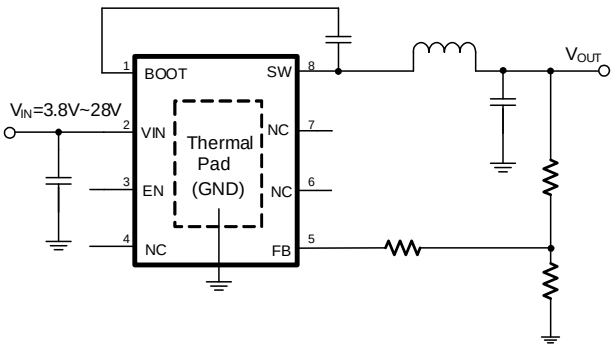
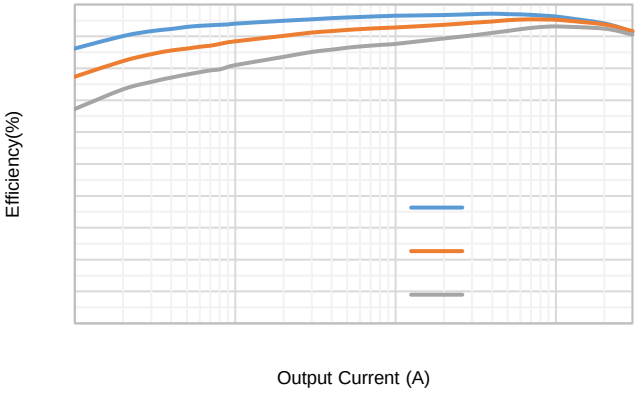
M MMe pe i e ne e i in D I e

KL I I GK FE

GGC K FE

KPG C GGC K FE





I M FE KFI P

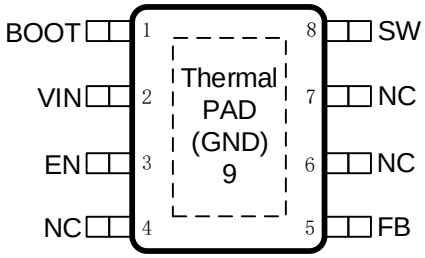
M FI I E FI D K FE

FCLK D O DLDI K E

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

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 (2)	-40	125	°C
Storage temperature T_{STG}	-65	150	°C

G E FE LI K FE



Top View: ESOP-8L

(1)

(2)

G E LE K FE

BOOT	1	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.
VIN	2	Power supply input. Must be locally bypassed.
EN	3	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 1.2V rising / 1.1V falling for programmable UVLO threshold and hysteresis.
NC	4	Not Connected.
FB	5	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.
NC	6	Not Connected.
NC	7	Not Connected.

SW	8	Switching node of the buck converter.
GND	9	Power ground. Must be soldered directly to ground plane.

I FDD E FG I K E FE K FE

I K E

(1)
(2)

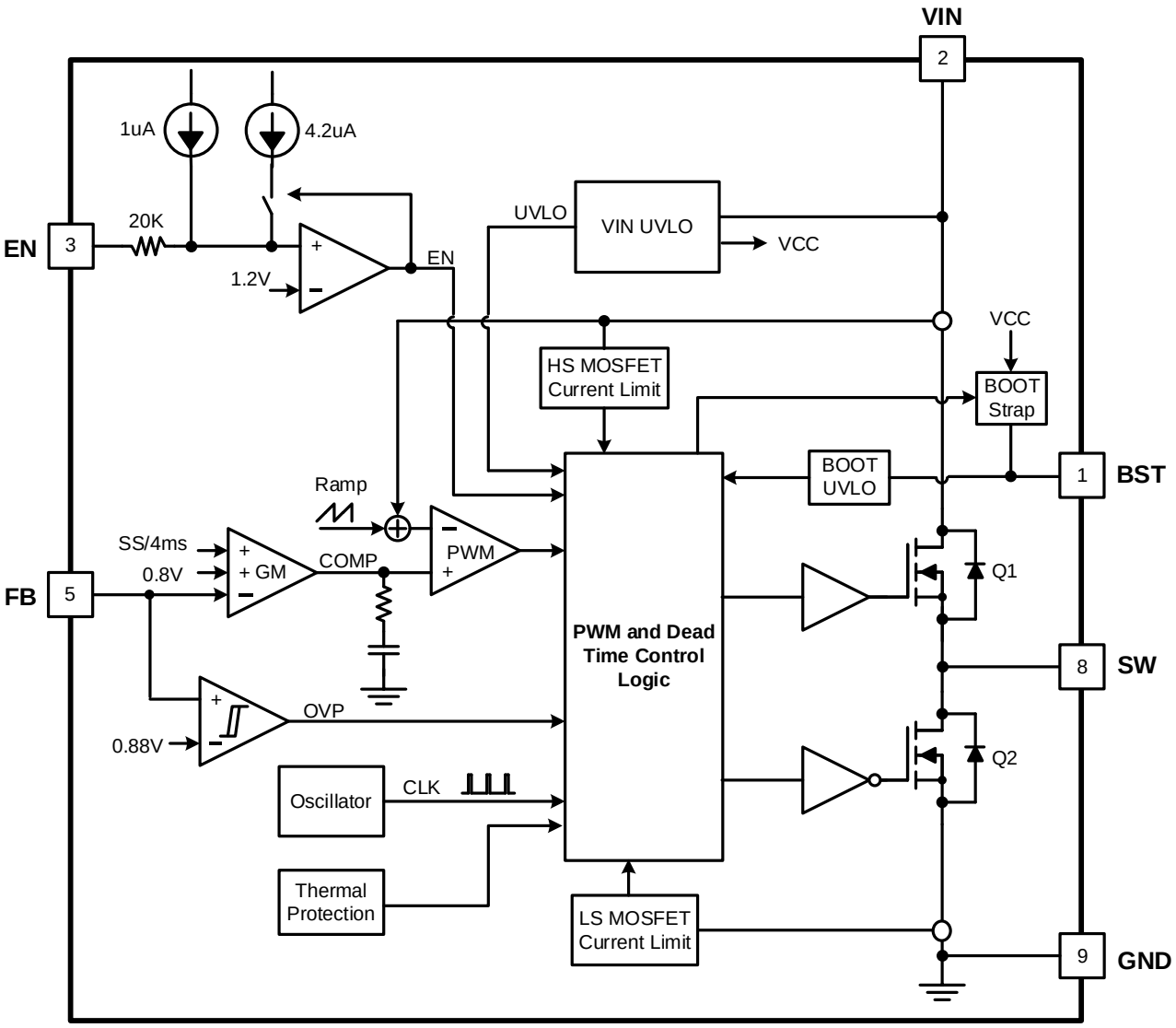
K I D C E FI D K FE

C KI C I K I K

				H # T

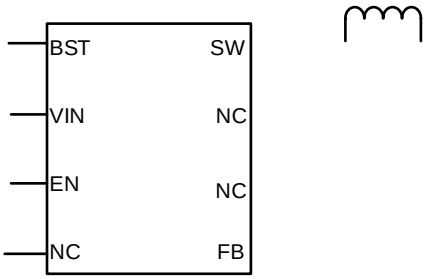
KPG C I K I K

L E K F E C CF I D


VIN
2
1uA
4.2uA
EN
3
20K
1.2V
EN
UVLO
VIN UVLO
VCC
VCC
HS MOSFET
Current Limit
BOOT
Strap
BOOT
UVLO
1
BST
Ramp
SS/4ms
0.8V
+ GM
COMP
PWM
FB
5
PWM and Dead
Time Control
Logic
Q1
8
SW
OVP
0.88V
Q2
Oscillator
CLK
Thermal
Protection
LS MOSFET
Current Limit
9
GND

FG I KFE

GGC K FE E FI D K FE



Design Parameters	Example Value
Input Voltage	12V or 24V Normal (6~28V)
Output Voltage	5V
Output Current	3A
Output voltage ripple (peak to peak)	±8mV
Switching Frequency	400kHz

(3)

$\sim$

(6)

(7)

(8)

(9)

(10)

(11)

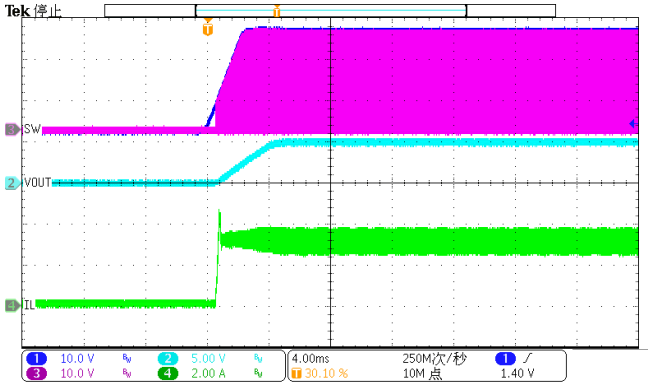


Figure 12. Power Up, IOUT=3A

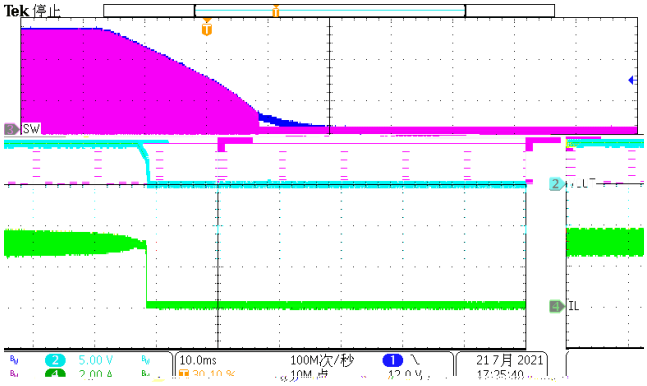


Figure 13. Power Down, IOUT=3A

Figure 14. EN Toggle, IOUT=3A

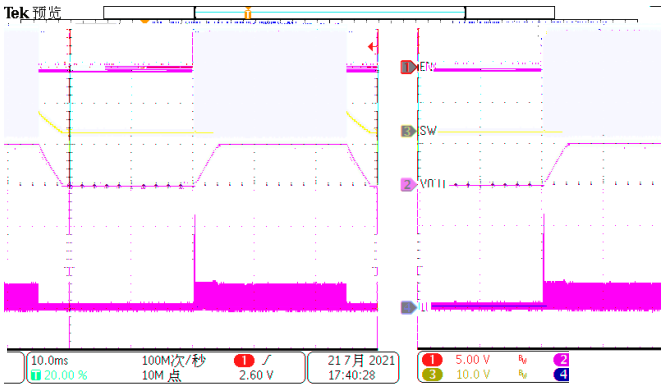


Figure 15. EN Toggle, IOUT=0.1A

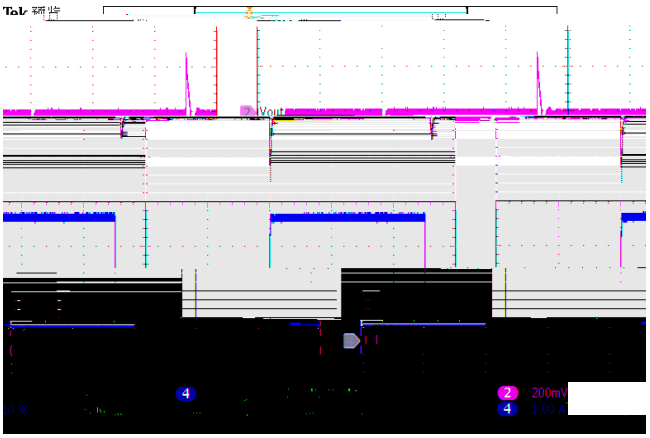


Figure 16. Load Transient
IOUT=0.3A to 2.7A, SR=1600mA/us

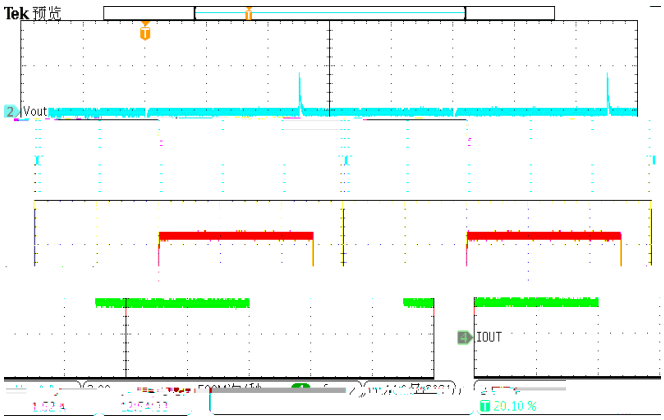


Figure 17. Load Transient
IOUT=0.75A to 2.25 A, SR=1600mA/us

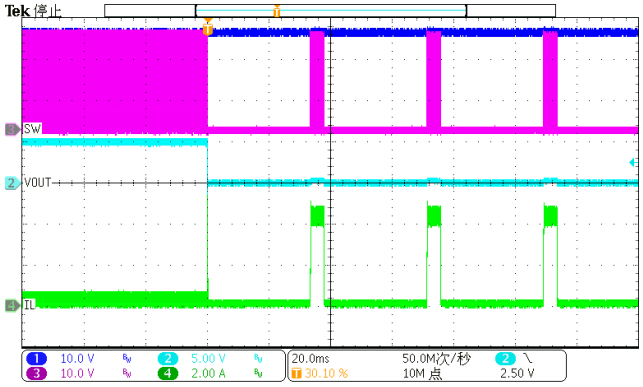


Figure 18. Over Current Protection(0A to hard short)

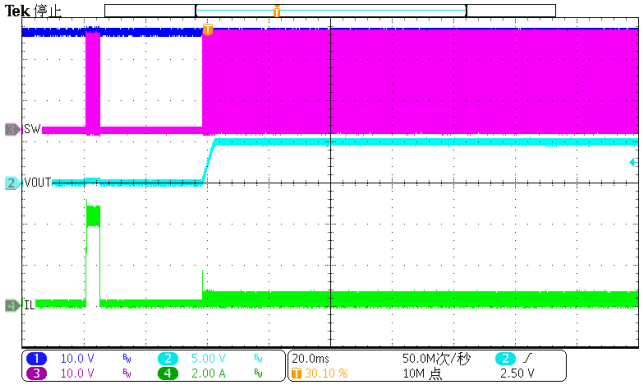


Figure 19. Over Current Release (hard short to 0A)

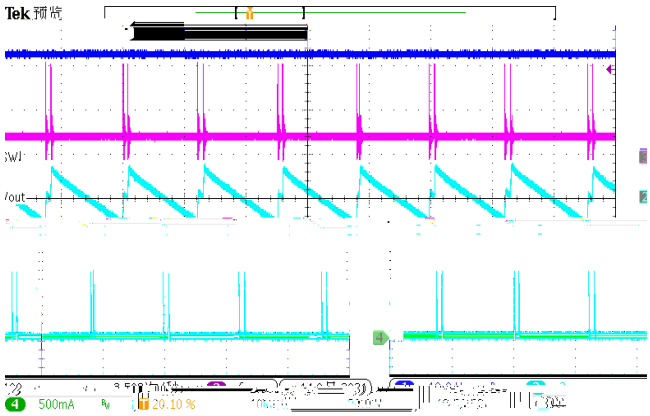


Figure 20. Output Ripple (Iload=10mA)

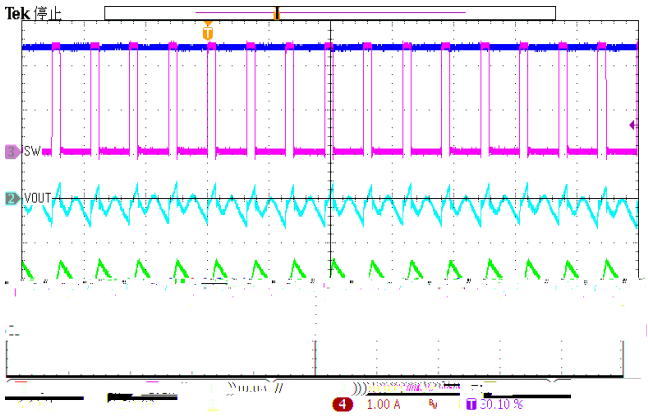


Figure 21. Output Ripple (Iload=1A)

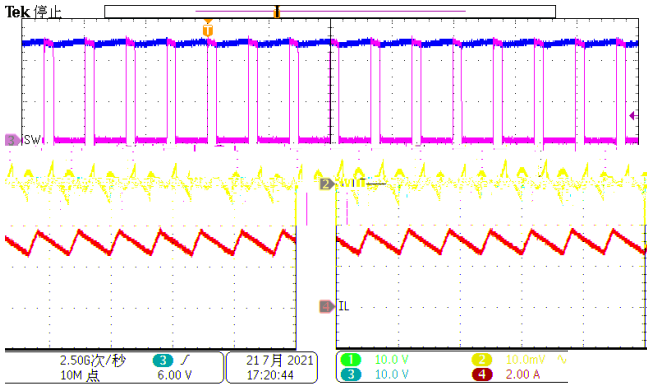


Figure 22. Output Ripple (Iload=3A)

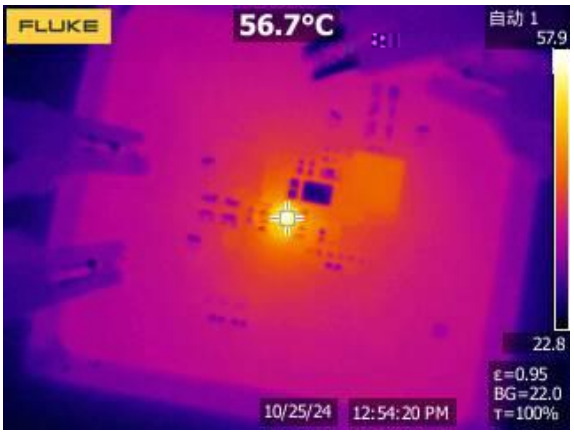
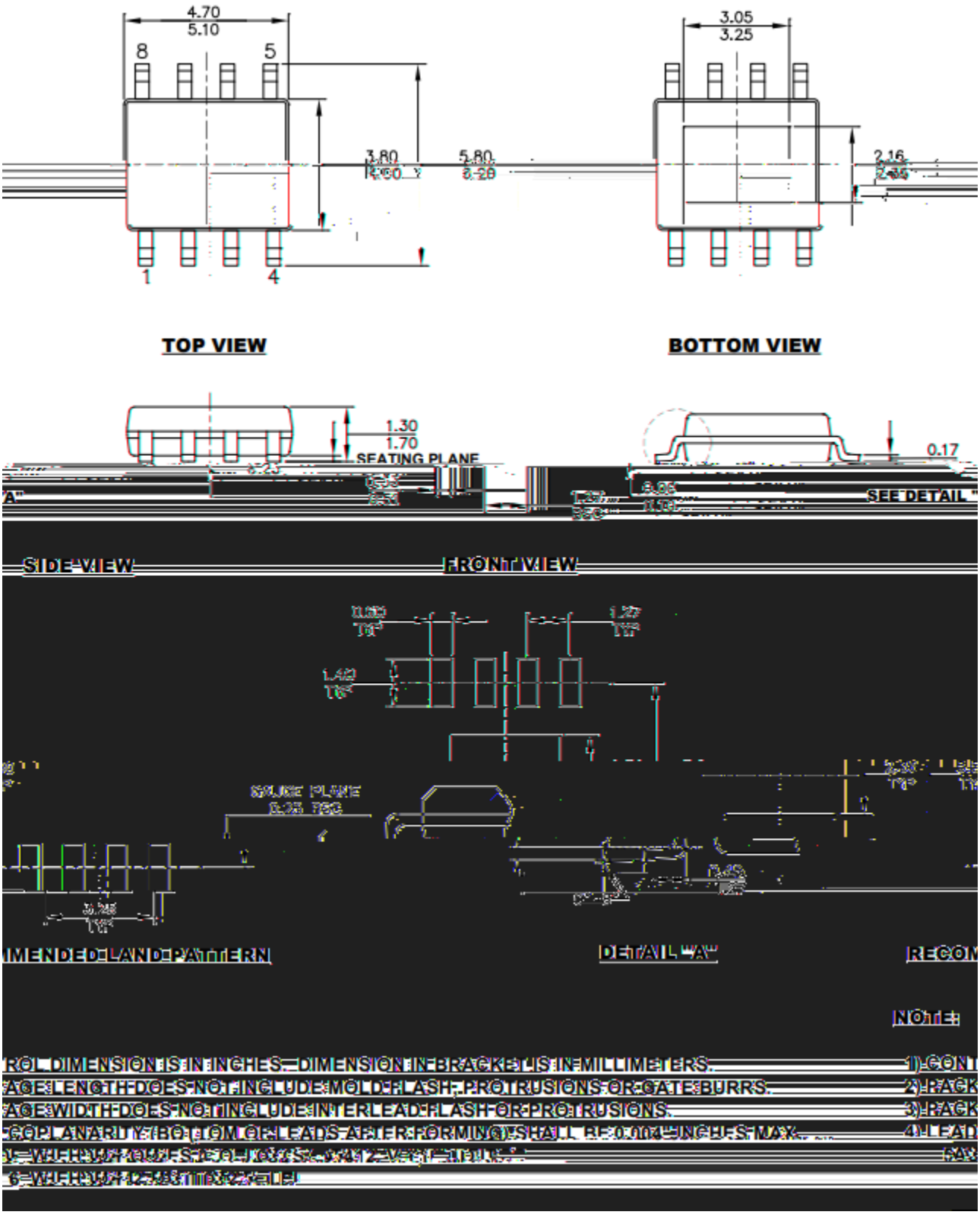


Figure 23. Thermal, 12VIN, 5Vout, 3A

1.

G E FI D K FE


4.70
5.10
8
5
1
4
3.80
5.80
3.05
3.25
2.16
TOP VIEW
BOTTOM VIEW
1.30
1.70
SEATING PLANE
0.17
SEE DETAIL
SIDE VIEW
FRONT VIEW
DETAIL "A"
NOTE:
1) CONT
2) PACK
3) PACK
4) LEAD

K G E I C E FI D K FE