

5.5V-100V Vin, 1.8A Peak Current Limit, High Efficiency Asynchronous Step-down DCDC Converter

- E $V_{S7} = c_b \cdot O_{US} \cdot (D - D)$
- $C_f \cdot W_c = c_b \cdot c_b \cdot D \cdot Z_{OUS} \cdot (D)$
- $/ 1 \quad bW_c \quad ca = c_b \cdot c_b \cdot 1 \cdot c \cdot S \cdot b$
- $\&/ \quad SOYQc \cdot S \cdot b \cdot Z/V \cdot W_e \cdot VS \cdot D \cdot \tau^* \cdot D$
- $7 \cdot t_{SU} \cdot Q_{SR} \% \quad 6 \cdot W \cdot A \cdot W \cdot eS = A43B$
- $c/ \quad c \cdot S \cdot a \cdot S \cdot b \cdot 1 \cdot c \cdot S \cdot b$
- $D \cdot 4 \cdot S \cdot S \cdot R \cdot P \cdot O \cdot Q \cdot Y \cdot S \cdot T \cdot S \cdot S \cdot Q \cdot S \cdot D \cdot Z \cdot O \cdot U \cdot S$
- $a \cdot 7 \cdot t \cdot S \cdot O \cdot Z \cdot A \cdot T \cdot a \cdot t \cdot O \cdot b \cdot B \cdot W \cdot S$
- $4 \cdot W \cdot S \cdot R \cdot A \cdot e \cdot W \cdot W \cdot U \cdot 4 \cdot S \cdot c \cdot S \cdot Q \cdot Q \cdot b \cdot \% \cdot 96h$
- $1 = B \cdot 1 \quad b \cdot Z \quad R \cdot S \cdot e \cdot W \cdot 7 \cdot t \cdot S \cdot U \cdot Q \cdot S \cdot R :$
1 $S \cdot a \cdot Q \cdot W$

A1 B / BD2	BO S SSZ		/		A=B

Pin configuration diagram for the LM2596 voltage regulator:

- Pin 1: BST
- Pin 2: GND
- Pin 3: FB
- Pin 4: EN
- Pin 5: VIN
- Pin 6: SW
- Pin 7: O (empty)

- | | | |
|-----|--|---|
| | | |
| 0AB | | eS ac ZPQaT WVaRS eS =A43BUcSR VS 1 SQO c4 QO COW
T 0=B Wb AE W 0 bab O QO COW W/QOUSReVS AE d ZOUS WZe |
| 5<2 | | 5 c R |
| 40 | | F □ □□ □ □ □□ □ □ □ □
□ DK □ □ □ □ □ □ □C □ □□ □ □
□ □□ S□ |
| 3< | | 3 CPZ Wb bVS SucZb eW WS OZ cZc Qc S ba c QS cZPSZe D b
RwCPZ bVSQ dStS 4ZCbUWb S CPZ bVSQ dStS |
| D7K | | 7 cbac Z d ZOUS 1 SQOZZOPg Oaa QO COW T D7K Wb 5<2 W ObV
T D7K Wb WVTS_cS Q Pg Oaa QO COW OR5<2 cabPSOaaV bCa aaVS |
| AE | | SucZb ae WOUWU cb cb 1 SQAE b O SfIS OZ eS WRcOb |

=dS S QWUTSS OWbS S Qrc S O US c Zaa bVS e Wb bSR

D ₇	7 cbd ZOUS O US			D
D=CB	= cb cbd ZOUS O US			D
B ₈	= S QWUX QW bS S Qrc S			1

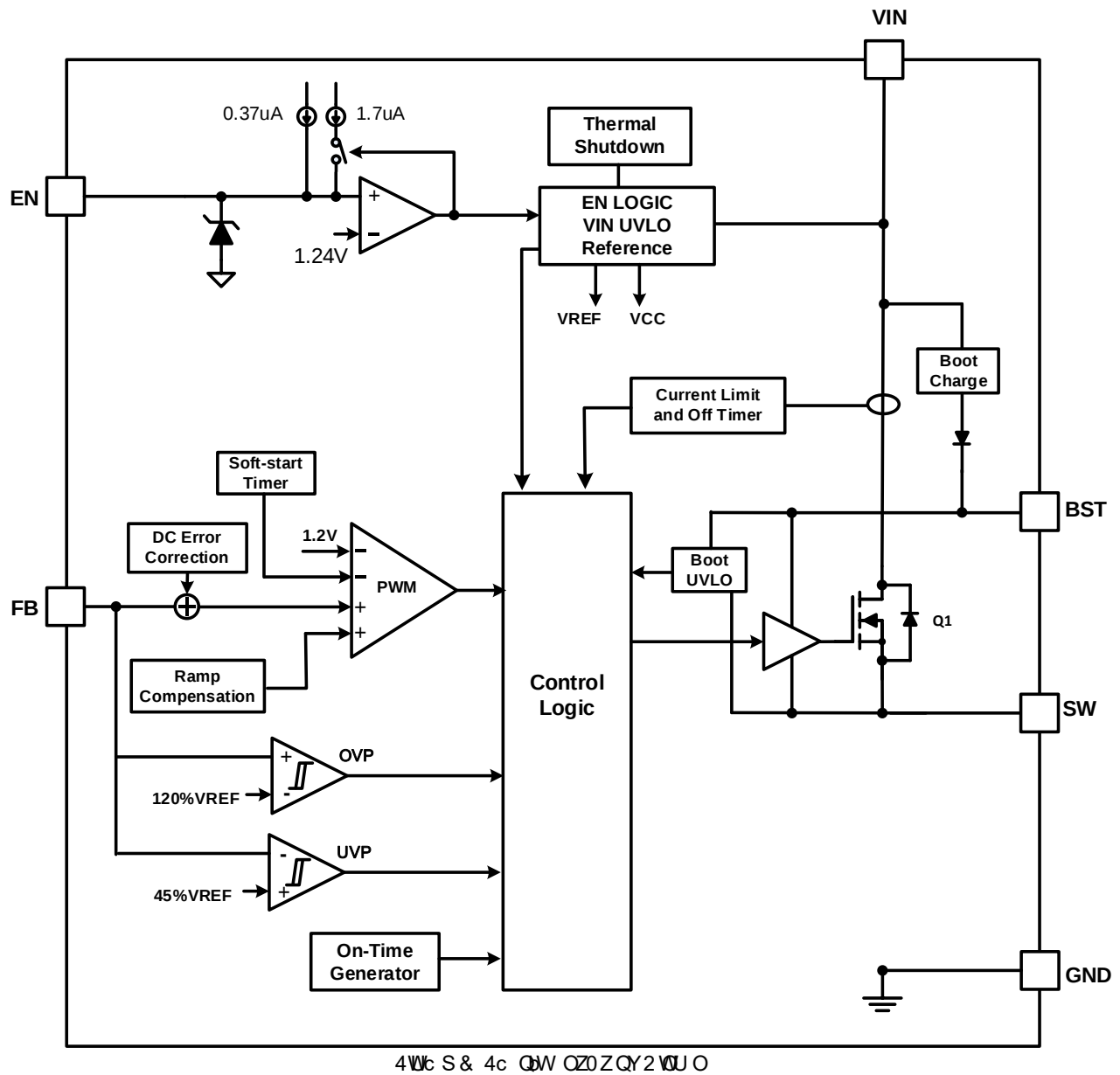
D _{3A2}	6c O 0 Rg RSZ60 S / <A783231 8A a SQMOW OZ Wa			YD
	1 VOUSR2SdVS RSZ12 S / <A783231 8A a SQMOW OZ Wa			YD

(1)

D₇+ &D B₈+ 1l 1 lg WZdOZS WtSaSR c RS 1

2S WSR T PS QV QVO OOS WbW

4Wc S 3TQV Q da: OR1c S b D cb+ D

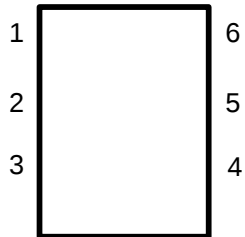


BVS A1 B / W O D D W cb &/ SOY Qc S b ZV W e VS D₇* D A b S R e 21 21 Q d S t S e W P c W
 W % W W a P S e S = A43 B W Z S S b a Q a b O b b W S Q b Z b S U c Z S c b c b d Z O U S d W U
 S f Q S Z b Z A S O R Z O R b O a W b S a a S O R W S O Z S O Z W W S U C S R W d S b S Z A S O R Z O R S U c Z b W
 BVS A1 B / T S O c S a O W S O Z a a T a b O b b W S b Q d W Z O U S W c a V Q c S b O R c b c b d Z O U S d S a V b
 R c W U a b O b c BVS a e W W U T S _ c S Q g W T W S R O b % 96 h BVS R S d V S O Z a c b a Z W W a b O b c e W S
 P V a S R c b c b Q R W W
 BVS A1 B / V O a O R S T O c Z W c b a b O b c d Z O U S T D e W D V g a b S S a W BVS 3 < W V O a O S Q a W
 b V S a V Z b V O b Q P S c a S R b O R c a b b W S W c b d Z O U S Z Q Y c b b V S a V Z a e W W e S f t S O Z S a W b a b S S b O Q c O S
 W W S C D : = a g a b S S _ c V S S b a 4 Z O b W U 3 < W S O P Z a b V S R S d V S e W W b S W S O Z c Z c Q c S b b b V S W
 BVS A1 B / T c Z b S Q W T S O c S a W Q Z R S b V S D 7 W c b c R S d Z O U S Z Q Y c b b V S c b c b d S d Z O U S O R
 c R S d Z O U S d

BVS A1 B / SucZbSa bVS WbS OZ STS S Qs d ZOUS Ob D BVS cb cbd ZOUS WaSbPg O SaAb RbVS T
bVS cb cb Rsb bVS 40 W bW SQ S RSRb caS b Z O QS PSbS SaAb a CaS3_cObW b QOZbS
SaAb O QS T SaAb RbVS a B W dSSTbS Qg ObZbWZORa ZOUS dOZS SaAb a OS SQ S RSR 6 e SdS
WbVS dOZSa OSb WbW bVS

Q/cWQ O Sa bVS 40 Wd ZOUS b bVS WtS OZ STS S Qs d ZOUS E VS 40 d ZOUS Sf QSSRa TWtS OZ
D STS S Qs d ZOUS bVS WtVaVS = A43B bc a Ttb Qd W cb cbd ZOUS Q bWtSb WQSOaS E VS bVS 40
Wd ZOUS TOZ PSZe TtbVS D STS S Qs d ZOUS bVS WtVaVS = A43B QD bc QJOW

BVS A1 B / bSOa bVS RSdVS T bVS RO QUS Rc WU Sf QaaVS VSO bO R eS RaaWObW Q RWW a = QS
bVS X QW tS S Qc S Sf QSSRa 1 bVS WtS OZbVS OZaS a ab a eS = A43Ba ae WQWU E VS bVS
X QW tS S Qc S TOZ PSZe 1 bVS RSdVS SabOa e W/ WtS OZa TbatOb VOaS



4Wc S A1 B / 2SaW 3fO Z D = cb cbe W U O CPZ CD: =

7 cbD ZOUS	&D < OZ D b D
= cb cbD ZOUS	D
Of Wc = cb cb1 c S b	/
Ae WU 4 S cS Qj	% 96h
= cb cbd ZOUS W Z SOYb SOY	D
B O aW b Sa aS / b % / ZCRab	D cb+& D

E VS S

- 7 ~~W~~bVS WRcQ SOYb SOYQc S b
- : ~~W~~bVS WRcQO QS TWRcQ
- T_{AE} ~~W~~bVS ae ~~W~~WUTS_cS Qg
- D=_{CB} ~~W~~bVS cb cbd ~~Z~~OUS
- D_κ ~~W~~bVS W cbd ~~Z~~OUS

AWQ~~S~~bVS WRcQ Qc S b W ~~Z~~WQSOaSa e ~~W~~bVS W cbd ~~Z~~OUS a bVS Qf Wc W cbd ~~Z~~OUS WO ~~Z~~OW ~~W~~/
Q~~Z~~Qga caSRb Q~~Z~~c~~Z~~S bVS WWc WRcQO QS S_cVSR CaS 3_cQW b Q~~Z~~c~~Z~~S bVS WRcQO QS dQZS

E VS S

- : _κ ~~W~~bVS WWc WRcQO QS S_cVSR
- T_{ae} ~~W~~bVS ae ~~W~~WUTS_cS Qg
- D=_{CB} ~~W~~bVS cb cbd ~~Z~~OUS
- D_κ α ~~W~~bVS Qf Wc W cbd ~~Z~~OUS
- _Z_{CB} α ~~W~~bVS Qf Wc 21 ZQRQc S b
- : 7 ~~W~~QST~~W~~S b T? b _Z_{CB}

BVS b ~~Q~~ZQc S b TZe WU bV cUVbVS WRcQ ~~W~~bVS WRcQ W ~~Z~~Qc S b Za bVS cb cbQc S b E VS aS~~Z~~OWU
O WRcQ QV aS ~~W~~SRQc S b Sa SQ~~Z~~g bVS aQc QW Qc S b ~~Z~~OUS bVO ~~W~~ SOY S QW Qc S b O R
A Qc S b QZ b PS Sf QSRSR BVS ST S bVS SOY ae ~~W~~WU Qc S b TWRcQ 7 3/9 O R 7 A QD PS
Q~~Z~~c~~Z~~SR Qa WS_cQW O RS_cQW

E VS S

- 7 3/9 ~~W~~bVS WRcQ SOYQc S b
- _Z_{CB}

4 bVS Sf O Z RSaW bVS AA 0 AQV bYg RWRS WaSQR T W ZeS T eORd ZOUSORU RbVS OZ
QMOOQs Wba Q OSRb a OZ RSdVb BVSg VOZT eORd ZOUS TbSAA 0 W %d ZaCb

/ 4 GS O ~~W~~ ~~Q~~ ~~Q~~ ~~Q~~ cab PS Q ~~S~~ ~~S~~ ~~R~~ ~~P~~ ~~S~~ ~~e~~ ~~S~~ ~~S~~ 0==B W O R A E W T S S ~~Q~~ ~~W~~ / ~~Q~~ ~~S~~ ~~O~~ ~~W~~
~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ e ~~W~~ ~~F~~ ~~P~~ ~~S~~ ~~S~~ U ~~C~~ ~~R~~ ~~S~~ ~~R~~ ~~S~~ ~~Q~~ ~~W~~ ~~W~~ ~~S~~ ~~Q~~ S ~~R~~ ~~S~~ ~~R~~ ~~B~~ ~~V~~ ~~S~~ ~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ a ~~V~~ ~~c~~ ~~Z~~ ~~V~~ ~~Q~~ ~~S~~ ~~O~~ ~~D~~ ~~W~~ ~~W~~ ~~S~~ ~~d~~ ~~Z~~ ~~O~~ ~~U~~ ~~S~~
~~Q~~ ~~W~~ ~~U~~

BVS a ~~S~~ ~~Q~~ ~~W~~ T cb cb ~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ e ~~W~~ ~~O~~ ~~T~~ ~~S~~ ~~Q~~ cb cb d ~~Z~~ ~~O~~ ~~U~~ ~~S~~ W ~~Z~~ ~~W~~ ~~a~~ ~~S~~ ~~R~~ ~~P~~ ~~g~~ ~~a~~ ~~S~~ ~~O~~ ~~R~~ ~~Z~~ ~~O~~ ~~R~~ ~~b~~ ~~O~~ a ~~W~~ ~~b~~ ~~S~~ ~~T~~ O ~~Q~~ ~~S~~

BVS cb cb W ~~Z~~ ~~W~~ ~~S~~ ~~a~~ ~~a~~ ~~S~~ ~~b~~ ~~Q~~ ~~Z~~ ~~Q~~ a ~~S~~ ~~R~~ ~~T~~ ~~e~~ O ~~b~~ ~~a~~ = S ~~W~~ ~~Q~~ ~~c~~ ~~a~~ ~~S~~ ~~R~~ ~~P~~ ~~g~~ ~~b~~ ~~V~~ ~~S~~ ~~W~~ ~~R~~ ~~c~~ ~~Q~~ ~~Q~~ ~~c~~ ~~S~~ ~~b~~ ~~W~~ ~~Z~~ ~~U~~ ~~W~~ ~~U~~ ~~b~~ ~~V~~ ~~c~~ ~~U~~ ~~V~~
~~b~~ ~~V~~ ~~S~~ ~~3~~ ~~_~~ ~~c~~ ~~Q~~ ~~Q~~ ~~W~~ ~~b~~ ~~A~~ ~~S~~ ~~a~~ ~~S~~ ~~a~~ ~~W~~ ~~O~~ ~~Q~~ ~~S~~ ~~3~~ ~~A~~ T ~~b~~ ~~V~~ ~~S~~ cb cb ~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ a O ~~R~~ ~~b~~ ~~V~~ ~~S~~ ~~b~~ ~~V~~ ~~S~~ ~~W~~ ~~Q~~ ~~c~~ ~~a~~ ~~S~~ ~~R~~ ~~P~~ ~~g~~ ~~b~~ ~~V~~ ~~S~~ ~~W~~ ~~R~~ ~~c~~ ~~Q~~ ~~Q~~ ~~c~~ ~~S~~ ~~b~~ ~~W~~ ~~Z~~
~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ O ~~R~~ ~~R~~ ~~a~~ ~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ ~~b~~ ~~V~~ ~~S~~ cb cb ~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ a B ~~Q~~ ~~Q~~ ~~S~~ ~~S~~ ~~a~~ ~~O~~ ~~Z~~ cb cb d ~~Z~~ ~~O~~ ~~U~~ ~~S~~ W ~~Z~~ ~~Q~~ ~~a~~ ~~S~~ ~~O~~ ~~Z~~ ~~e~~ ~~3~~ ~~A~~ cb cb
~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ ~~Z~~ ~~S~~ ~~Q~~ ~~S~~ ~~O~~ ~~W~~ ~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ 4 ~~Q~~ ~~S~~ ~~O~~ ~~W~~ ~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ a ~~b~~ ~~V~~ ~~S~~ ~~Q~~ ~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ ~~Q~~ ~~S~~ ~~R~~ ~~W~~ ~~Q~~ ~~S~~ ~~a~~ ~~b~~ ~~V~~ ~~S~~ cb cb W ~~Z~~ 4
a ~~W~~ ~~Z~~ ~~Q~~ ~~Q~~ ~~W~~ ~~b~~ ~~V~~ ~~S~~ cb cb d ~~Z~~ ~~O~~ ~~U~~ ~~S~~ W ~~Z~~ ~~Q~~ ~~P~~ ~~S~~ ~~a~~ ~~b~~ ~~W~~ ~~Q~~ ~~S~~ ~~R~~ ~~P~~ ~~g~~ ~~3~~ ~~_~~ ~~c~~ ~~Q~~ ~~W~~ ~~R~~ ~~S~~ ~~a~~ ~~V~~ ~~S~~ ~~R~~

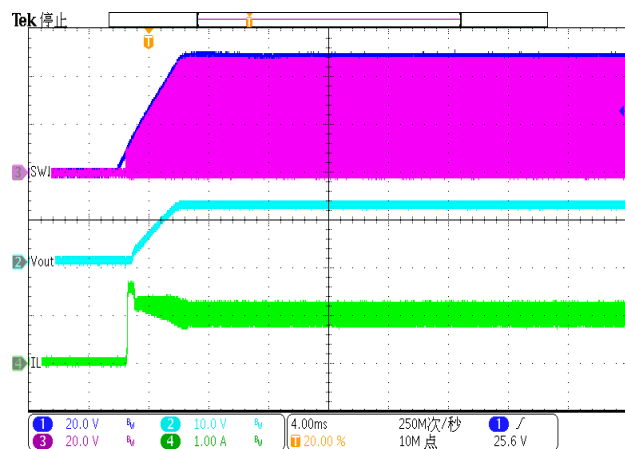
E VS S

- ~~W~~ ~~b~~ ~~V~~ ~~S~~ cb cb d ~~Z~~ ~~O~~ ~~U~~ ~~S~~ W ~~Z~~
- T_{AE} ~~W~~ ~~b~~ ~~V~~ ~~S~~ a ~~e~~ ~~W~~ ~~W~~ ~~U~~ ~~T~~ ~~S~~ ~~_~~ ~~c~~ ~~S~~ ~~Q~~
- : ~~W~~ ~~b~~ ~~V~~ ~~S~~ ~~W~~ ~~R~~ ~~c~~ ~~Q~~ ~~Q~~ ~~S~~ ~~T~~ ~~W~~ ~~R~~ ~~c~~ ~~Q~~
- 1 = ~~C~~ ~~B~~ ~~W~~ ~~b~~ ~~V~~ ~~S~~ cb cb ~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ ~~Q~~ ~~S~~
- D = ~~C~~ ~~B~~ ~~W~~ ~~b~~ ~~V~~ ~~S~~ cb cb d ~~Z~~ ~~O~~ ~~U~~ ~~S~~
- D_z ~~W~~ ~~b~~ ~~V~~ ~~S~~ W cb d ~~Z~~ ~~O~~ ~~U~~ ~~S~~

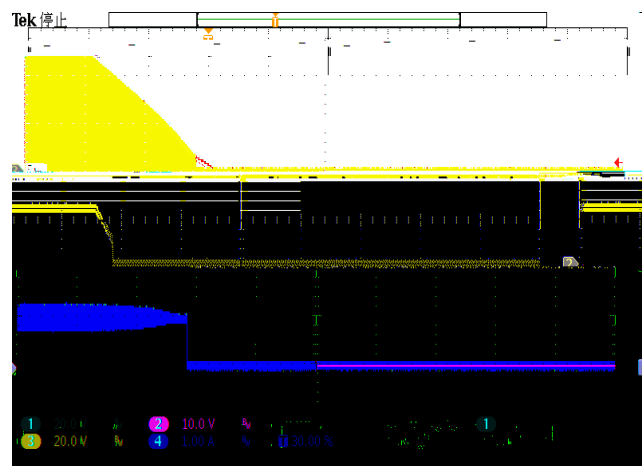
2cSb ~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ a ~~R~~ ~~S~~ ~~U~~ ~~C~~ ~~R~~ ~~W~~ ~~U~~ ~~c~~ ~~R~~ ~~S~~ ~~2~~ ~~1~~ ~~P~~ ~~Q~~ ~~a~~ ~~b~~ ~~V~~ ~~S~~ ~~P~~ ~~Q~~ ~~a~~ ~~d~~ ~~Z~~ ~~O~~ ~~U~~ ~~S~~ ~~Q~~ ~~a~~ ~~W~~ ~~W~~ ~~Q~~ ~~b~~ ~~g~~ ~~S~~ ~~R~~ ~~c~~ ~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ ~~Q~~ ~~S~~ ~~1~~ ~~S~~ ~~O~~ ~~W~~
~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ a ~~Q~~ ~~Z~~ ~~a~~ ~~S~~ ab T ~~b~~ ~~V~~ ~~S~~ ~~W~~ ~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ ~~Q~~ ~~S~~ ~~Q~~ ~~b~~ ~~C~~ ~~S~~ ~~R~~ ~~d~~ ~~Z~~ ~~O~~ ~~U~~ ~~S~~ ~~B~~ ~~V~~ ~~S~~ ~~S~~ ~~T~~ ~~S~~ ~~Z~~ ~~O~~ ~~d~~ ~~S~~ ~~O~~ ~~U~~ ~~W~~ ~~b~~ ~~V~~ ~~S~~ ~~d~~ ~~Z~~ ~~O~~ ~~U~~ ~~S~~ ~~Q~~ ~~W~~ ~~U~~ ~~b~~
S ac S ~~C~~ ~~R~~ ~~S~~ ~~_~~ ~~c~~ ~~S~~ ~~T~~ ~~S~~ ~~Q~~ ~~a~~ ~~S~~ ~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ ~~Q~~ ~~S~~ ~~B~~ ~~g~~ ~~W~~ ~~Q~~ ~~Z~~ ~~g~~ ~~t~~e 4 ~~Q~~ ~~S~~ ~~O~~ ~~W~~ ~~Q~~ ~~c~~ ~~b~~ ~~c~~ ~~b~~ ~~Q~~ ~~Q~~ ~~Q~~ ~~W~~ a ~~e~~ ~~Y~~ ~~T~~ ab O ~~Z~~ ~~Q~~ ~~W~~ a

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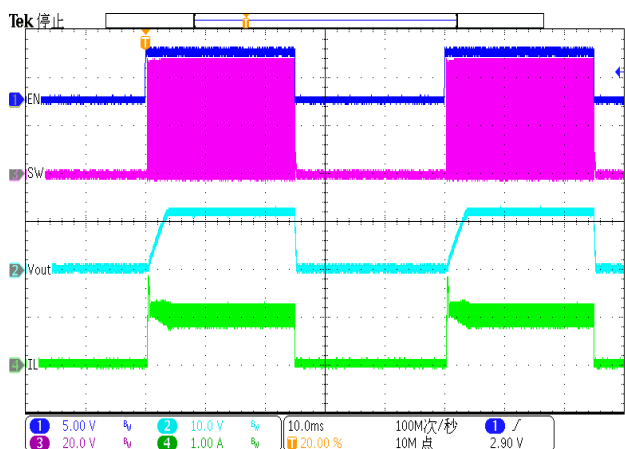
DW+ &D D cb+ D c Zaa bVSe Ws bSR



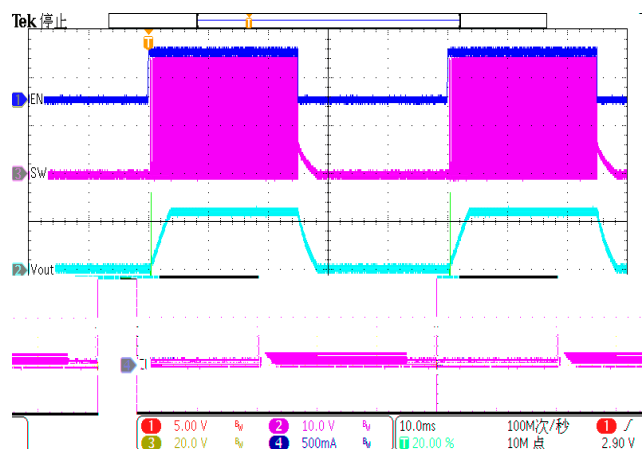
4Wc S eS c ZCR+ /



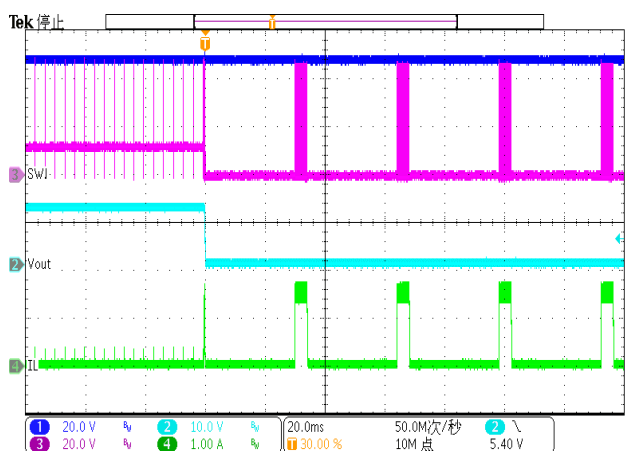
4Wc S eS Re ZCR+ /



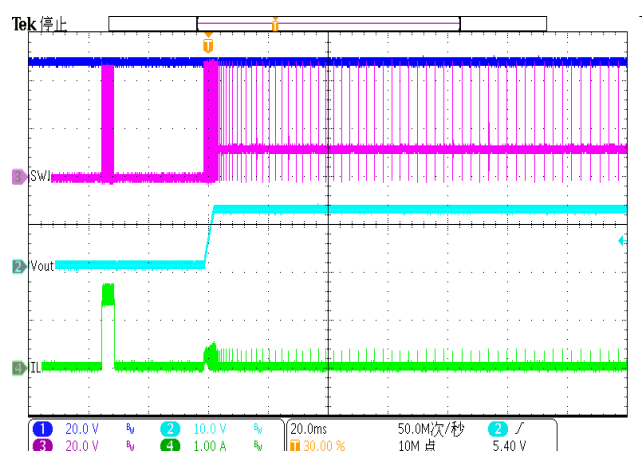
4Wc S 3< b UUZ ZCR+ /



4Wc S 3< b UUZ ZCR+ /

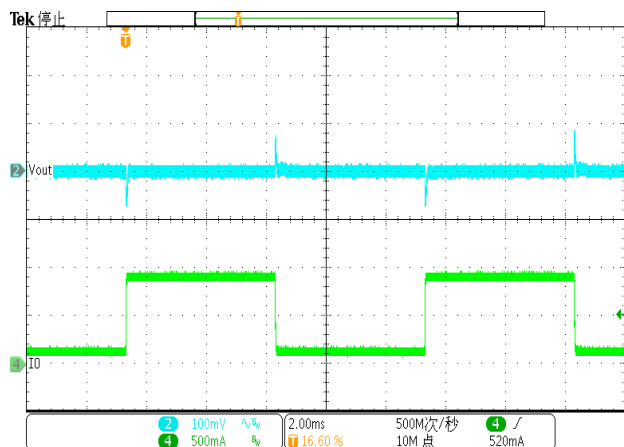


4Wc S =dS 1 c S b bSQW

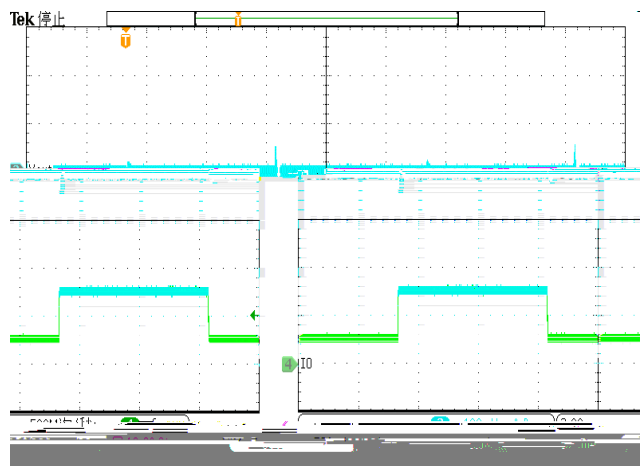


4Wc S % =dS 1 c S b SZQaS

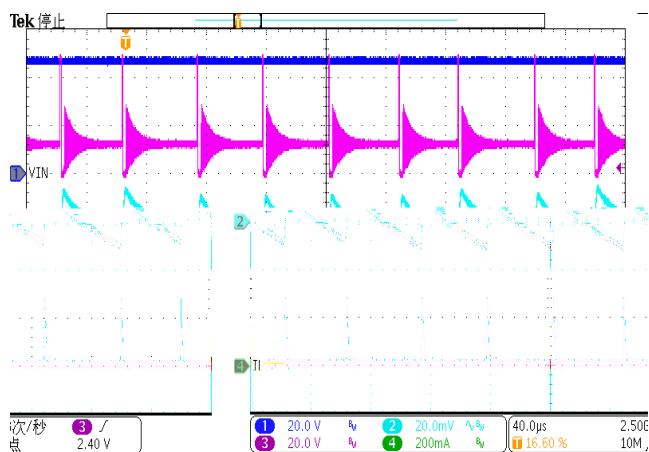
DW+ &D D cb+ D c &aa bVS e WS bSR



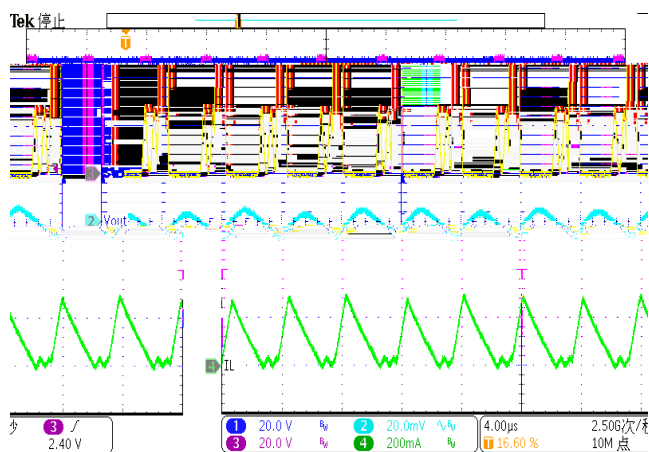
4Wc S & : CRB O aW b / / / ca



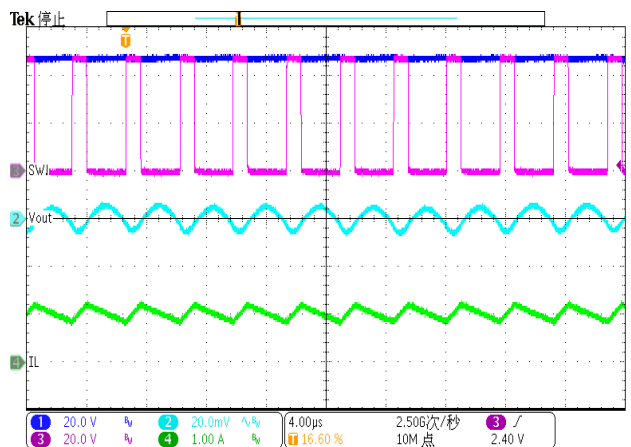
4Wc S : CRB O aW b / % / / ca



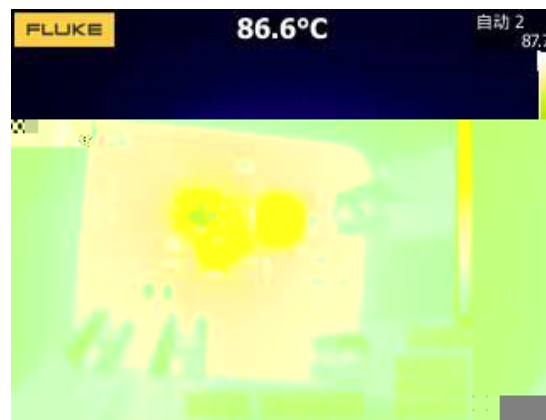
4Wc S = cb cb W & ZCR+ /



4Wc S = cb cb W & ZCR+ /



4Wc S = cb cb W & ZCR+ /



4Wc S BVS OZ &D7- D cb /

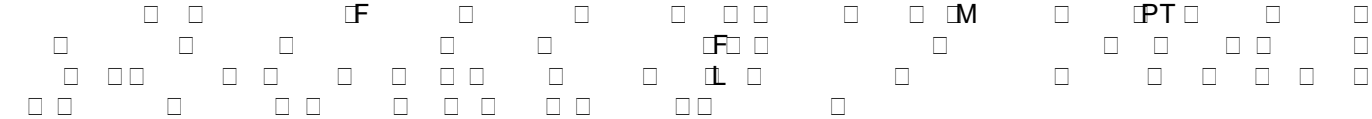
S 10 Zg cbW/OQWOZT A1B / a abCPZORSTWV b SObW BVsbOCSa Q RcQWU Taba e WQWU
 Qc Sba d ZOUSa OSSOag b Wb OOb e W abOg WRcQO QSOR OCaWQO OQW Qsb US SOb ASOR
 RSUORS ST OQS 4 PSb SacZa TZe bVSaSUcWZVsa CaPSZe (

1. eS U c RWU aQVS S WdSg QWOZPSQCaS TQD gWU eS bVS OZORUZV/P c QWU VS
 Qaa QOQR e W QZQYTS_cS Qg BVsbVc P T cZ W/b OYSU c RbOCS ZeSab W SRS QSOR eS OS
 RWb VcSR SdS Z 10 ActWV bz ZQWUU c ROSOe VZ bWVbVS OZOR bQCaWU dS VSOOSO

2. ZCSOZe 3A QSO WQO OQW CaQZaSB D< WORbVSU c ROa aaVZb SRcQS OCaWQSTSO

3. 4 SObW ObTcZ OSRZOR bVSb aVSU c ROSO cab dVRSRS_cOS VSOBVAWQWUOSO OYS
 ac Sb ae WQWUZ eW eS VOdZeS W SRS QSTU c RWU

4. BVS eS OR
 aV cZPSQ SQRb P lb 10 U c R ZSa caWU cZVS dCa RVSOZ c RS bVS 7 BVS QS bS bVS OZ
 OR aV cZ QZ Qga PS



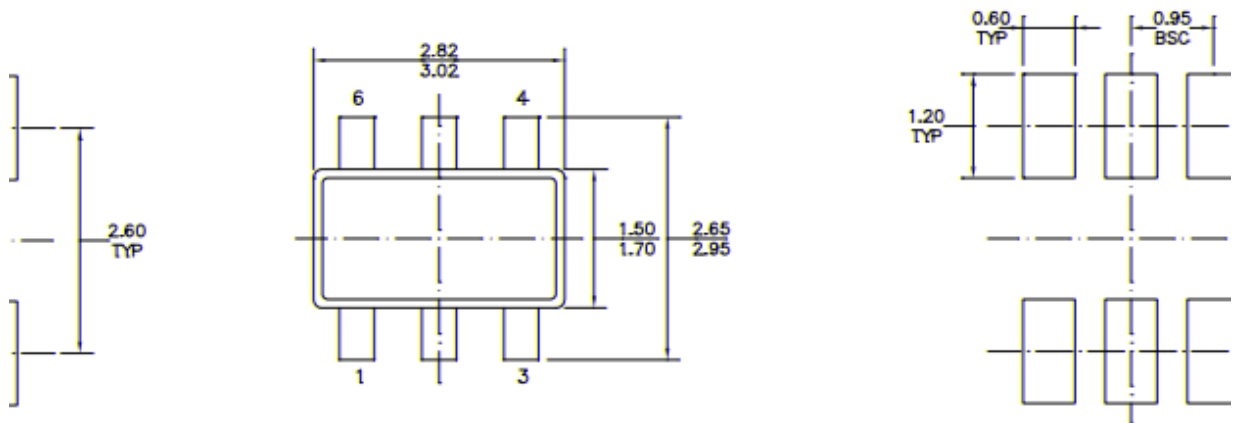
5. =cb cbWRcQ aV cZPS ZCSR QZaSB bVS AE W BVSO SO TbVS 10 Q RcQ WWVSR b SdS b
 Sf QaaVSO OQWMS Q c ZWU

6. cS0AB QO OQW bOCS bVSP lb ZgS b dVSe VS ObVT b aVSU c R

4Wc S 10 : Qg cb3fO Z

PACKAGE OUTLINE DRAWING FOR QFN

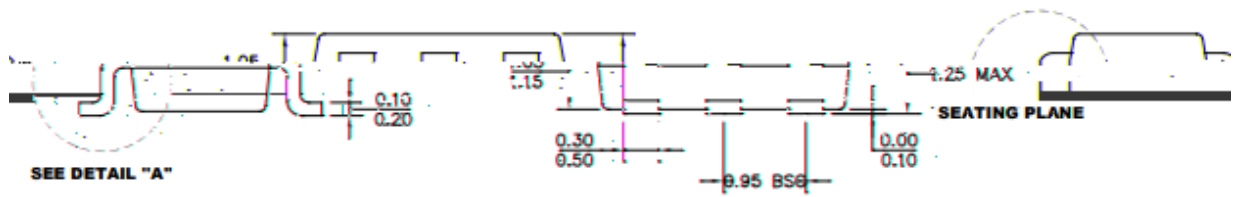
QFN-6 (3x3) 1.6x2.0mm



PATTERN

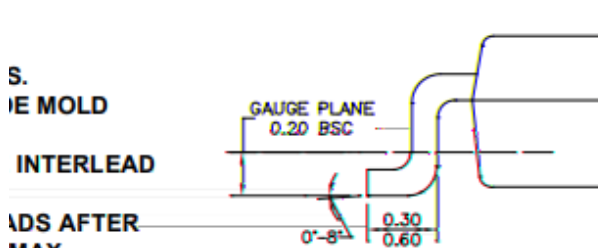
TOP VIEW

RECOMMENDED LAND



FRONT VIEW

SIDE VIEW



S.
IE MOLD
INTERLEAD
ADS AFTER
MAX.
193

NOTE:

- 1) ALL DIMENSIONS ARE IN MILLIMETER.
- 2) PACKAGE LENGTH DOES NOT INCLUDE FLASH, PROTRUSION OR GATE BURR.
- 3) PACKAGE WIDTH DOES NOT INCLUDE FLASH OR PROTRUSION.
- 4) LEAD COPLANARITY (BOTTOM OF LEAD FORMING) SHALL BE 0.10 MILLIMETERS.
- 5) DRAWING CONFORMS TO JEDEC MO-18.

QFN-6 (3x3) 1.6x2.0mm
SCT
DETAIL "A"

BVS