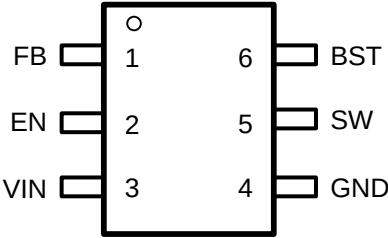


$\pm 6\%$  Frequency

|                |               |                 |                 |      |                  |
|----------------|---------------|-----------------|-----------------|------|------------------|
| H = : E<br>= B | I: D: BG<br>I | : G=: =<br>I: D | I: D:<br>F: DBG | I BG | I: D:<br>= B BIG |
|                |               |                 |                 |      |                  |

Over operating free-air temperature unless otherwise noted<sup>(1)</sup>

| DESCRIPTION                                   | MIN  | MAX | UNIT |
|-----------------------------------------------|------|-----|------|
| BST                                           | -0.3 | 38  | V    |
| VIN, SW, EN                                   | -0.3 | 32  | V    |
| FB                                            | -0.3 | 5.5 | V    |
| Operating junction temperature <sup>(2)</sup> | -40  | 125 | °C   |
| Storage temperature T <sub>STG</sub>          | -65  | 150 | °C   |



Top View: TSOT23-6L, Plastic

(1)  
(2)

| G: F | GH | I BG G BIG                                                                                                                                                                                                                                                                                             |
|------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FB   | 1  | Buck converter output feedback sensing voltage. Connect a resistor divider from VOUT to FB to set up output voltage. The device regulates FB to the internal reference of 0.8V typical.                                                                                                                |
| EN   | 2  | Enable logic input. Floating the pin enables the device. This pin supports high voltage input up to VIN supply to be connected VIN directly to enable the device automatically. The device has precision enable thresholds 1.18V rising / 1.1V falling for programmable UVLO threshold and hysteresis. |
| VIN  | 3  | Power supply input. Must be locally bypassed.                                                                                                                                                                                                                                                          |
| GND  | 4  | Power ground. Must be soldered directly to ground plane.                                                                                                                                                                                                                                               |

|     |   |                                                                                                                                         |
|-----|---|-----------------------------------------------------------------------------------------------------------------------------------------|
| 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. |

|        |           |      |    |    |
|--------|-----------|------|----|----|
| I: : F | = EGB B G | F EG | F: | GB |
|        |           |      |    |    |
|        |           |      |    |    |

|        |           |      |    |    |
|--------|-----------|------|----|----|
| I: : F | = EGB B G | F EG | F: | GB |
|        |           |      |    |    |
|        |           |      |    |    |

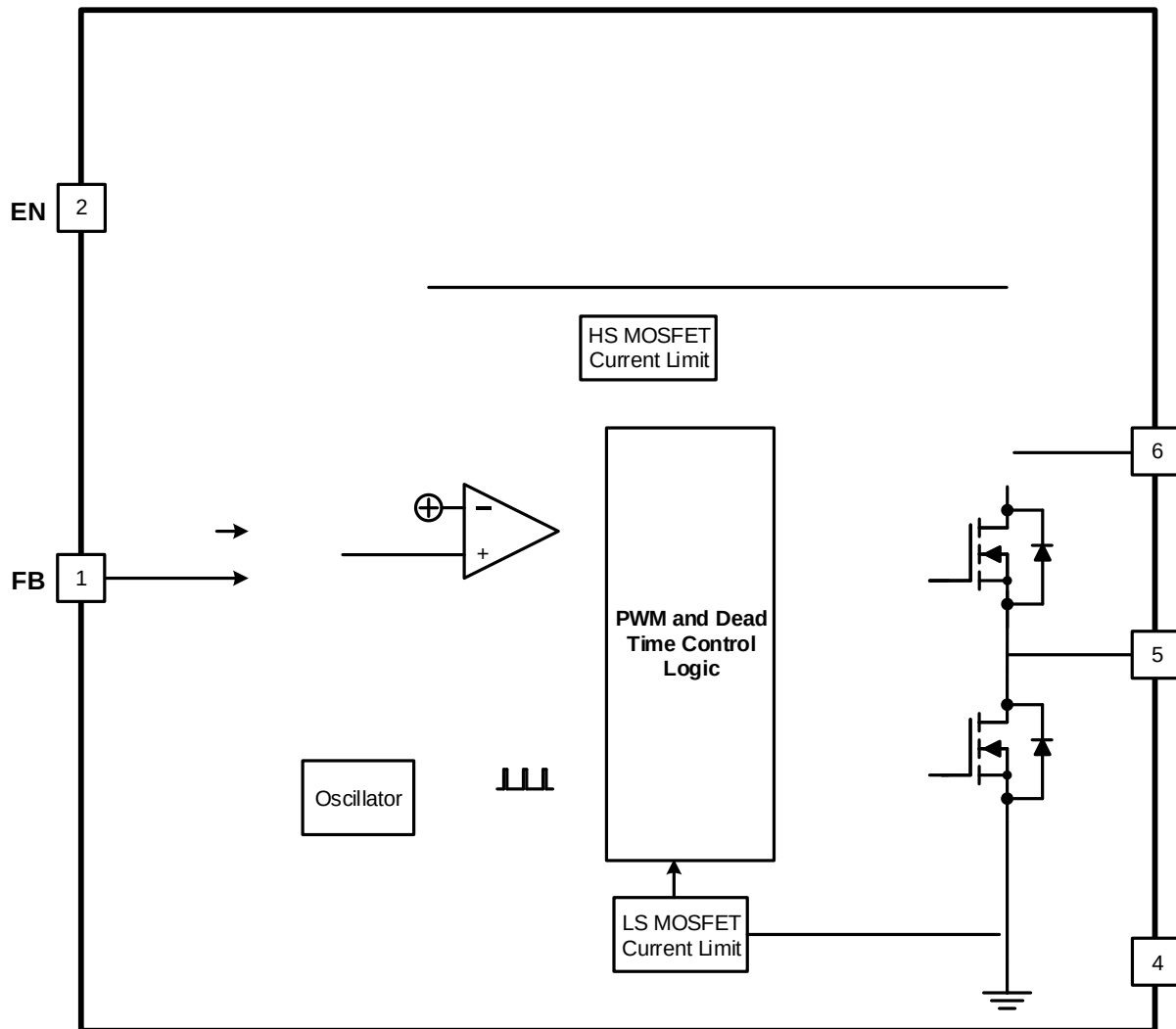
(1)  
(2)

|        |           |         |    |
|--------|-----------|---------|----|
| I: : F | A F: EF B | H , / E | GB |
|        |           |         |    |
|        |           |         |    |



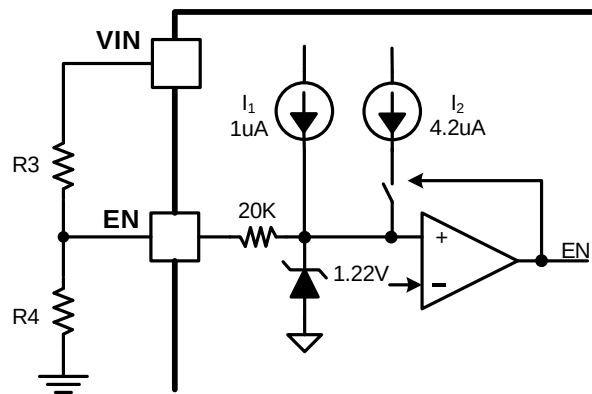


, , )



H

, , )



$$\frac{I_{out}}{I_{ref}} = \frac{R_3}{R_4} \quad (1)$$

$$I_{out} = I_{ref} \frac{R_3}{R_4} \quad (2)$$

FB : : G



I E A F :

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: :

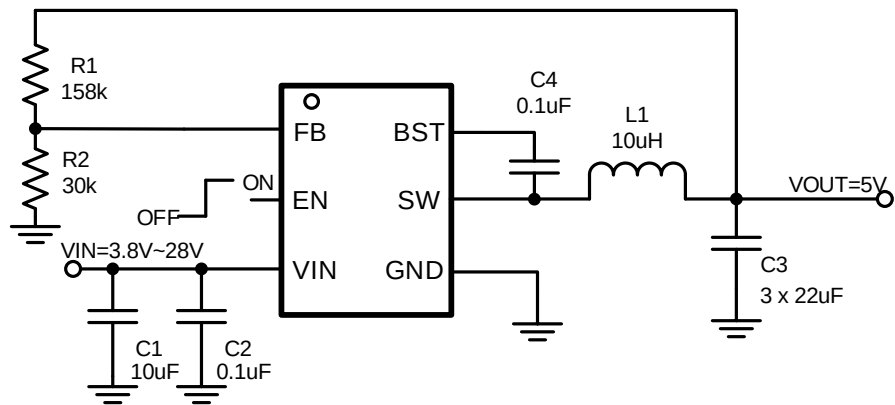
E =

:

o

o

: : :



- B . (: H .

= | :

| 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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H

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$$\frac{7}{4 \quad 7}$$

(10)

H

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$$7 \quad \frac{\quad}{\quad} \quad 4$$

(11)

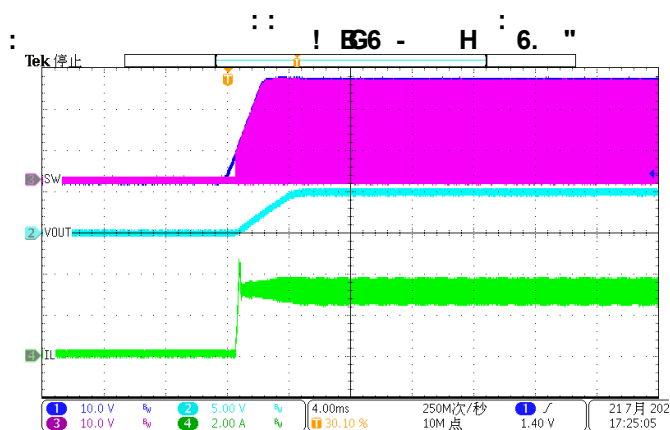


Figure 12. Power Up, IOUT=3A

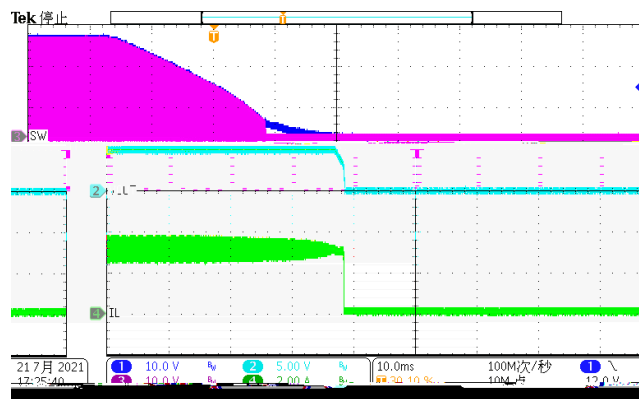


Figure 13. Power Down, IOUT=3A

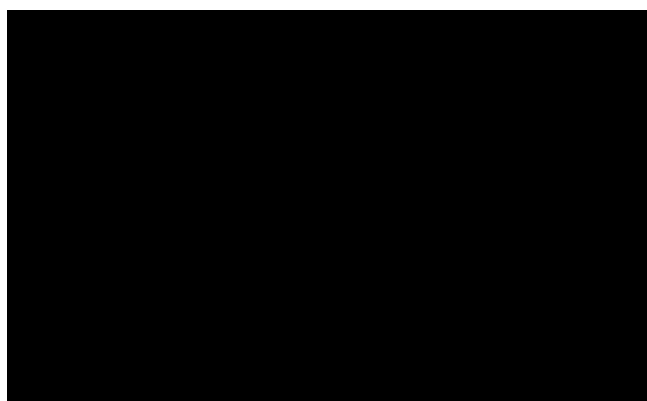


Figure 14. EN Toggle, IOUT=3A

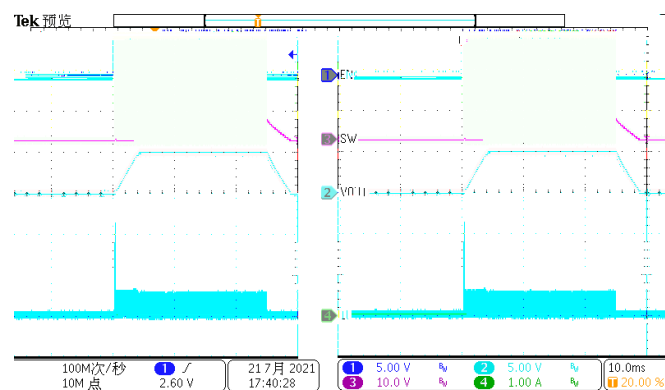
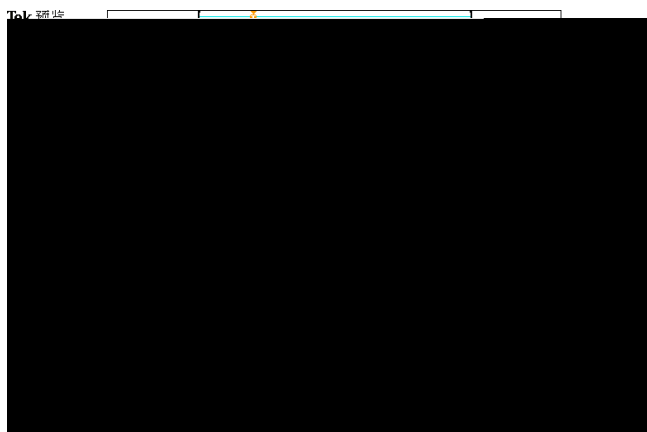
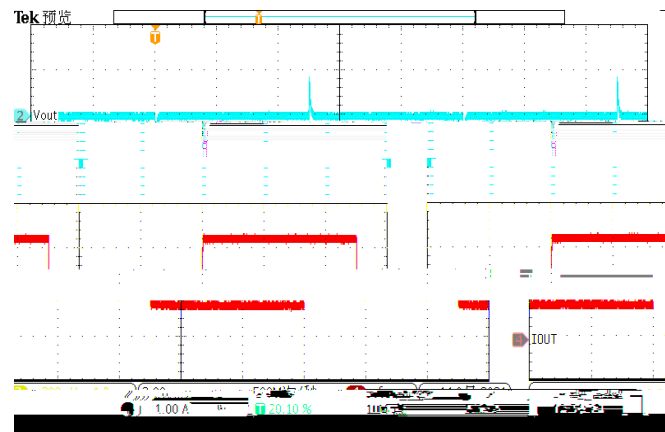


Figure 15. EN Toggle, IOUT=0.1A

Figure 16. Load Transient  
IOUT=0.3A to 2.7A, SR=1600mA/usFigure 17. Load Transient  
IOUT=0.75A to 2.25A, SR=1600mA/us

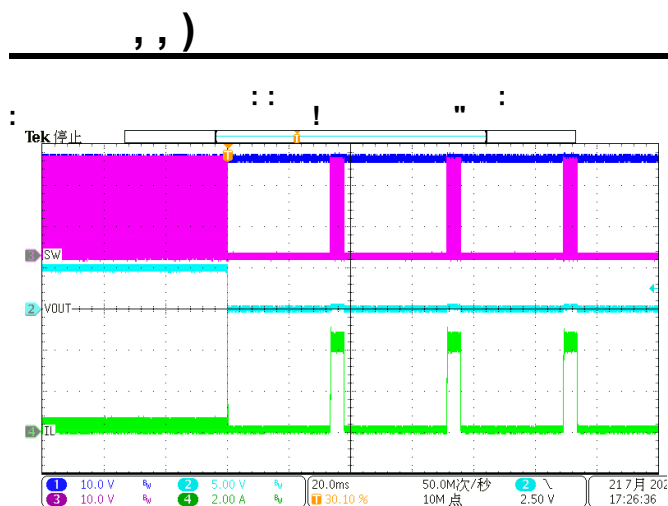


Figure 18. Over Current Protection(0A to hard short)

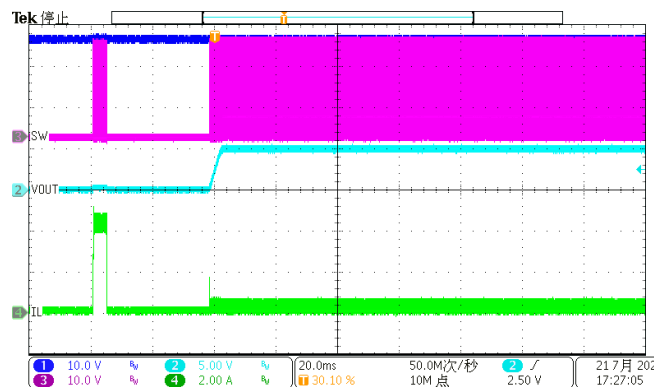


Figure 19. Over Current Release (hard short to 0A)

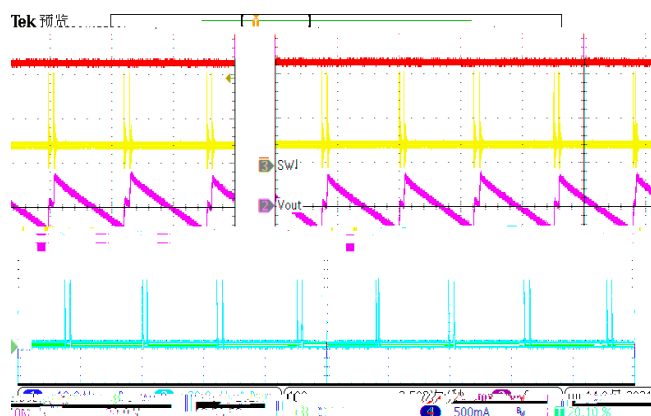


Figure 20. Output Ripple (Iload=10mA)

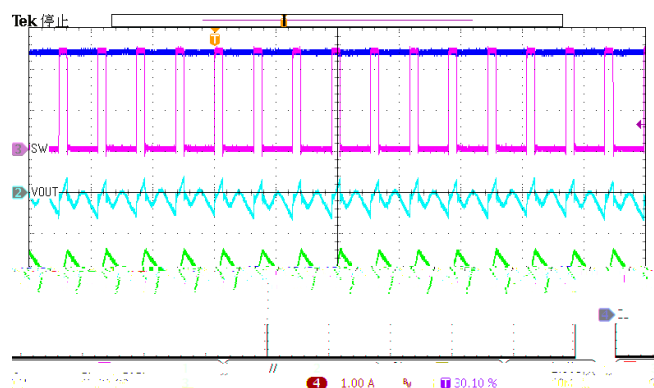


Figure 21. Output Ripple (Iload=1A)

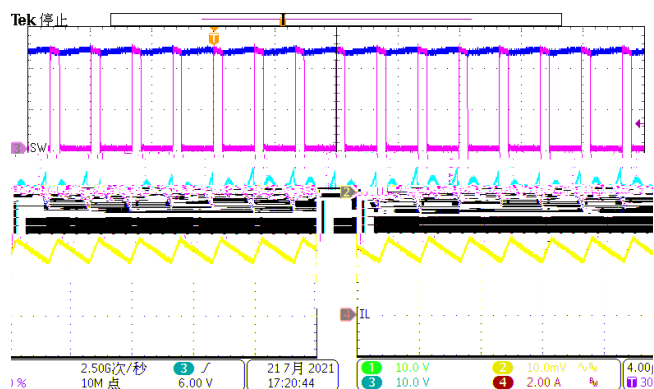


Figure 22. Output Ripple (Iload=3A)

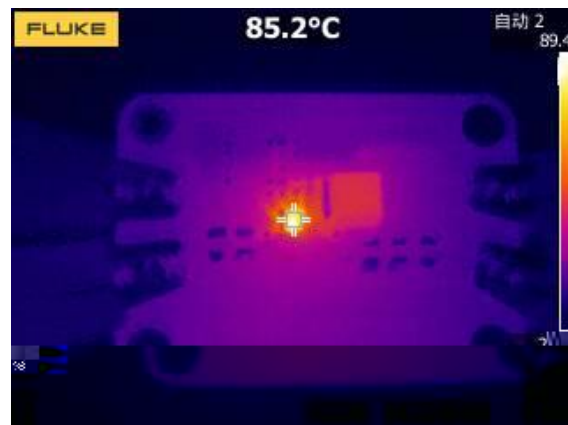
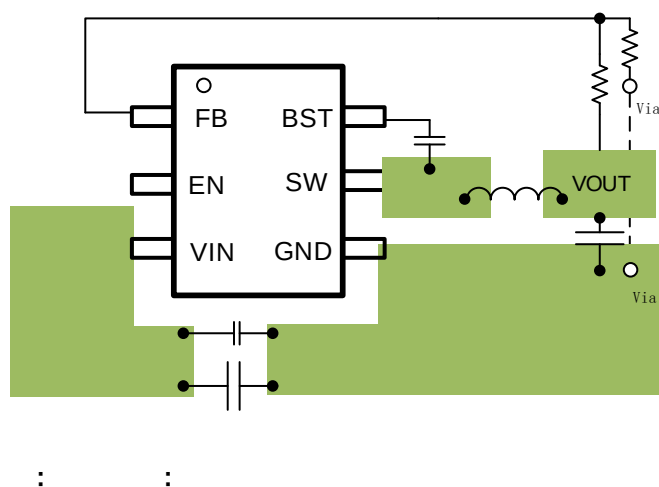


Figure 23. Thermal, 24VIN, 5Vout, 3A



**E**



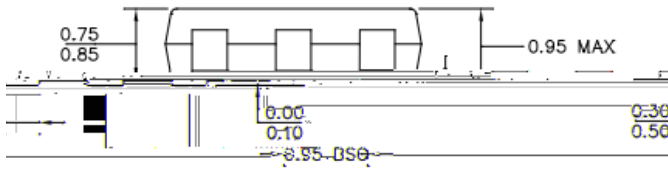
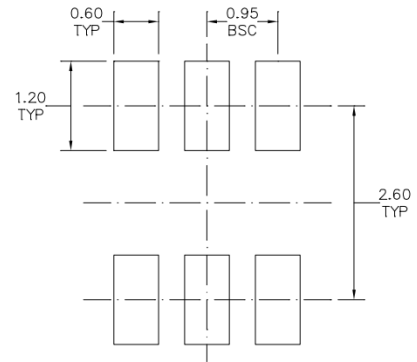
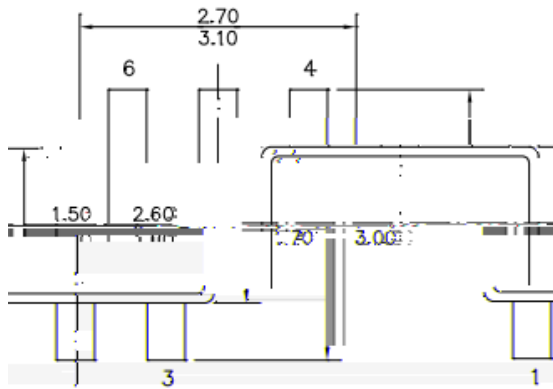
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(12)

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### GH 3

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

