

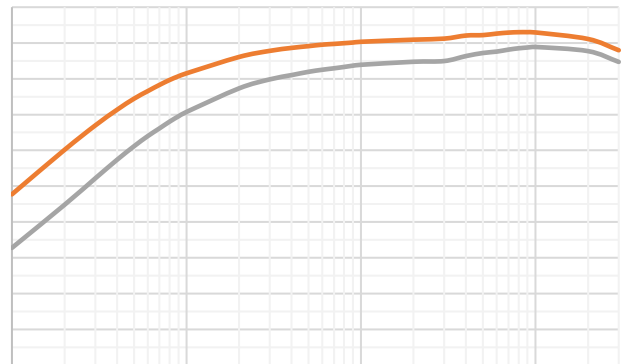
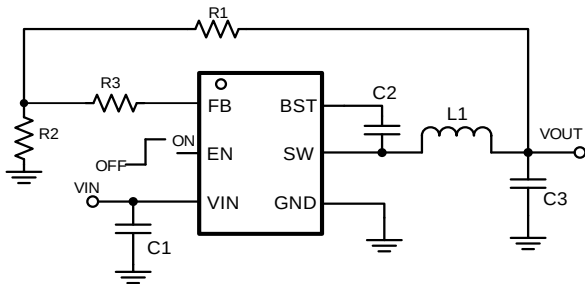
, 409LK JPU PO: PJORN5 KL 9RNRNMLL
- R/ : PJORN- L LW PO - L LW
: LHK: LJ T -:
7 SL: RP RN4 KL 7: 4 RJ3RNO 3 HK* UKPPU
= = RL U = SHL 9HUNL
(* URJ 6 3 HK* LU
= -LLKHJR9LM LWL = SHL
- \$ ULNHLK T 9K U/ RNO: RL 46: -,
HUK T 9K U3 : RL 46: -,
(: O K U* LU
U 4RFT T 6U FL
7 LJPPU, UH \$ OL O \$ M 7 NHTTH \$
=36 OL O \$ HUK/ LLP
3 + 3+6 4 KL 6 LHPU
T) \$R: M: H FL
6 6 L = SHL 7 LJPU
Q THS O K U7 LJPUH *
(HSI \$ R: 6 37HJRNL

. LU HS* U TL
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(T PL: LT

Q: * P (WO U I JRJ UL L PO
= RL RJ SHL HUNL OJO MS
RJLNHL HU T ONO RL 46: -, HUK H T
S RL 46: -, RL ONOLMRLW L K U
+*+* JUL PU Q: * HK LHRJ LU
T KL J U S PO Q RJLNHLK J T LUHPU
UL R OJO THL: * LH \$ IL LKI
TRFTPRN Q MUOP J T ULU J U Q
: * Q 7 SL: RP RN 4 K \$IPU
7: 4 RJ3RNO 3 HK* UKPPU

Q: * PHU, \$J THNL R OJL MLWL, 40
MLKS I JRJ UL L PORT \$TLURN FPLK
KL RUM, 40 LK JPU Q: * MH L
- L LW: LHK: LJ T -: PO \$L RN
HU M Q R/ PJORN ML LW HUK
T K \$IPUHL M PJORN ML LW LK JL
Q JUKJLK, 40 Q JUL L OH RH
KL RUKNHLKPL JQTL L P PJORN KL
RNRN PO HJ RNRN46: -, U UHUK U W
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U PLJH LKI Q 46: -, OHK PJORN

Q: * M L SHL LJPU
JJS I JJS LHR J LU \$TP HUK Q THS
O K U LJPU Q KL RL P H HSI \$ RUS
MS: 6 HJRNL

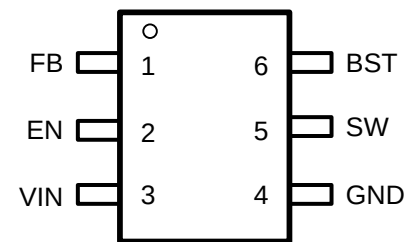


56, 7HNLUTIL M L P L PPU TH KPM MT HNLUTIL RQJ LU L PU
 9L PPU 9L\$HL 4HRL
 9L PPU KHL +, =0, 69+, 9 6-694(65

: *	=) 9	H L 9LLS			: 6

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

DESCRIPTION	MIN	MAX	UNIT
BST	-0.3	48	V
VIN, SW, EN	-0.3	42	V
FB	-0.3	5.5	V
Operating junction temperature ⁽²⁾	-40	125	°C
Storage temperature T _{STG}	-65	150	°C



Top View: TSOT23-6L, Plastic

- (1) : L L IL UK O L\$LK UK (I SL4HFT T9HRNTH JH LKL BL L THLU KHTHNL QKL BLPU NHHULLK
 MWPU RL MP 9LJ TTLUKL6 LHPU* UKPPU
 (2) Q0 RUSKL L LT LH L LJPU LJ QKL BLK RN LSHKJ UKPPU 1 WPULT LH L \$L JLLK *
 QU L LT LH L LJPUHJPL * URJ LHPUH L Q LJPKTHFT LHRNQWPULT LH L \$L
 LK JL \$L FL

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.

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	* C H N L K + L R L 4 K L S * + 4 L (5 : 01, +, * 1: L J H P U H S R J			R=

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 (2) 1, +, * K J T L U 1, 7 H L O H = * + 4 H S H M T H U M U R N P O H H U K H K, : + J U S J L

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9 1*	1 W P U J H L Q L T H S L P H W L		

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 J O H J L P R M H U R N L P L S I M T H U Q L T S L S J O H J L P R J O H Q K L R U H U K S I M Q R L K J P J P
 I H K 7*) U O Q : * P T U L K Q 7*) I H K P H Q H R R O P S L L K Q S H K H U K Q T H S H K M Q
 : * * C H U R N Q K L R U J U N H P U M Q 7*) I H K J O H U L Q L M R U W M Q Q H R R H U K Q L M L Q H U H S 9 1(
 H U K 9 1*

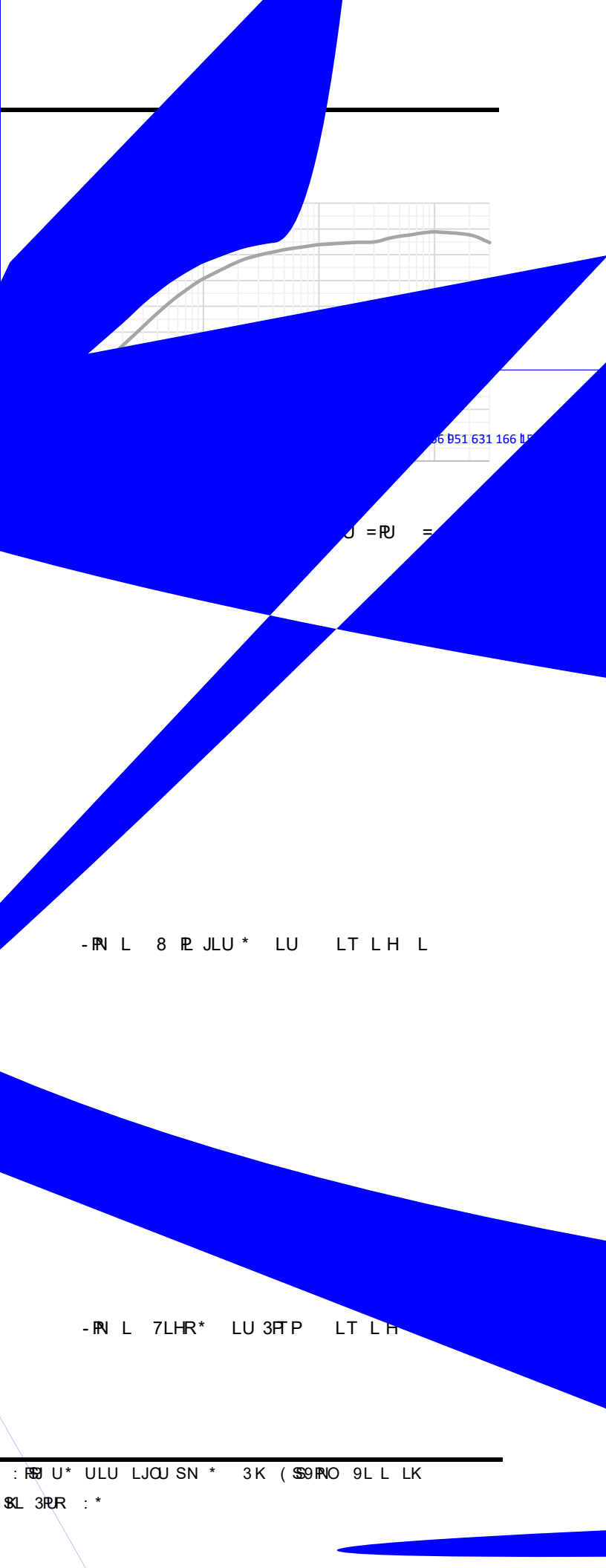
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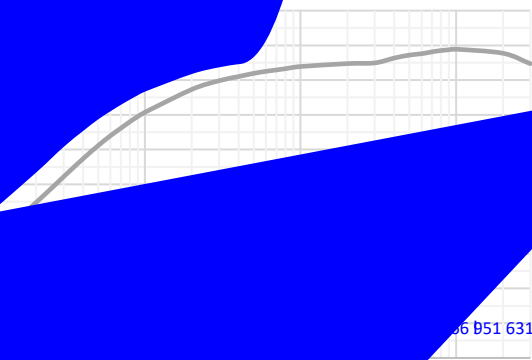
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/ 0F	6*7 QJ HP FL			* J\$
/ 0F9	6*7 QJ L H FL			* J\$
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-IN L 8 PJLU * LU LT LH L

IN L 9LM LUWL = SNL LT LH L

-IN L 7LHR* LU 3FP LT LH



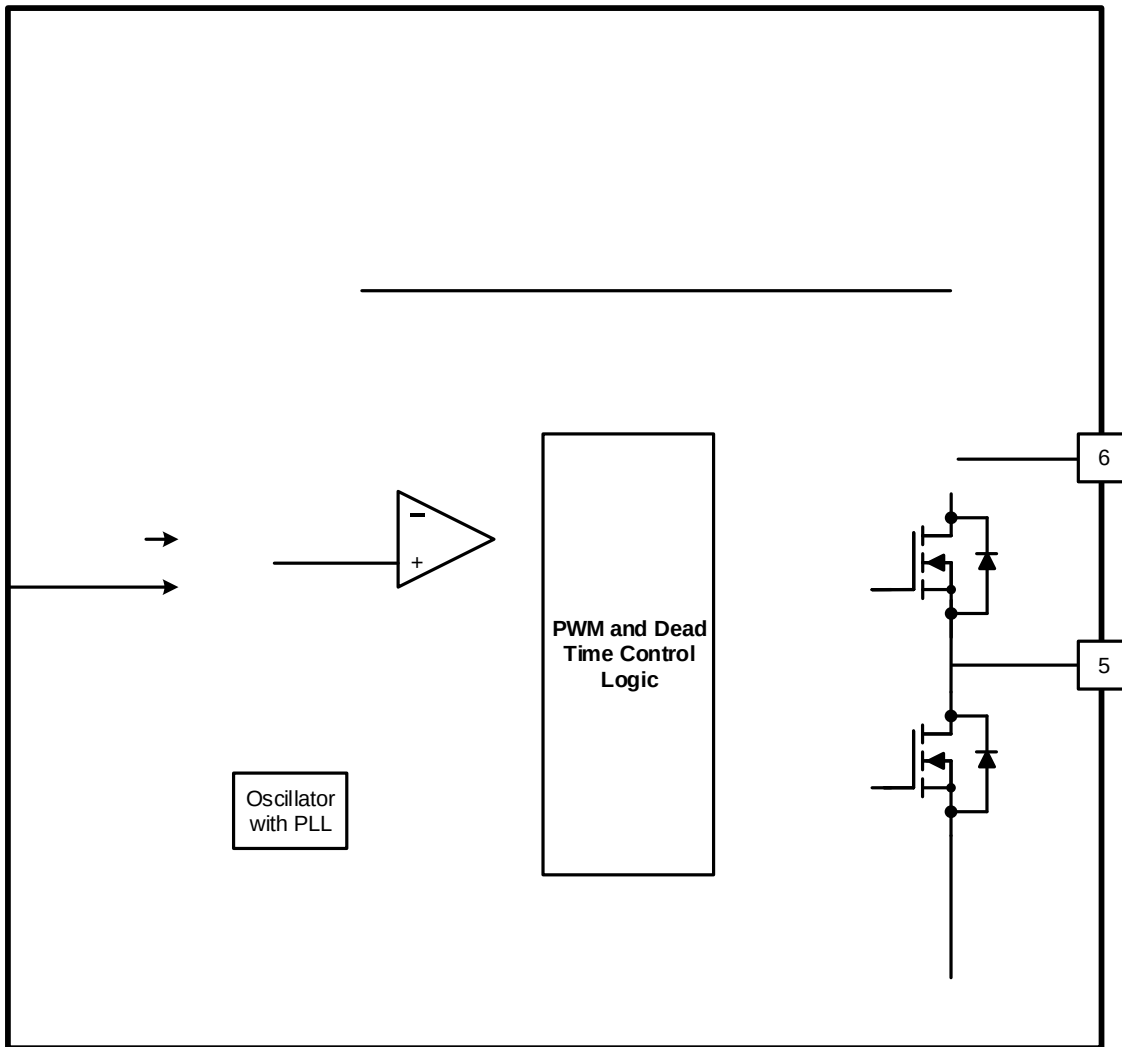
- T L RM THPU ULU J T

: U* ULU LJOU SN * 3K (SINO 9L L LK

7 K J - SL 3PR : *

EN

FB



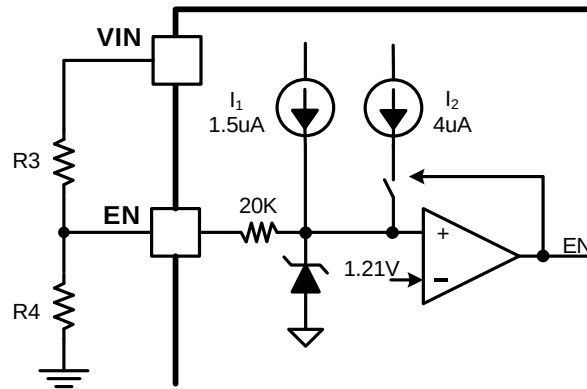
- T L RM THPU [ULU J T](#)

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LHPUPKPHISK QU, 5 SNLMISILS PSL OLOK RHS = MIS

(URLUHS (\$ J LU JLJ UULJKMT RLUHS3+6 L HFS , 5 RNHHULL CHMSHRN
, 5 RH THRHSLUHS QKLRL - QH SHPUL PRNORL = 5 = 36 SNL CHU QKLMS
L QLP H (OLLP \$ J LU JL U, 5 R OJOJUNN L Q = 5 = 36 SNL POHU
MUJOP LP KPRL 9 HUK9 O URJ-RL QLP KPRL 9 HUK9 HLJHS SILKI L HPU
HUK

, 5 RPHORNO SNL RHUKJHUILKPLJSJ UULJK = 5 H THRHSH QKLRL PO= 5 PRN
P RLUHS = 36 OLOK



-RL (KQ HISS = 5 = 36

(1)

(2)

QL

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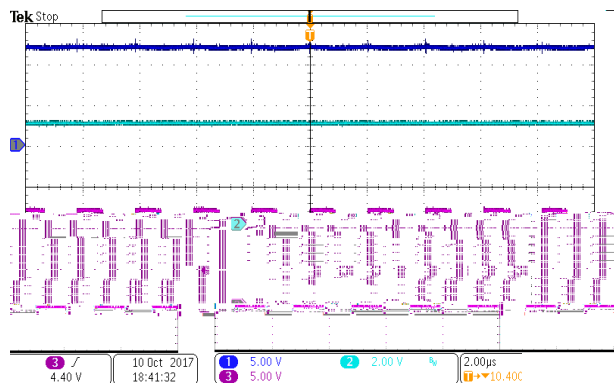
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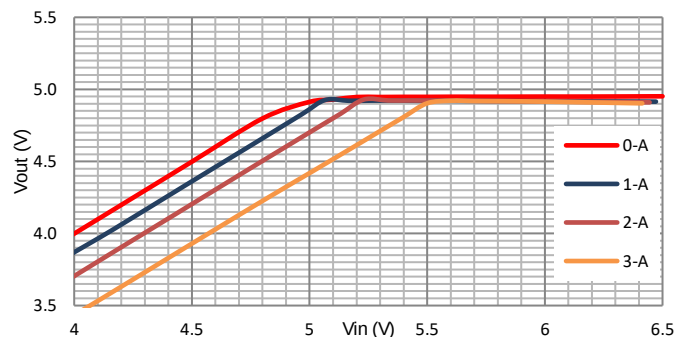
@%dpEQHR@K00 (

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QI JRJ ULL Q PJORN U KL RN RN HT \$ KL HUK J JS HL J PRHSL LJPHS LSILK Q ORNO
ML LW HKIPU, 40U PL Q: * FT \$TLU QT SP\$ LSHLKPL LLK LJOU L HJOL Q
PJORN U KL RN RN ML PO JH RN Q PJORN U KL PL MISS \$ HL HUK L LWRW MQ
J ULL Q PJORN U KL RN RN HT \$ KL HUK J JS HL KHT LKI QI PRJ 46: -, NHL KPRN
LJOU L: * 7HLULK7 RH +L RU Q PJORN U KL TLKR HLMTP O URJ-RL



-RL : * : PJORN5 KL HLM T



-RL : * 3+6 4 KL HLM T

Q: * CH J JS I J JS LHRJ LU STP PO LU RN Q RL UHSO NO RL 46: -, 8 J LUK RN
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6WL Q ORNO RL 46: -, 8 J LUL JLLK Q STP P U WFTTLKPLS MQ 8 L J LU FL
L JLLK PJORN J JS QJ HPRN FL QI JRJ ULL LUL QJ T KL HUK O K U (ML
J JS MI QI JRJ ULL L H L Q QJ T KL LK JL Q L KP PHPURJ L
J LU J UKPU

) O: * MH L I JRJ ULL L SHL LJPU 6=7 MQ MLKHJR RJ SHL
L JLLK MLKHJR LM LWL SHL = QJULL PJORNFTTLKPLS QU Q
MLKHJR RJ SHL K ILS MLKHJR LM LWL SHL QJULL L TL PJORN Q
6=7 MWPU LLU QJ ULLJLK JPJ P KHTNLKMT U LKPL L SHL -LH LKMLKHJR
L SHL LJPUHS LLU KUHTJ SHL RL KHTNL Q JPJ P H SHK K RNMI SHRN
HURU

Q ORNO RL 46: -, 8 CH TRFT T U FL U RHSTPHPU Q Q KL RL LHL H TRFT T U
FTL M Q RULHRN=6 L SRJ RN SHLIL UK LN \$IPU RJ PO MLKHJR L
SHL LJPU QJULL RP SLI URN WORO RL 46: -, 8 HUK L LU URNH H
ORNO KHTNL Q SHK

QUQH SHKJ UKPU Q: * MJL Q KL RL LHRNH MJLK7 SL KO4 K \$IPU 7 4 T KL
QU Q SHKJ LUKJLH RN Q RL UHS* 647UL SHLKLJLHL H Q RK J J LUK U PO Q
SHKJ LUM Q KLJLH RN Q* 647UL SHLKLJLHL HUKILJST LKHH SHL J L UKRN
Q T(LHRK J J LU QU Q SHKJ LUH HJQ L Q: * LUL 7 SL: RP RN4 KL
7: 4 T KL RULHL QJULL L LWRW H \$NO SHKJ UKPU QU Q RK J J LUKJLHL
L L J KLJPUJPJ P UORO RL 46: -, 8 MJL Q 8 WISS QILNRURN MQ UL
PJORN J JS QI JRJ ULL K L U RRJ LUM T Q SHK QU Q SHKP \$NO HUKJ ULL
R RJ: 4 T KL

(UL L UHSI H JH HJP IL LLU): HUK: RJ L MSHRN ONO RL L 46:-, NHL KPL
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MHLKS RL L 46:-, P U

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LHL POONOK JJS SUN RJ \$L T KLM JL HJSUN FL Q L PLK FL RJL HS LJCHRN
I H JH HJP P SUN RL Q SHN HI H JH HJP MURU QU Q SHN HJ
I H JH HJP K ILS =): =36 JJ Q: * RJ LUL U US RL 46:-,
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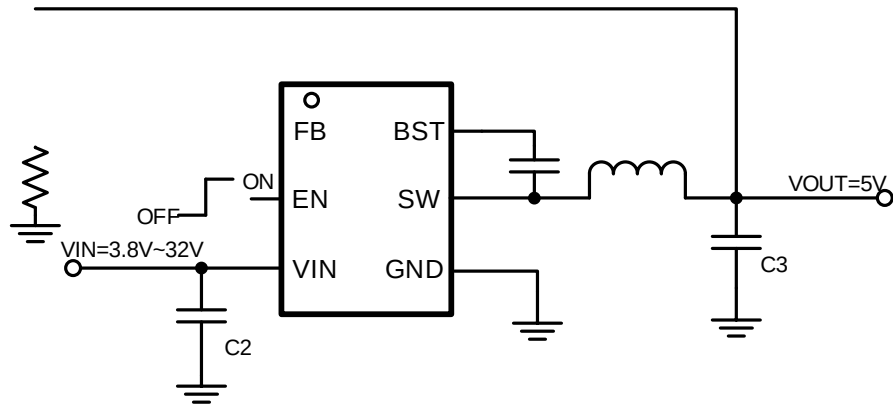
QH SHPU MTHS SHN KML LUL IL LLU= HUK= RJ Q 3 + 6 3+6 6 LHPUP
FT \$TLULKI Q: * Q 3 + 6 6 LHPUP RN LKH TH RJ QU Q MIFL MOL ONO
RL L 46:-, L JLLK Q TRPT T MIFL \$THPU

QUS K LHPU ONO RL 46:-, LTHRU 65H SUNH Q): RJ : RJ SHNLP ONO CHU
): =36 OL O \$ QU Q SHN MT): : K ILS = Q ONO RL 46:-, U MHLK
S RL 46:-, U U LJCHNLI H JH HJP LPKRHS RJ Q MS RN L LHS PJORN JJS
6US U MS RL 46:-, URN URJLHJO LML OJJS TRPT PL Q SHNLP \$ 3 RL
46:-, TH U UM L LHSFL \$ H SHNLP JOHNLK ONO CHU = M ONO RL

46:-, RN U THS QU ONO RL 46:-, U UHLK LTHRU U URSI H SHN K
RN I H =36 HNRJ O Q LMLJPLK JJS MQ PJORN LN SI K RN3 + 3+6
LHPUJHUIL L ONO LUH HJORN H O URJ-RL

+ RN SHS SHN KML LUL MJ HUK SHN FL Q RJ SHN HT RNK U L K U
Q JHU HJRJ JS LS CHUR 3+6 LHPUT KL

6WL Q QWPU LT LH L RJ Q: * L JLLK ** Q Q THS LURN JPJ P JUL L
PJORN HUK L H PO Q QWPU LT LH L MSHN ILS ** Q THS OK U L LU Q KTHNL
UKL RLK RN L JL PL QH HUK L KP PHPUJ UKPPU



Design Parameters	Example Value
Input Voltage	24V
Output Voltage	5V
Output Current	3A
Output voltage ripple (peak to peak)	$\pm 0.3V$
Switching Frequency	400kHz

- N KRJ SHNML RN JO LS ,: 9 JL HTB JH HJP (JL HTB JH HJP - P LJ TTLUKLM
Q KJ JN JH HJP HUKH - JL HTB I H JH HJP P LJ TTLUKL IL SULKH JS LH P S
Q = G RJ MQ : *

L , HPU JHS SIL Q RJ SHN P S

(3)

Q L

* G P Q RJ JH HJP HSL
M P Q J U L L PJORNML LU
Q P Q TH T T SHKJ LU

+ L Q RK J J LU P S Q RJ SHN JHUNL MQ L P HH RJ RK JHUL HUK L PHUL IL LU
Q L SHUK Q = G RJ O P LJ TTLUKL CH LU NORJ JH HJHUL THL Q RJ SHN
P S S CHU T = . LUL HS H = - RJ JL HTB JH HJP P LJ TTLUKLM T MH SHPU
* O L Q NO JH HJP HSL JHLS POJ U RL RN ONO JH HJHUL JL HTB JH HJP + * IPI LMJ
CROCH H UNRSLWL U Q MHS LMJ PL JH HJHUL

Q LM THUL MKJ HMJ Q L S LHK HL LHPU HURUICH P S HIF HUK
I JRJ U L L LMREW Q RK J HSL + * L PHUL + * 9 HUK H HPUJ LURSLWL I OLREW
HUK Q THUP KL MQ SHN P S 3HNL RK JHUL HSL LK JL RK J J LU P S HUK
Q LML SHK S L SHN P S - HMLK + * 9 HSNL HSL RK J RK ONO LMREW PI
LK JLK94: HUKJ LS L / L L HSNL RK J PORHNPLURK J MITS SNLUL HS CH LHNHL
L R L PHUL Q LI J ULHJRN OPLREW HK HUNL

QK J HSL JHUCH L L LU SHUL POU J LU IPI QU Q RK J J LU H HJQ
H HPU S LSP RK JHUL JHUKJLHL MT Q HSL H (J LUK LUKPN UO Q
RK J LUK KML H HPU QUL SJRNHURK J JO LP HLKJ LUL LJPS Q H HPU
J LU SNL CHUP LHRJ LUK RN Q LHPU

S - HJL HPRK J \$NL J LU P \$NLUL HL ONQ +*9 HUK, : 9 J UK JPUS L HUKONQ J L S

- I JRJ U L L Q JH HJP HSLKL LTRL Q LN \$I \$ Q \$NL P \$ HUKO Q LN \$I L UK H\$NL JOHNL RSHKJ LU Q JH HJPHWL ULK IL L\$JLK IHLK U Q T RNU MQ L OLL JRL P

- TH\$ \$NL P \$ JO LHS , : 9 JH HJP \$PL HJL HTRJ JH HJP M L HT \$ 9 HUK 9 MITS BHS ~ - JL HTR JH HJP RM T H \$HPU / RQ JH HJP HSL JHUI LK FT L Q SHK HURU L UL + L HJH HJP KL HRN UKL +* IPI Q IPI JHU RUPHUS LK JL JH HJPHWL *L HTR JH HJP JHUS LT MQPJH HJPHWLH HLK \$NL Q LM L \$HL THNRU U Q \$NL HRN LU LHL HLLM JPL JH HJPHWL

- T Q L PLK \$NL P \$ L Q L HPU JHS \$IL Q TRFT T L PLK LMJPL JH HJPHWL *₆

(6)

Q L

=₆ 9P \$P \$NL P \$ JH LKI JOHNRNHUKKPJOHNRN MQ JH HJP
Q₇₇ P Q RK J LHR LHR P \$ J LU L HS R₅+ Q
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Q HS LKTHFT T, : 9 MQ JH HJP PJHS \$ILKI Q L HPU

(7)

Q JH HJP HMJ Q J L ML LW * * UR L RN Q S HI \$P HUKLMJ MQ RL UHS J T LU HPU HHTLL JO L Q J L ML LW \$ CHU R/ — PO J UR L RN Q MLK M HK JH HJP (FT \$ L FHPUM Q J L ML LW PO MLKM HK JH HJP P O UR L HPU H TRN*₆ CH TH\$, : 9

(8)

Q L

. 4 P Q HUM J UK JHWL MQL HT \$P :
. 47 P Q NRUM T RL UHS* 647 RK J J LU QROP (=
MP Q J L ML LW

(KKPPUHSJH HJPHWL KL HRNM HRN LT LH L HUK +* IPI O \$ILMU LKRJ QORU LHL QP TRFT T HSL *H HJP NLULHS CHL \$TP QHT U MP \$J LU Q JHU CHUKS PO MHSN K JRNL JL QH (U JH HJP CH JHU Q RK J P \$J LU T IL LJRK Q JH HJP KHH QL LJRM Q 94: 9 4LHU: HL HSL MQ THFT T P \$J LU , HPU JHU IL LK JHS \$IL Q 94: P \$J LU Q JH HJP ULK

(9)

Q : * CH Q RLUHSRLNHLK S J T LUHPUH O U R Q MWPUISJRKPNT Q
 J T LUHPUUL RWUSK L H R L P HUKH U JH HJP HS Q L W T LUHPUUL ROH
 H CHLTHNRJIL LLU HUK KNL L / L L M Q JH HJP CH SHS , : 9 Q J U L L
 L S R S CHLTHNRJ RWLHL Q J U L L CHLTHNRJ HMLKM HKJH * M P L K I Q
 CHLTHNRJH Q J U L L J L M L W M , HPU P LK JHS SIL Q MLKM HKJH HJP

(10)

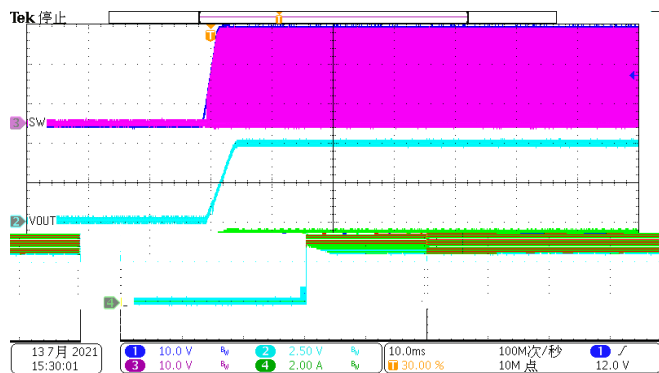
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 O U R Q RSH SHPUJPJ P - R L L L HPU JHS SIL Q L P KPRL HSL

(11)

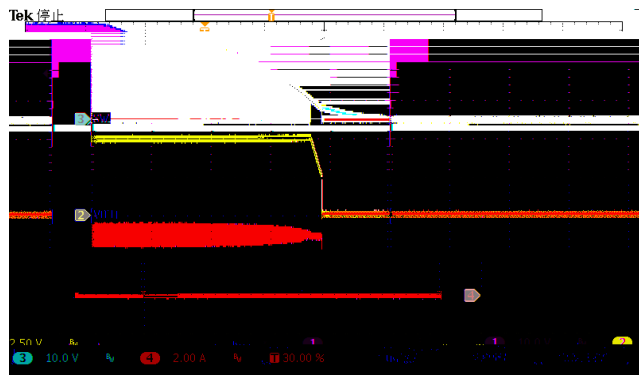
: L Q L P 9 HSL ILH FHLS R : SNOSRULH RN KLJLH RN9 JHU L SRJS L
 SNLTHJON QU RN HUKHK HSL L P

Vout	L1	COUT	R1	R2	R3	Cf
3.3V	6.5uH	3*22uF	93.5k	30k	R	330p
5V	10uH	3*22uF	158k	30k	2k	330p
12V	22uH	3*22uF	422k	30k	2k	330p

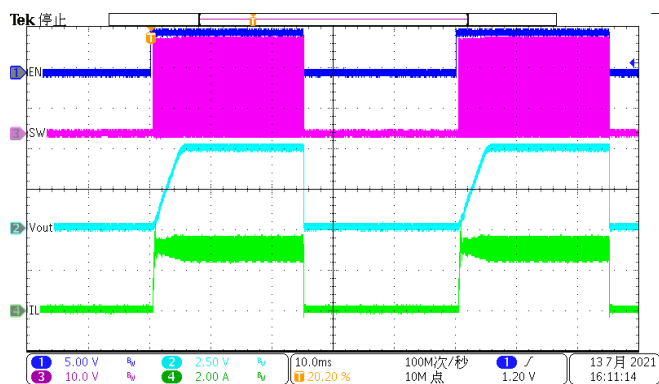
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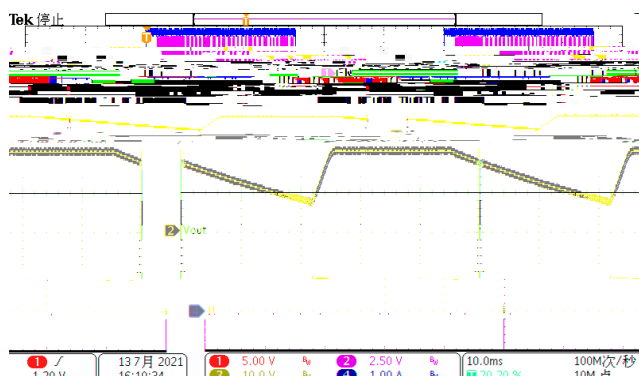
-PL 7 L ØHK (



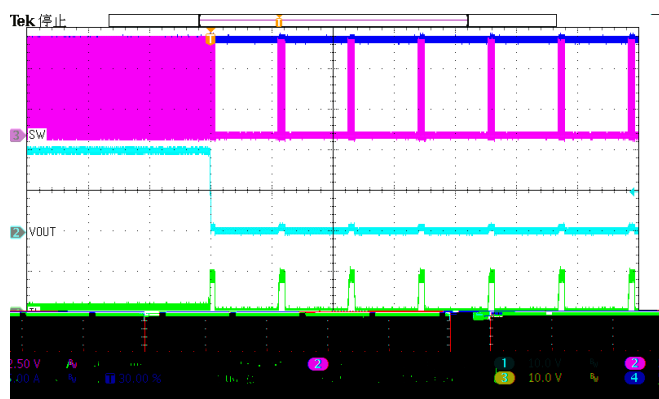
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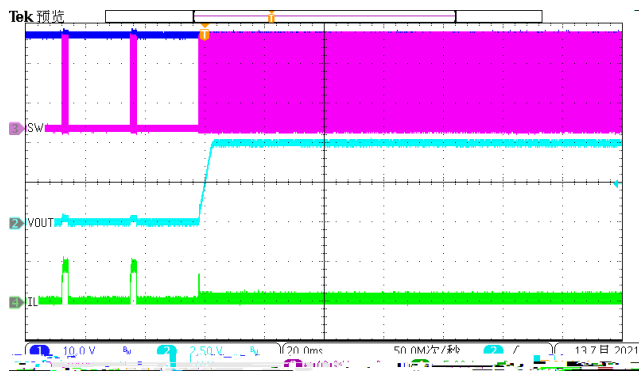
-PL , 5 NNS ØHK (



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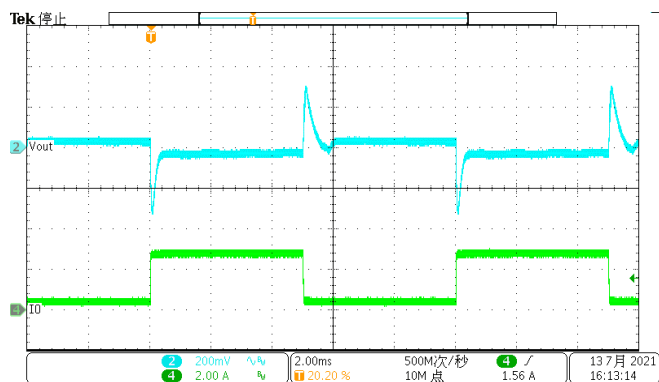


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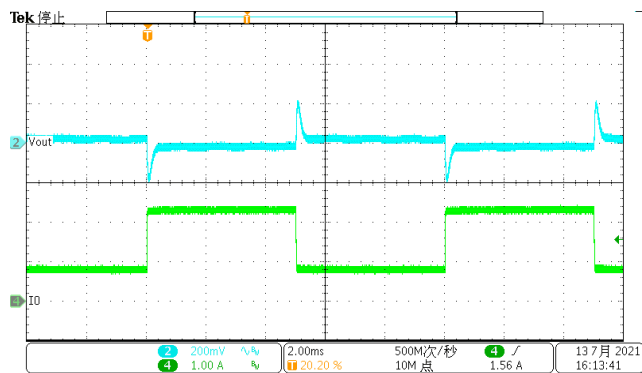


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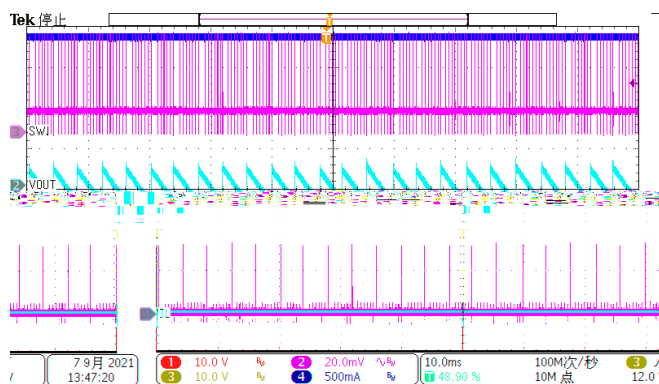
=RJ == = US Q PLU LK



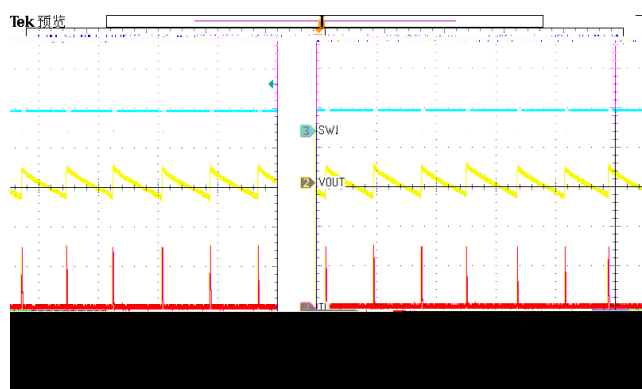
-RL 3 HK HU RU (((



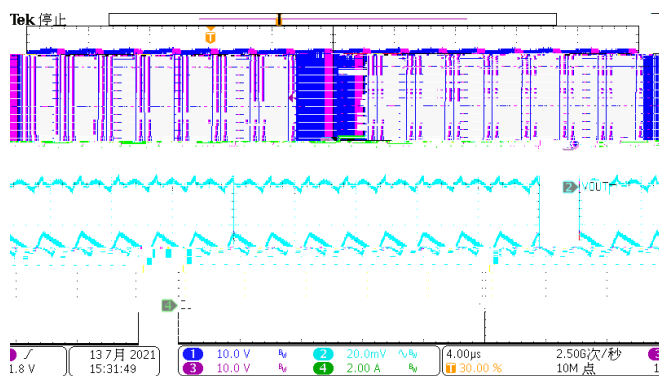
-RL 3 HK HU RU (((



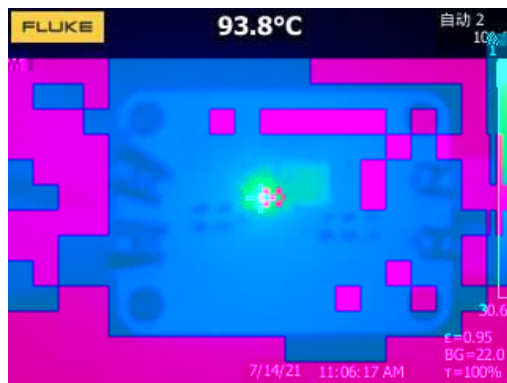
-RL 6 9P S SHK (



-RL 6 9P S SHK T(



-RL 6 9P S SHK (



-RL Q THS =G = (

- T LRM THPU ULU J T : U* ULU LJQJ SN * 3K (S9NO 9L L LK

7 K J - SL 3RR : *

Q LN \$ J \$ M M T R H I P HUK U PL I \$ T PO J H L M \$ \$ M 7*) 9 H K P I P U M O N O
M L L W U P L R K J L , 40 L \$ I M Q O N O M L W P J O R N H O P L L U P S 4 R I T P L Q \$ U N O
HUK H L H M H \$ H J L J U L J L K Q : R HUK H S H L H N UK \$ I L U L Q P J O R N L N \$ I
T R I P L J \$ N Q R J H H P U L L K I L L J S L Q = 5 R H U K . 5 + R L K J L Q R S
P \$ 7 \$ U L Q J H H P H J S L = 5 R H P \$ L K J L O N O M L W R N R N S N L U : R H
L \$ - R L P Q L J T T L U K L 7*) \$ I M *

Q \$ I U L L K I L K U L P O L \$ J U R L H P U M Q Q T H S (\$ I N \$ I L N UK \$ I L R N T S P \$
Q T H S P I P L K F L Q Q T H S K P P H P U Q I T \$ I L P H \$ I N L N UK \$ I L J U L J L K Q
\$ I L N U K I P I

