

3.8V-36V Vin, 5A, High Efficiency Synchronous Step-down DCDC Converter with Adjustable Frequency

BA2P NAO

- Q=HBA BKN QPK KPERA LLHE=FEKJO
- Q=HBA SIED PDA KHKS EIC. ACQPO
AREA0AI LAN+PQA N A RK
I EJP+LAN+FEJC0AI LAN+PQA. =JCA
AREA) / HCOIE=FEKJ (ARAH
AREA) / HCOIE=FEKJ (ARAH
- 3 EA %LQP. =JCA 2 2
- 1 L RK KJFEQKQO+ QLPQ QNAJP
- 2 AA = G. ABANAJ A2KIP=CA
- %PACN+PA I ED / EA=J I (KS / EA
, KSAN) + / 00
- , QQA / GELEIC) K A , /) SIED Q - QZAO AJP
QNAJPE / HAAL) K A
- JO) EIE Q + J FE A
- I O%PANI=H/ KBOPE=NPOE A
- FOPE HA NAVQAJ U G VRK) V
- TPANI=H HK G/ U DNKJE=FEKJ
- NAVQAJ U / LNA= / LA PQ //) K Q=FEKJ BKN
) % A Q FEKJ
- , NA FEKJ J= HA0DNACKH BKN= FOPE HA %LQP
2KIP=CA1J AN2KIP=CA (K G+ QP, NKFA FEKJ
12(+ 0DNACKH =J UOPANAO
- (KS NKLKQP) K A + LAN+FEKJ
- ANR= HA %RANFEIC2KIP=CA. ACQH+PKN
- +RANRIP=CA=J +RANOAI LAN+PQA, NKFA FEKJ
- R=FE HA E=J / +, (, = G=CA

2 LLHE 2PEK O

- QPK KPERA / UOPAI
- 1/ 0ULA , KSAN AHRANU 1/ D=NOEJC
- % COPEH=J) A E=H EONEQFA , KSAN/ QLLHBAO

AO NELPEK

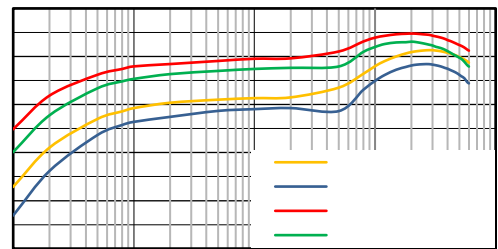
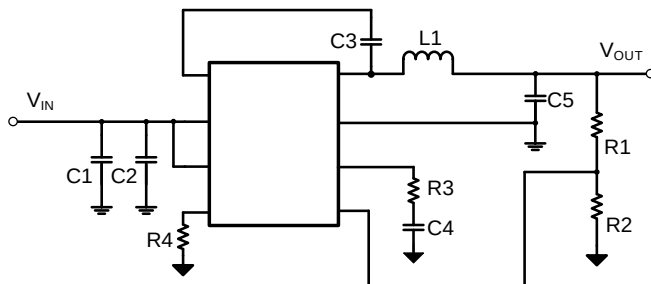
ODA / 0 - ED QJJ DNKJKQO Q G KJANPANO
SIED SEA ELQP RKIP=CA N=JCEIC BKN 2 RK 2
SDED EFACN+PAO = I DED CE A) + / 0 =J =
I HKS CE A) + / 0 ODA / 0 - = KLFEIC
PDA LA=G QNAJPI K A KJPNKH QLLKNPO PDA , QQA
/ GELEIC) K Q=FEKJ , /) SIED RULE=H Q HKS
MOZAO AJP QNAJP SDED =COPO PDA KJANPAN KJ
= DAREIC DED ABIEAJ U =P HEDP HK= KN Q=J U
KJ FEKJ

ODA / 0 - BA=QNAO = FOPE HA OSIE DEIC
BAMQAJ U BKN G VRK) VSIED =J ATPANI=H
NACOPKNSDED LNKRE AORDA BATE HURK KLFE E/A AEDAN
ABIEAJ U KNATPANI=H KI LKJAJPOE/A ODA KJANPAN
QLLKNPO ATPANI=H HK G QJJ DNKJE=FEKJ SIED =
BAMQAJ U =J BKN G VRK) V ODA
/ 0 - =HKSOLKSAN KJANPEKJ BKN DED ELQP
RKIP=CAK HKS KQLPQPKIP=CASIED=I EIE Q JOKJ
FE AKBED CE A) + / 0

ODA / 0 - ED=J HA FNKI =CJAFE %PANBANAJ A
) % BNAJ HJ Q G KJANPAN SIED IE LHA AJFEIC
KLFE E/A ACEJ BKN) %NA Q FEKJ ODA / 0 -
BA=QNAO NAVQAJ U / LNA= / LA PQ // SIED
FEPANEC QL=J KBPDA G V OSIE DEIC BAMQAJ U =J
I K Q=FEKJ NFA KBOSIE DEIC BAMQAJ U RKA Q A
PDA KJ QFA) %

ODA / 0 - KEBAND U HA U U HA QNAJPE IE=J
DE QL KRAN QNAJP LNKFA FEKJ PDANI=H ODQP KSJ
LNKFA FEKJ KQLPQKRANRIP=CA LNKFA FEKJ =J ELQP
RKIP=CA QJ ANRIP=CA LNKFA FEKJ ODA AREA ED
=R=FE HA E=J LE PDANI =HJ AJD=J A / +, (L= G=CA

PULE 2 H2 LLHE 2PEK



NAREOK DEOPKNU

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ARE AKN ANE BKNI 2PEK

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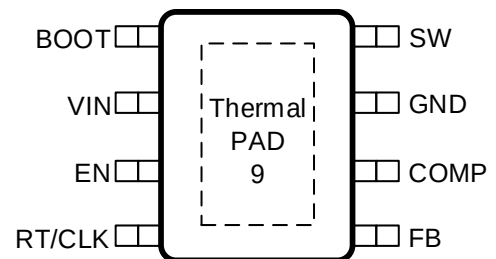
2 OKH PAI 2TE I N2PE CO

+ RANKLAN+RECBAA=ENPA LAN+PQA QJHCOOKPDANSIDA JKPA

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+ LAN+RECFQJ REKJ PAI LAN+PQA 0&			
/ RKN+CAPAI LAN+PQA 0 / 0			

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LE K BEC N2PEK



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*		NKQJ
/ 3		. ACQ=PKNOS IE DEIC KQRLQP KJJA P/ 3 PK =J ATPANI=HLKS ANEJ Q RKN
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NA KI I A A KLANPE C K PEK O

+ RANKLAN=FEJCBAA =EPAI LAN=PCNA N=JCA QJHACOKPDANS IEA JKPA

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AO NPE CO

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PDANI HE BKNI PEK

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. & RKL	&QJ FEKJ RK =OA RKL PDANI =HNACIEP=J A		
. & KP	&QJ FEKJ RK =OA KPPKI PDANI =HNACIEP=J A		
. &	&QJ FEKJ RK K=N PDANI =HNACIEP=J A		

/ 0 LNKRE AO. & =J . & JQ ANDKJIU=ONBANAJ ARK AOIE =FAFQJ FEKJ PAI LAN=PCNAOKBPDA AREAO . & =J . & =NAJKP=
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K=N , KJ SDEDPDA/ 0 - EDI KQJFA PDANI =HL= OSA =J ATPANI=HAJREKJI AJP=HB= PKNO ODA, K=N ED= DA=P
OEJGPD=PIEOKHANA RKPDAA= O=J PDANI =HL= KBPDA/ 0 - D=JOECPDA AOIEJ KN KJIEQ=FEKJ KBPDA, K=N
D=JCAORDA ABIEIAJ UKBPDA DA=POEJG=J PDANABKNAPDA= PQ=H & =J . &
) A=COQA KJ & / HUAN, ODAR=KQAOCEAJ E PDIEP= HA=NAKJIUR=HE BKN KI L=NEKJ SIEDKPDANL= G=CAO=J =JJKP
A QDA BKN AOIEJ LQNLKQAO ODAQAR=KQASANA =HQHFA E= KN=J ASIED & / =J OE QHFA KJ =CLA IEA &
K=N ODAU KJKPMLNCAJPDALANKNI =J AK P=EA E=J = PQ=HLLIE=FEKJ

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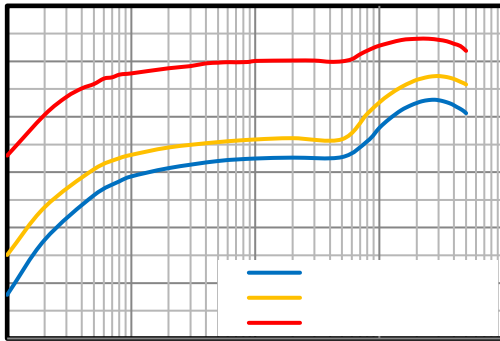
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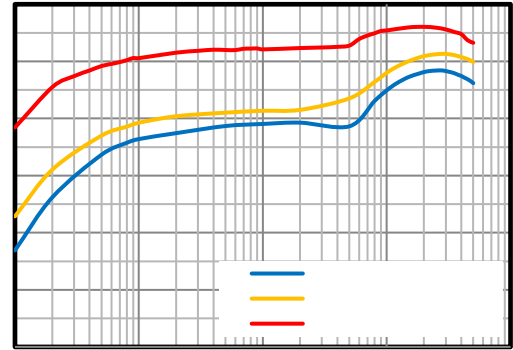
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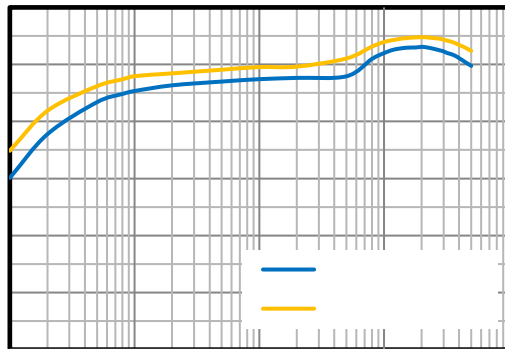
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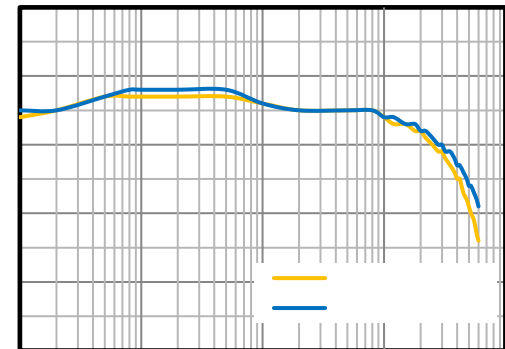
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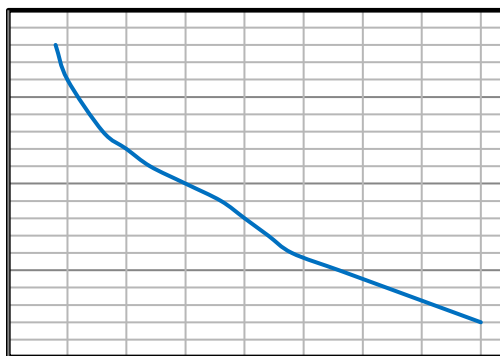
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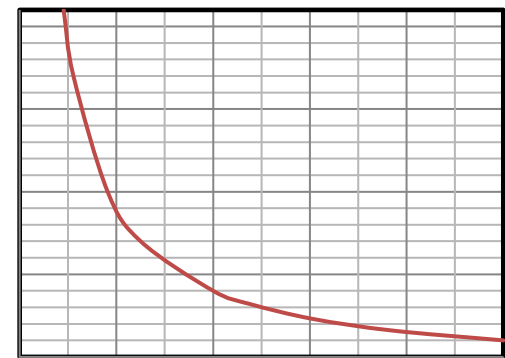
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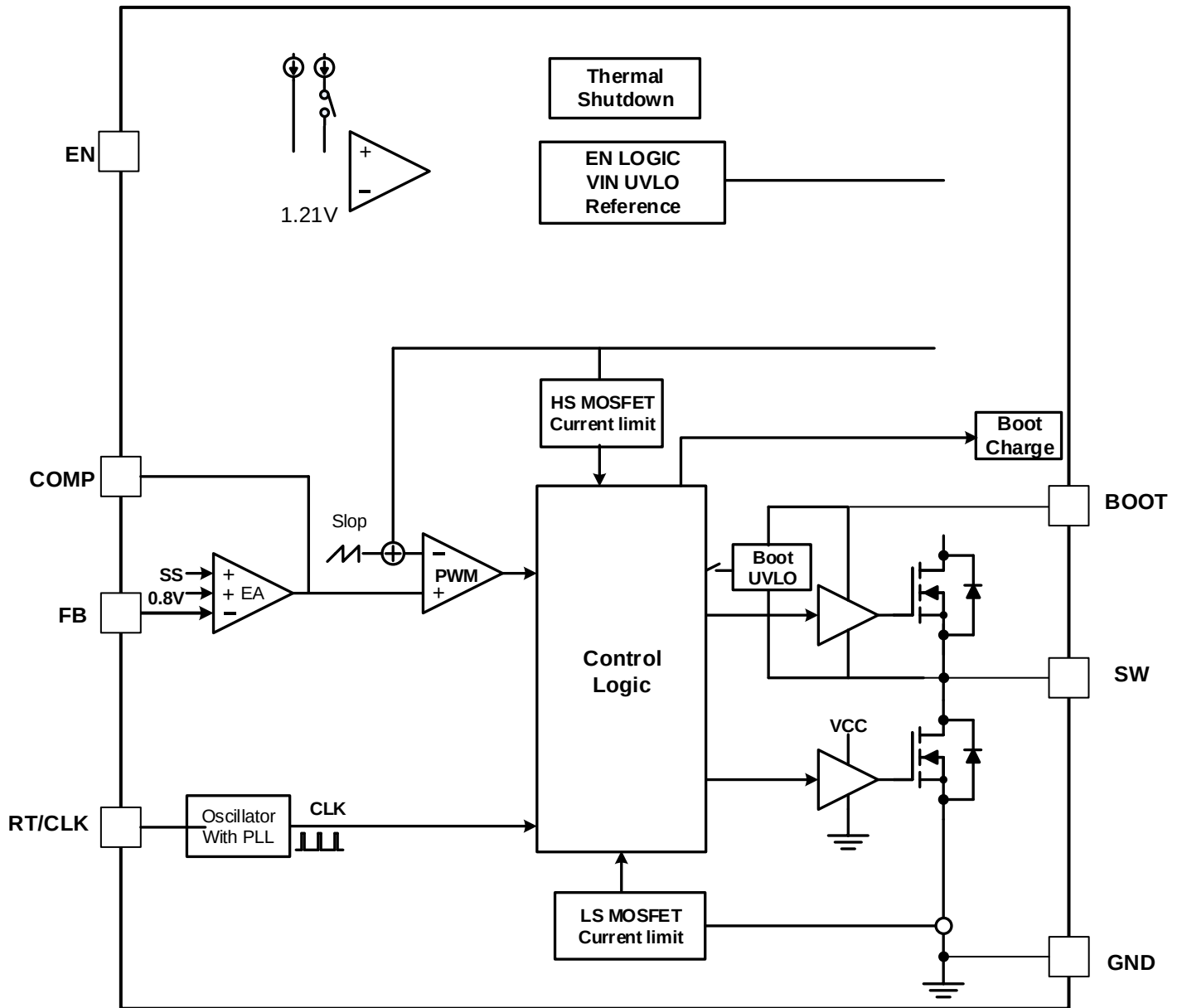
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EQNA / DQPKSJ QNAJPRO0AI LANFQNA

EQNA - QZAO AJP QNAJPRO0AI LANFQNA

EQNA * 0DNACKH R00AI LANFQNA

B PEK H HK G ENCN I



EQNA QJ PEK=H HK G ENCN I

KLANKP

ODA/ 0 - ED= 2 2 ELQP KQLP) %BAU HUQU DNKJKQD Q G KJRANFANSIED QPPE I . OKJ DED CE A=J I . OKJ IKS CE ALKSAN) +/ 00 RE LHA AJRO KJO=JPBAMQAU ULA=G QNAJPI K A KJPNKH RK NACQ#FA KQLP RKIP=CA LNKREJC AT AHJUP HA =J IK= R#JOZJP NAQKJOA =J OE LHBJEC FDA ATPANI=H BNAQAU U KI LAJG=REKJ ACEJ

ODA OSIE DEJC BNAQAU UED= FQOP= HABKI G VRK) VSIED PSK OAPPEIC I K AO NACERKNOAPPEIC BNAQAU U I K A=J FDA IK GOU DNKJE=REKJ I K A RK KLRE E/AO AEDANFDA LKSANABE EAJ U KNFDA ATPANI=H KI LKJAJRO OE/AO ODA/ 0 - BA=QNAO=J EFANI=H I OCKBP=NPPE A RK =RKE H#NCA EIMQD QNAJP=J KQLP RKIP=CA KRANCKKP QNEJC OP=NPQL ODA AREA =KQ OQLLNRO I KJHED E OP=NPQL SIED LNA EOA KQLP KJ REKJ ODA OA=I HAOOI K A R#JOE KJ A PSAJ , 3) I K A=J , /) I K A KLAN#REKJO AJQNA DED ABE EAJ U KRANSE A IK= QNAJPN#JCA ODA MQZAO AJP QNAJPE RULE=HU Q QJ ANJK IK= KNCHAL I K A KJ REKJ RK = DEARA DED ABE EAJ U=PHEDPIK=

ODA/ 0 - D=O= AB=QPELQOP=NPQL RKIP=CA KB 2 SIED I 2 DUOFANQED ODA * LEJ ED= DED RKIP=CA LEJ SIED = LNA REKJ PDNACKH PD=P =J A QOA RK = FQOPDA ELQPRKIP=CA IK GKQPDNACKH OSIED PSK ATPANI=H NACERKNOR I AAP= Q#FA DEDAN12(+ QUOFI NAMQZAN AJRO IK=REJC * LEJ AJ= HAOFDA ARE ASIED FDA EFANI=H LQHHL QNAJPRK FDA LEJ KJJA REJC * LEJ RK 2% BA HU OP=NPQL FDA AREA=QPKI =FE=HU

ODA/ 0 - E LHA AJRO FDA NAMQAU U / LNA= / LA RQ // I K Q#REKJ CLNA= EJC KB AJFANA OAH FA OSIE DEJC BNAQAU U // E LNKRAO) %LANIKNI =J A U JKP=IKSEJC AI EPA AJANCU RK OP=U E =JU KJA NA AERAN =J BKN= CEJIE=JPAJOPDKRE A

ODA/ 0 - EQHLNKFA REKJ BA=QNAOE HQ AFDA ELQOPQ ANRKIP=CA IK GKQPDNACKH KQLP KRANRKIP=CA LNKFA REKJ KRAN QNAJPN LNKFA REKJ SIED U HA U U HA QNAJPE IE EJC =J DE QL I K A KQLP D=N OCKNP LNKFA REKJ =J PDANI =HODQ KS J LNKFA REKJ

A 51

ODA/ 0 - AI LKHUEHA BNAQAU ULA=G QNAJPI K A KJPNKH J EFANI=H IK GEJE#FAO RQNEJC KJ FDA EFAC#FA DED CE ALKSAN) +/ 0 - E A= D U HA FDAJ E Q RKN QNAJPNDAOHEA=NUJ 3 DAJ FDA QNAJPNKQD DED CE A) +/ 0 NA= DAOFDA PDNACKH HARAHOP U FDA +) , RKIP=CA KB FDA EFANI=HANIKNI I LHEAN FDA DED CE A) +/ 0 RQNO KEB ODA QUJ DNKJKQD IKS CE A) +/ 0 - RQNO KJ REH FDA JATP IK G U HA ACEJ OKNFDA E Q RKN QNAJPB=HODRK VANK

ODA ANIKNI I LHEAN OANRA OFDA +) , JK A U KI L=NEJC FDA RKIP=CA KB FDA LEJ SIED =J EFANI=H 2 NABANAJ A RKIP=CA 3 DAJ FDA IK= QNAJPE NA=OAO = NA Q REKJ E FDA BAA = GRKIP=CA NA#REARK FDA NABANAJ AN#EAO +) , RKIP=CA REH FDA =RAN#CA E Q RKN QNAJPI =P DAOFDA E NA=OA IK= QNAJP ODEBAA = GIKKL SAHNAQ#FA OFDA KQLP RKIP=CA RK FDA NABANAJ A ODA AREA =KQ EFAC#FAO=J EFANI=HOKLA KI LAJG=REKJ EN QNU RK LNARAJPOQ D=NI KJE KO REH REKJ SDAJ QRU U HA EONA=PANFD=J BKN= EHA BNAQAU ULA=G QNAJPI K A KJPNKH

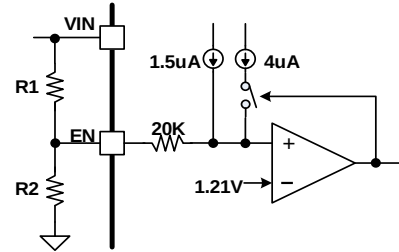
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ODEJ KJPNKH ODAI ADAHO= DEAREJC DEDANABE EAJ U U OGELEJC U HAOR NA Q A OSIE DEJC LKS ANIKQD=J C=FA NERA D=NEJC IKQD ODA KJPNKHAN KJOQ LREKJ MQZAO AJP QNAJPE Q QNEJC OGELEJC LANIK SIED JK OSIE DEJC RK IE LNKRA ABE EAJ U EQNDAN

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ODA/ 0 - EAJ= HA SDAJ FDA 2% LEJ RKIP=CA NEOA= KQ 2 =J FDA * LEJ RKIP=CA AT AA OFDA AJ= HA PDNACKH KB 2 ODA AREA ED E= HA SDAJ FDA 2% LEJ RKIP=CA B#HOD AKS 2 KNS DAJ FDA * LEJ RKIP=CA ED

AKS 2 J EFANI=H Q LQHQL QMAJPOKQNA RK * LE =HKSOFDA AREA AJ= HASDAJ * LE BK=PD
 * LE ID= DEDRKIF=CALE PD=P J A KJJA PA RK 2% BA RIJRK Q=NPQL FDA AREA
 KN= DEDANUOFI 12(+ PDNACKH KJJA P=J ATPANI=HACERKN IRE AN. =J . OOKS J E IQNA BKI 2%
 RK * ODA12(+ NEEC=J B=HHC PDNACKH =J A =HQ#FA U MQ=FEKJ =J MQ=FEKJ NAOLA FERAHI



SDANA

- 2_{NEA} IDNEEC PDNACKH KB2 E 12(+
- 2_{B=HHC} IDB=HHC PDNACKH KB2 E 12(+

IQNA / UOFI 12(+ UAJ= HA IRE A

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ODA / 0 - NACQ#FAO FDA EFANI=H NABANAJ A RKIF=CA =P 2 SED ± RIAN#J A KRAN FDA KLAN#FEJC
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 FDA NACQ#PKNS BHI AI KNA QOD ALFE HARK JKEDA =BA FEJC KQLQPRKIF=CA= Q# U

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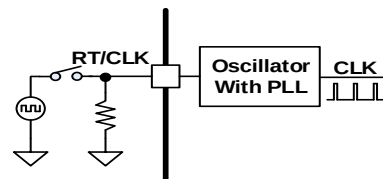
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 NABANAJ ARKIF=CA E I O BFA * LE IDLCHA AKS 2 OS IE DEJC OKLO=J FDA EFANI=HOKERQ=NP NACER
 ODA OKERQ=NP=K K NACER QNEC ODQ KS J QARK PDANI =HKRANK= EC

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ODA OS IE DEJC BANMAJ U KBFA / 0 - EOAP ULH EC= NACERKN AFSAAJ . 0 (LE =J FDA CNKQJ KN
 QJ DNKJ E/C RK=J ATPANI=H IK G

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 KRAN#SEAN#JCA BKI G VRK) V ODA . 0 (LE RKIF=CA IDPULE=H 2 . 0 (LE IDJKP=HKS A RK A
 HAPBK=FEJC KNODKNA RK FDA CNKQJ 1OA MQ=FEKJ KNFDA LKPE IQNA RK APANI EJA FDA NACER=J A BKN=
 OS IE DEJC BANMAJ U JAA A



SDANA EOS IDOS IE DEJC IK GBANMAJ U

IQNA / APFEJC BANMAJ U=J IK G/ UJ DNKJ E/FEKJ

% IK GOU DNKJE=FEKJ I K A FDA OSIE DEICBNAMQAJ UOU DNKJE/AORK=J ATPANI=H IK G=LLHEA RK. 0 (LEJ ODAOU DNKJE=FEKJ BNAMQAJ UNJCAIBNKI G VRK) V=J PDANIECA CAKBDA/3 OU DNKJE/AORK FDA B=HECA CAKBDA ATPANI=H IK G=P. 0 (LEJ SIEDRULE=H JOHE A A#U OMQ=NAS=RA IK GOEJ=HK. 0 (LEJ I QOPD=RADED HARAHUK IKS ANPD=J 2 IKS HARAHUK DEDANPD=J 2 =J LQCASEPDH#NANPD=J JO

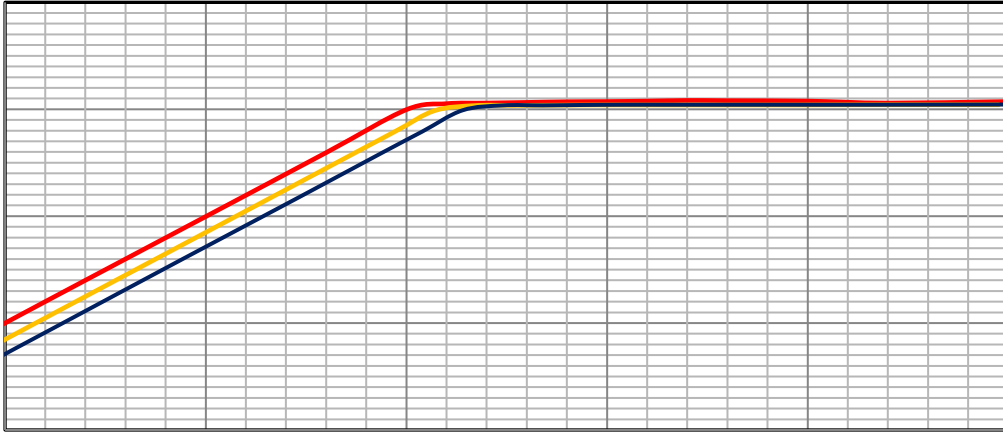
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J ATPANI=H KKPON#L =L= EKN APSAAJ ++0 LEJ=J / 3 LEJ LKSANDFDA BK=FEIC C=FA NERANIK DED OE A LKS AN) +/ 0 ODA KKPON#L =L= EKNRKIP#CA ED D=NCA BKI =J EFACN#PA RKIP# FQOP



EQNA (+ + LAN#FKJ D=N# FANIDE 2KQP 2

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0DA EJ Q#KN QNAJPEI KJ#KNA QNEC DED CE A) + / 0 - =J HKS CE A) + / 0 - KJ 0DA / 0 -
 IE L#AI AJFO KRAN QNAJPLNKFA FKJ SIED U#A U U#A HE IEJC DED CE A) + / 0 LA=G QNAJP=J HKS CE A
) + / 0 R=H#U QNAJPK=RKE EJ Q#KN QNAJPNQJJE C=S=U QNEC QJATLA FA KRANK= KNKQLPD=N OCKNP
 KJ IEKJ

3 DAJ KRANK= KND=N OCKNP D=LLAJO FDA KJ#RAN#AN =JJKPLNKRE A KQLP QNAJPK Q=FEBJ H#E EJ C#ANQ#AN AJP
 0DA EJ Q#KN QNAJPEI H#I LA =PKRAN QNAJPIE IE#FKJ 0DQO FDA KQLP QPKIP#CA NKLO AHKS NACQ#FA RKIP#CA
 SIED RKIP#CA H#OQD=J EFANI=HNABANAJ ARKIP#CA KJFE QKQ#U 0DA +), LEJ RKIP#CA N#I LOQL FK DED H#I L
 RKIP#CA 2 RLE=H3 DAJ +), RKIP#CA ID H#I LA BKN U#AO FDA KJ#RAN#ANOKLOSIE DEJC EFAN#I =EJC
 + BKN U#AO FDA ARE A NAC#N#OBKI QK#P#NIEC LD=OA #KRANK= KND=N OCKNP KJ IEKJ OPH#ATERO
 QNEC OKEP#NP=J I =GA +), RKIP#CA H#I LA =PDIED BKN U#AO FDA ARE A AJFAND E#K FQ#JE C KBI K A
 =C=EJ 3 DAJ KRANK= KND=N OCKNP KJ IEKJ ID#AI KRA FDA ARE A =QKI =FE=H#U NA KRAN#K AJFAND JKNI =H
 NACQ#FEJ CLAN#FKJ

0DA DE QL LNKFA FKJ I K A= KRAI =GAOFDA =RAN#CA OCKNP IE#Q# QNAJPK =H#RE#FA PDANI =HEOQAO=J LNKFA P
 FDA NACQ#PKN

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0DA / 0 - IE L#AI AJFO FDA + RAN#KIP#CA, NKFA FKJ +2, IE#Q#U#KI EJE E#AKQLP QPKIP#CA KRAN#CKKP QNEC
 H#E R#JO#AJP NA KRAN#C B#KI KQLP B#Q#P KJ IEKJ KN#ED#H#E R#JO#AJP 0DA KRAN#KIP#CA KI L=N#R#NEJ +2,
 IE#Q# KI L=NAOFDA LEJ RKIP#CA FK FDA EFANI=HNABANAJ ARKIP#CA 3 DAJ RKIP#CA AT AA O KBEFANI=H
 2 NABANAJ ARKIP#CA FDA DED CE A) + / 0 FQ#JOKEB#K=RKE KQLP QPKIP#CA KJFE QA#K EJ NA=OA 3 DAJ FDA
 LEJ RKIP#CA B=H#D AHKS KBFDA 2 NABANAJ ARKIP#CA FDA DED CE A) + / 0 =J FQ#I KJ =C=EJ

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0DA / 0 - LNKFA FDA ARE A B#KI FDA =I =CA QNEC AT AOCRA DA=P=J LKS AN EOE=FKJ KJ IEKJO
 + J A#DAFQJ FKJ FAI LAN#FQNA AT AA O FDA EFANI=HDANI =H#AJCKNOKLOLKS AN) + / 0 OOSIE DEJC 3 DAJ
 FDAFQJ FKJ FAI LAN#FQNA B=H#D AHKS FDA ARE A NAC#N#OSIE EFANI=H#K#P#NPLD=OA

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0DAKQPKIP-CA EOAP U=J ATPNI=HACPKN IE AN
=J . E RULE=H =LLIE=PKJ ODAI =FE
. A KI I AJ A . NACOP=J AEO 1 OA MQ=PKJ
PK =HQ#FA.

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SDANA

- 2. EODABAA = GMBANAJ ARKIP-CA RULE=H
2

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EDANOSIP DEICBAMQAJ EAOQLKIPQ =HANLNKEAOKBKQLOPE QPKND=J KQLOP =L= EKND NACQPEC E HKSAN
RKIP-CA=J QNAJPNELHAO

PK IKS ANKQLQPRKIF=CA NELIA KS ARAN FDA HNCANR=KDA E Q RKN=IS=UO KNAQLKJ ORK = ECANLDUCE=HOS/A
 DEDANOANZONACED=J A =J IKS ANO=QNFREKJ QNAJP CKK NCHABKN APANI EJC FDA E Q P=J ARK QDA EPR =HKS
 FDA E Q RKNLA=GFK LA=GNELIA QNAJPRK A=LLNKTE =PAUJ Z KBFDAI =TE Q KQLQP QNAJP

ODALA=GFK LA=GNELIA QNAJPEI FDA E Q RKN%, =J A =HQ#FA =OE MQ=REKJ

3 DANA

- %, EFDA E Q RKNLA=GFK LA=G QNAJP
- (EFDA E Q P=J AKBE Q RKN
- B₃ EFDASIE DECBAMQAJ U
- 2+10 EFDAKQLQPRKIF=CA
- 2% EFDALQPRKIF=CA

/ E A FDA E Q RKN QNAJPNELIA E NA=CAOSIEFDAELQPRKIF=CA CK FDAI =TE QNAELQPRKIF=CA E =LLHE=REKJ E NAP
 =IS=UOQDA RK =HQ#PAFDAI EIE Q E Q P=J ANAVQEA 1OA) MQ=REKJ RK =HQ#PAFDA E Q P=J AR=KDA

3 DANA

- () % EFDAI EIE Q E Q P=J ANAVQEA
- B₈ EFDASIE DECBAMQAJ U
- 2+10 EFDAKQLQPRKIF=CA
- 2% I =T EFDAI =TE Q ELQPRKIF=CA
- %₀₁₀₁ =T EFDAI =TE Q IK= QNAJP

= 5

0DA ELQ QNAJPK FDAOAL KSJ KJRAPIED ID KJFECKQO FDANBKNA ENAMQBAO= =L= BKNPK OQLIURDA
QNAJPK FDAOAL KSJ KJRAPIANSDEAI =EP=BJECFDA ELQPKIF=CA 1 CA =L= BKNDSEIDHS / .
BKN ABNLAIBNI =J A ANI E =L= BKNDSEID4 . KN4 . BAH FNE O=NA QQQ=HU QQQCAQFA

- 2% EDA ELQPKIP-CA

QARK =L= BKNO ACN= BC QJ AN EO PDA EO RKIP-CA =J OEJEE=JRU NA QA =L= E-J A ANI E
=L= BKNO =J IKOA I KOPKBDANI =L= E-J A =PN=FA RKIP-CA ODANBKNA HA=RAI =NCE KJ PDA RKIP-CA N=BC RK
AJQQA= AMQ=FA ABBA FEA =L= E-J A OULE=HU RSK ANI E KQRLQ =L= BKNO SKNGBKNI KOP=LLHE=REKJO

ODA / 0 - AI LIKUOLA=G QNAJPI K A KJPNKHBKNA=QJ KI LAJO=REKJ =J B=OPN=JOAJPNALKJOA J
ATPANI=HJAPSKNG KI LNEJC NAOEPA. ANI E =L= BKNO =J KLREKJ=H KJJA PA RK PDA +), LEJ EO
QQA BKNPDA IKKL KI LAJO=REKJ ODA MQ=REKJ OOKS OFDA IKOA IKKL Q =HCEJ=HN=JOANBQ REKJ

SDANA

- EDANIKN=I LHEZANKIP-CA C=EJ
- %* / ED +), RK / 3 QNAJPN=JO KJ QP=J A 2 RULE=HU

ODA RKIP-CA C=EJ KBPDA IKKL EOCRAJ U MQ=REKJ

ODA QUOPAI D=OFK JKPASKNEDU LKHAO KJA ED QARK PDA KI LAJO=REKJ =L= BKNO =J PDA ANIKN=I LHEZANKQRLQ
NAOEKN ODA KPDANE =QQA UPDAKQRLQ =L= BKNO =J PDA IK= NAOEKN ODA QALKHAO=OIK =FA =P

SDANA

- . + EDANIKN=I LHEZANKQRLQ NAOEKN
- ED NIKN=I LHEZANPN=JO KJ QP=J A Q RULE=HU
- . (+ EDAMQ=FAJPIK= NAOEKN

ODA QUOPAI D=OKJAVANK BIE LKNP=J ABKI . =J BV EOCQA RK KQIPAN= PDA BL =J BV IK =FA =P

ODA QUOPAI I =UD=FA=JKPDANE LKNP=JPVANK EBPDAKQRLQ =L= BKNO=O=HNCA =L= E-J AKN=DED /. R=KQA
ODA VANK QARK PDA /. =J PDA =L= E-J AKBPDAKQRLQ =L= BKNO =HQ=FA U MQ=REKJ

% PDE =CA =PDE LKHAO AP UPDAKLREKJ=H KI LAJO=REKJ =L= BKNO =J PDA KI LAJO=REKJ NAOEKN. EOCQA
RK KI LAJO=PA OFDA ABBA PKBPDA /. VANK ODIOLKHAO =HQ=FA U MQ=REKJ

ODA NKOKRANBNAMQAJ UKB KJRPANEDOKS J E MQ=REKJ

0DAQUOPAI NKOOKRANBNAMQAJ U SDANAPDABAA = GIKKL D=OQJEU C=E IE LKNP=JP IKS AN NKOOKRANBNAMQAJ U
NACQPD E OHS ANIHA=J IK= P=JOZAJPNALKJOA DEEDAN NKOOKRANBNAMQAJ U KQH =QDA PDA QUOPAI QJOP= HA
NA KI I AJ A NQAKBPDQ IOPK OAPFDA NKOOKRANBNAMQAJ UFK A=LLNKTE =FAHJ KBCSIE DEICBNAMQAJ U
0DA BKHKSEIC OPALO =J A BKHKSA FK =HQHFA PDA ATPANI=H KI LAJO=FEKJ KI LKJAJPO =HQHFA PDA
KI LAJO=FEKJ NACQPN. SIED MQ=FEKJ KJ A NKOOKRANBNAMQAJ U EOAH FA

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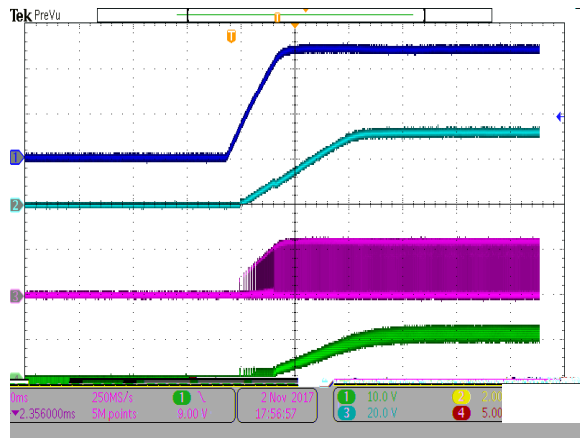
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MQ=FEKJ

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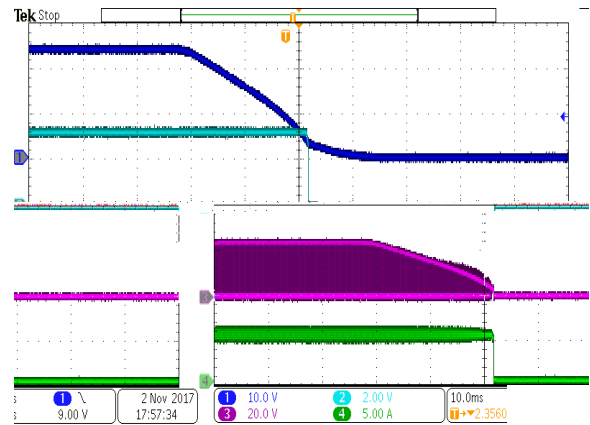
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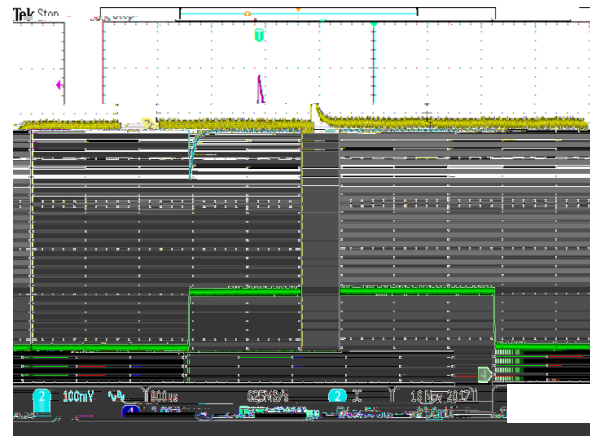
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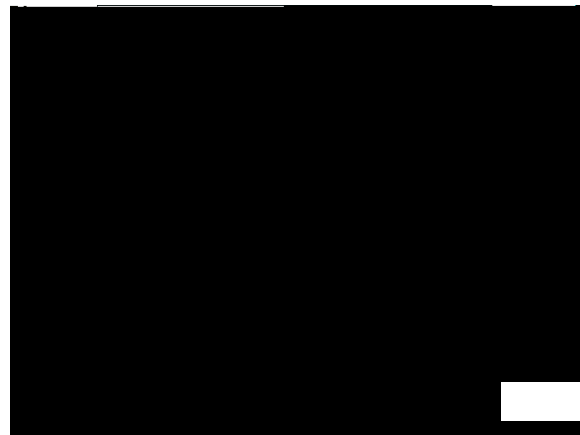
EQNA , KS AN KS J



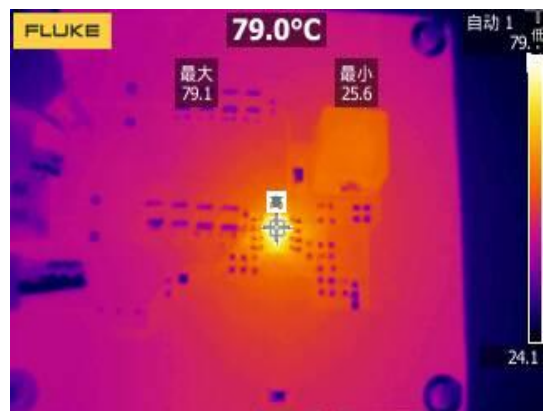
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EQNA (K= 0N+J0AJP I QO



EQNA / 3 =J 2KQP. ELHA



EQNA 0DANI =H 2KQP

P2 LA2 NAAHE BKNI 2PEK

