**

- Spread 6% Frequency

SCT2330C

REVISION HISTORY

DEVICE ORDER INFORMATION

ORDERABLE DEVICE	PACKAGING TYPE	STANDARD PACK QTY	PACKAGE MARKING	PINS	PACKAGE DESCRIPTION

ABSOLUTE MAXIMUM RATINGS

Over operating free-air temperature unless otherwise noted⁽¹⁾

PIN CONFIGURATION

SW	5	Switching node of the buck converter.
BST	6	Power supply for the high-side power MOSFET gate driver. Must connect a 0.1uF or greater ceramic capacitor between BST pin and SW node.

RECOMMENDED OPERATING CONDITIONS

PARAMETER	DEFINITION	MIN	MAX	UNIT

TYPICAL CHARACTERISTICS

OPERATION

Overview

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Bootstrap Voltage Regulator

Low Drop-out Regulation

Thermal Shutdown

APPLICATION INFORMATION

Typical Application

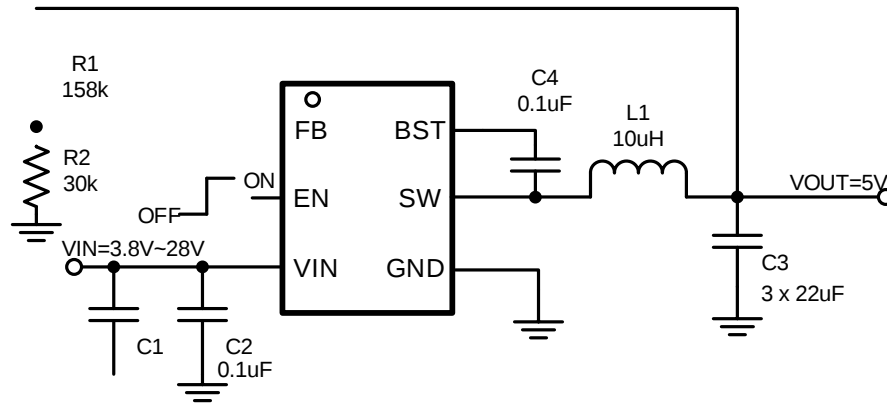


Figure 11. 24V Input, 5V/3A Output

Design Parameters

Design Parameters	Example Value
Input Voltage	24V
Output Voltage	5V
Output Current	3A
Output voltage ripple (peak to peak)	±8mV
Switching Frequency	400kHz

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Output Feed-Forward Capacitor Selection

$$= \frac{1}{2 \cdot \times_1} \quad (10)$$

Output Feedback Resistor Divider Selection

$$_1 = \frac{(\quad - \quad) \times_2}{\quad} \quad (11)$$

Application Waveforms (Continued)

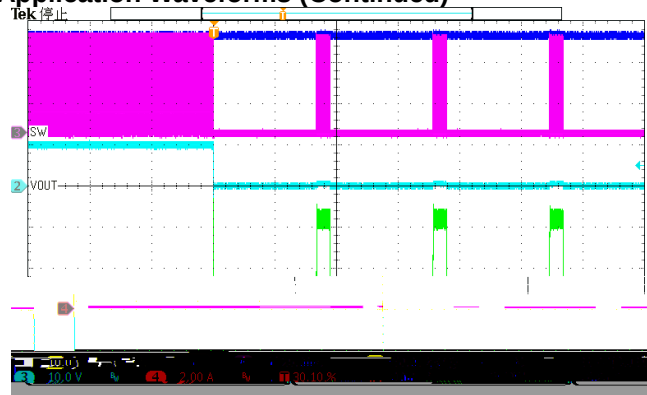


Figure 18. Over Current Protection(0A to hard short)

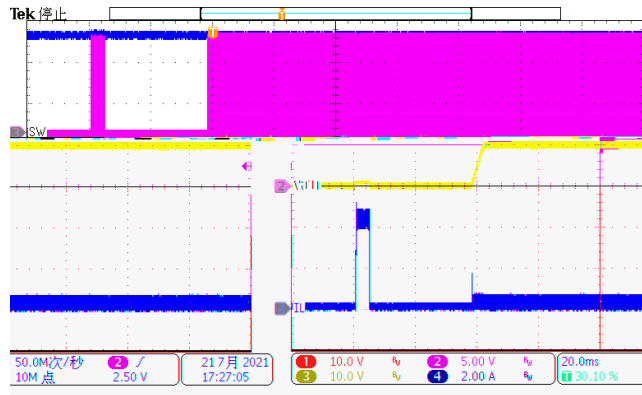


Figure 19. Over Current Release (hard short to 0A)

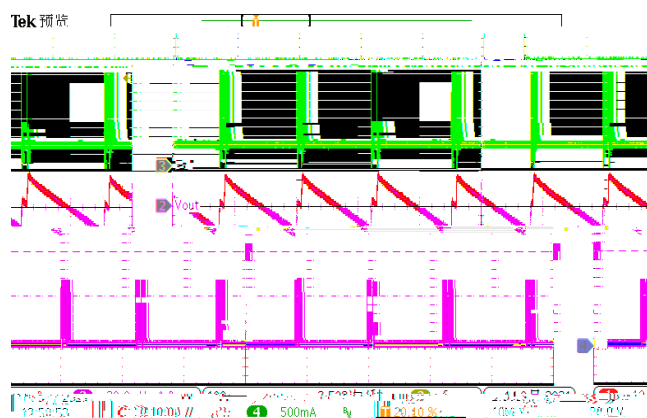


Figure 20. Output Ripple (Iload=10mA)

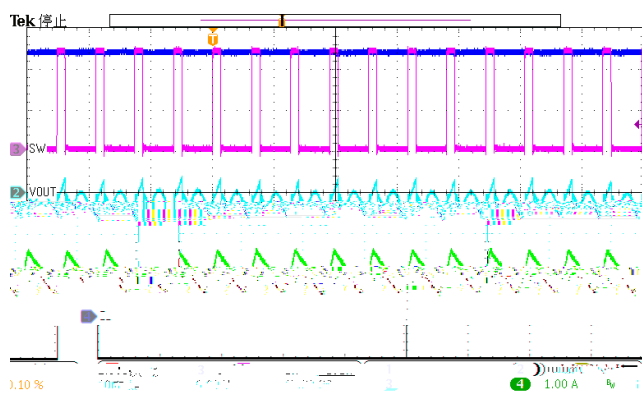


Figure 21. Output Ripple (Iload=1A)

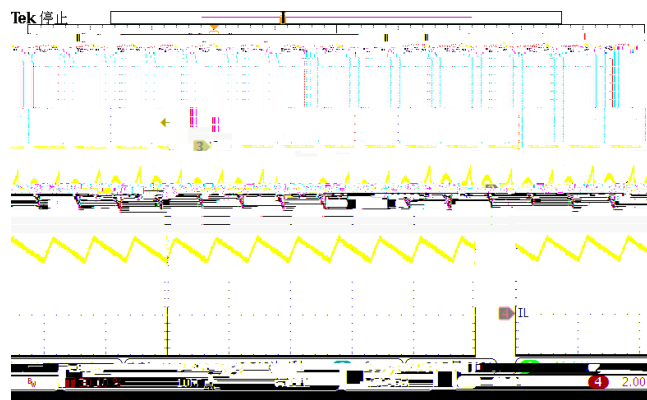
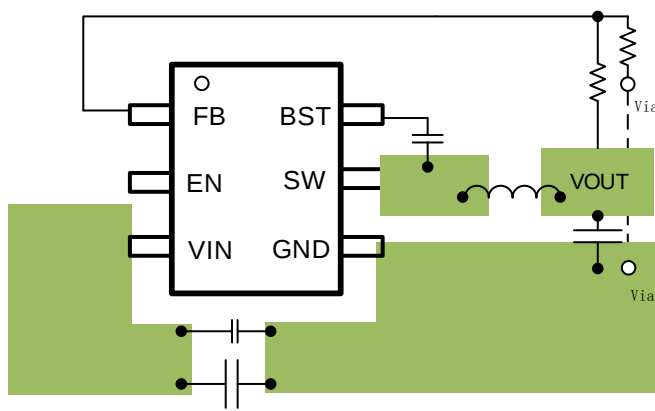


Figure 22. Output Ripple (Iload=3A)



Figure 23. Thermal, 24VIN, 5Vout, 3A

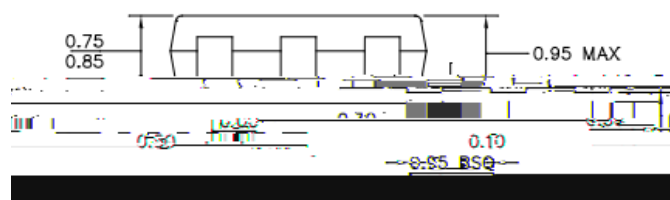
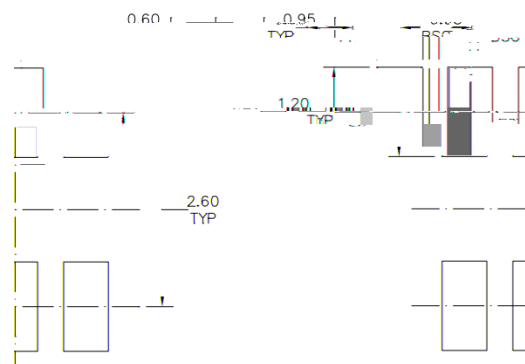
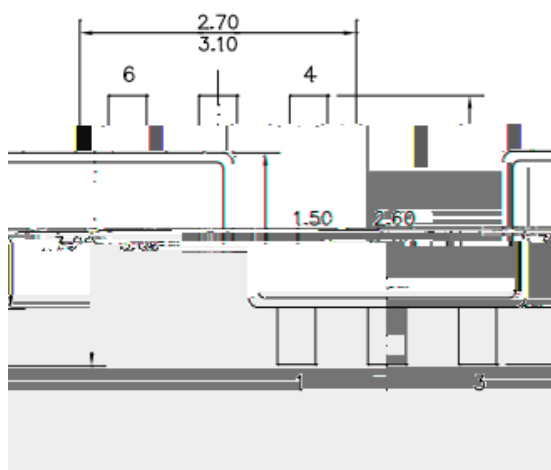
Layout Guideline



Thermal Considerations

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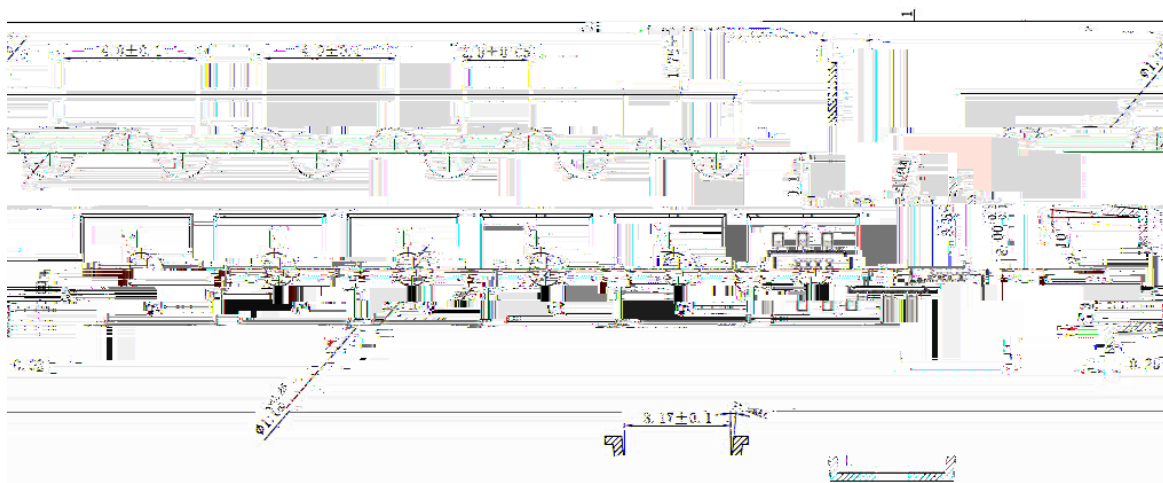
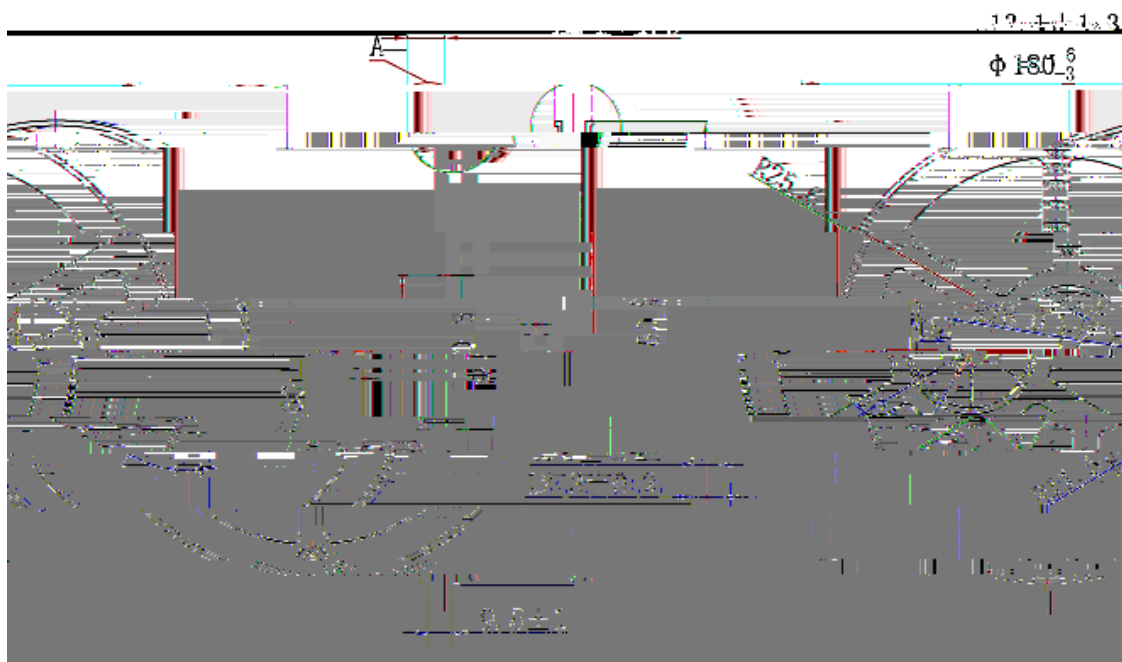
PACKAGE INFORMATION



NOTE:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

TAPE AND REEL INFORMATION



Feeding Direction

