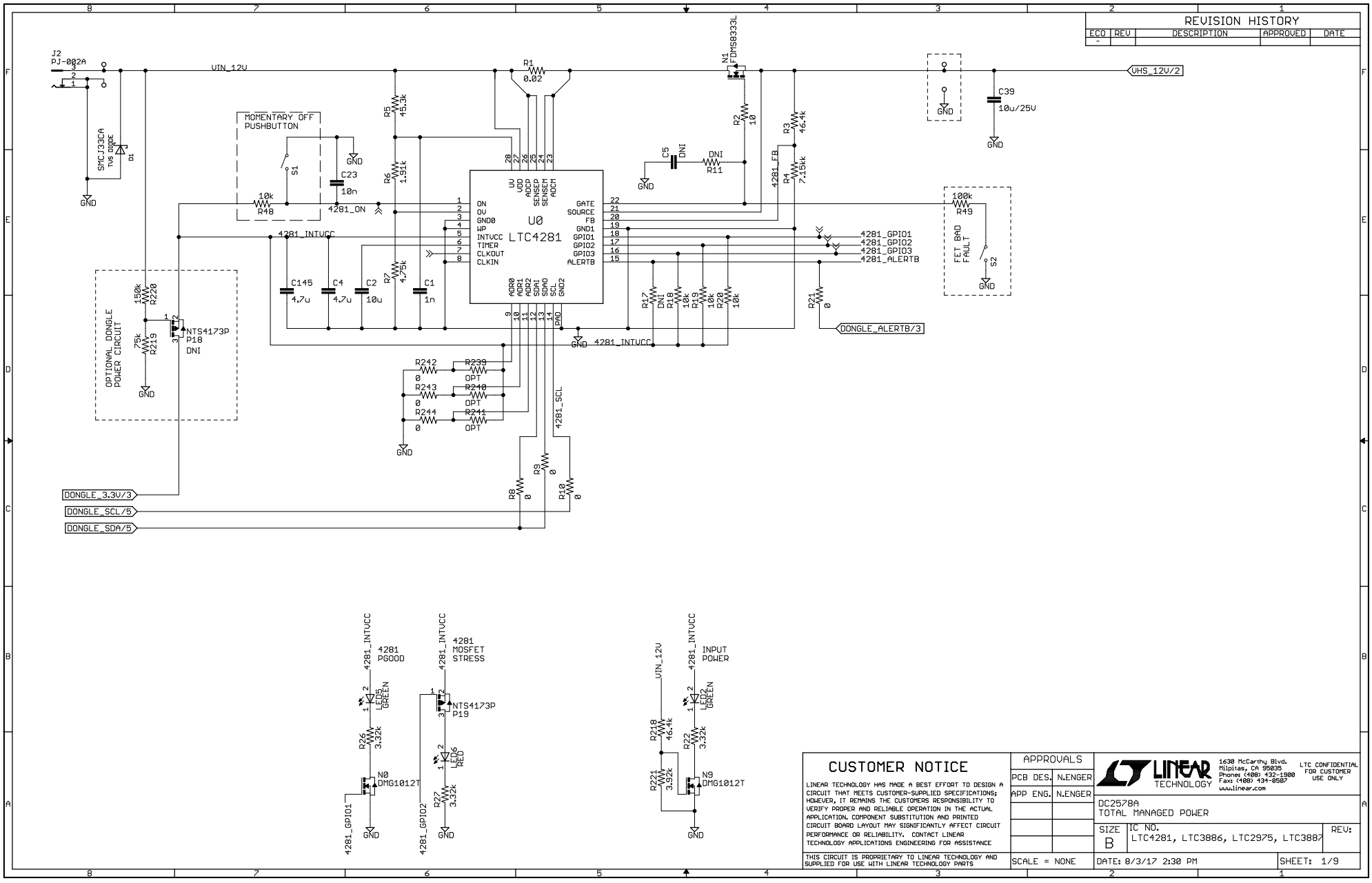
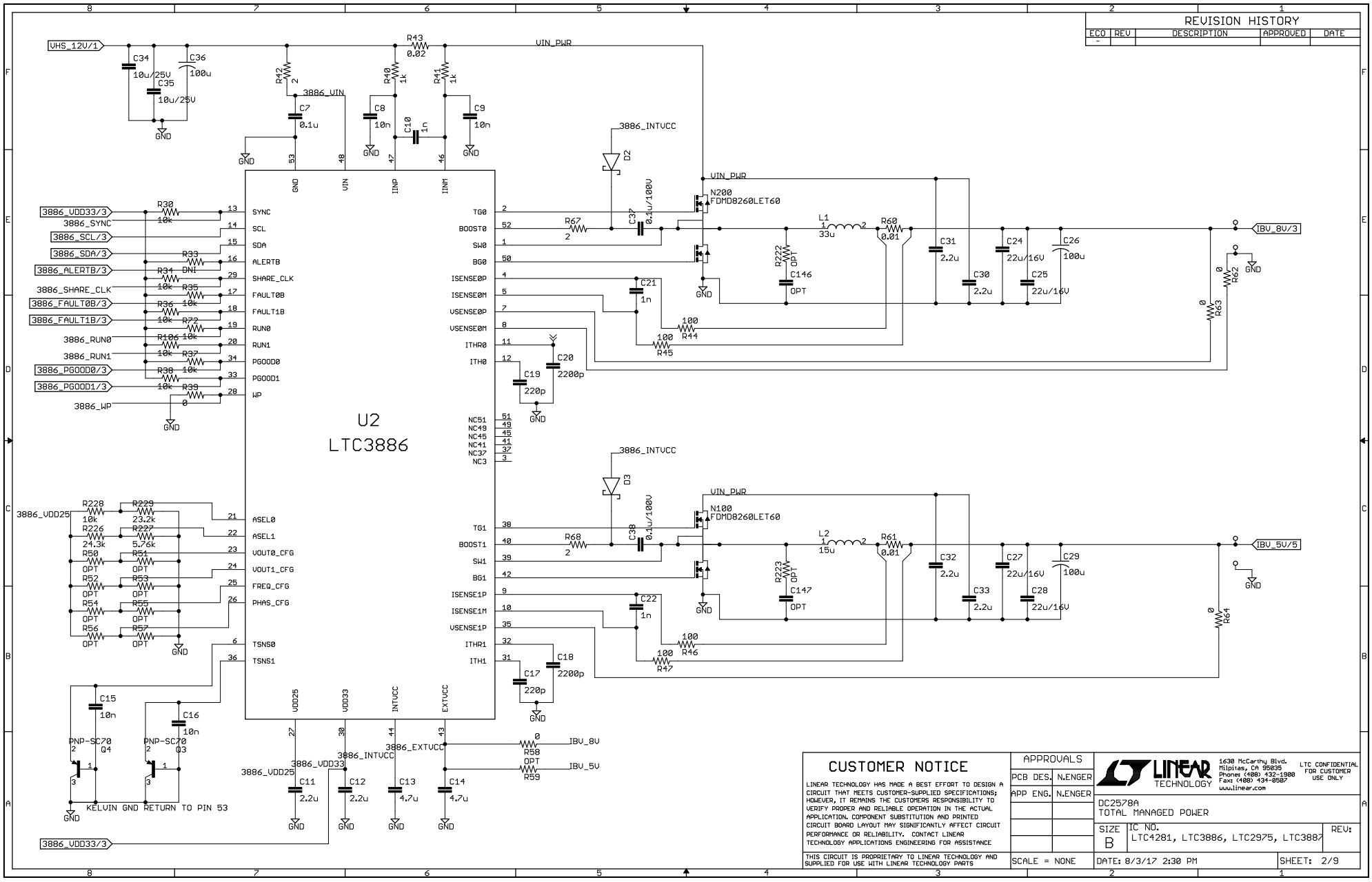

REVISION HISTORY
ECO REV DESCRIPTION APPROVED DATE
-
J2
PJ-002A
VIN_12V
SMCJ33CA
TVS DIODE
D1
GND
MOMENTARY OFF
PUSHBUTTON
S1
C23
10n
4281_ON
10k
R48
R1
0.02
R5
45.3k
R6
1.91k
R7
4.75k
C1
1n
C2
10u
C4
4.7u
C145
4.7u
4281_INTVCC
U0
LTC4281
ON
OV
GND0
WP
INTVCC
TIMER
CLKOUT
CLKIN
UV
VDD
ADCP
SENSE
SENSEM
ADCM
GATE
SOURCE
FB
GND1
GPIO1
GPIO2
GPIO3
ALERTB
ADR0
ADR1
ADR2
SDA1
SDA0
SCL
GND2
PAD
N1
FDMS8333L
R2
10
R3
46.4k
R4
7.15kk
4281_FB
C5
DNI
R11
DNI
C39
10u/25V
VHS_12V/2
100k
R49
FET BAD
FAULT
S2
4281_GPIO1
4281_GPIO2
4281_GPIO3
4281_ALERTB
R17
DNI
R18
10k
R19
10k
R20
10k
R21
0
DONGLE_ALERTB/3
OPTIONAL DONGLE
POWER CIRCUIT
150k
R220
75k
R219
Q2
NTS4173P
P18
DNI
R242
0
R239
OPT
R243
0
R240
OPT
R244
0
R241
OPT
4281_SCL
R8
0
R9
0
R10
0
DONGLE_3.3V/3
DONGLE_SCL/5
DONGLE_SDA/5
4281
PGOOD
LED5
GREEN
R26
3.32k
Q0
DMG1012T
4281_GPIO1
4281
MOSFET
STRESS
Q2
NTS4173P
P19
LED6
RED
R27
3.32k
4281_GPIO2
INPUT
POWER
LED7
GREEN
R22
3.32k
R218
46.4k
R221
3.92k
Q9
DMG1012T
CUSTOMER NOTICE
LINEAR TECHNOLOGY HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS; HOWEVER, IT REMAINS THE CUSTOMERS RESPONSIBILITY TO VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT PERFORMANCE OR RELIABILITY. CONTACT LINEAR TECHNOLOGY APPLICATIONS ENGINEERING FOR ASSISTANCE
THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS
APPROVALS
PCB DES. N.ENGER
APP ENG. N.ENGER
SCALE = NONE
LINEAR TECHNOLOGY
1630 McCarthy Blvd.
Milpitas, CA 95035
Phone: (408) 432-1900
Fax: (408) 434-0507
www.linear.com
LTC CONFIDENTIAL
FOR CUSTOMER
USE ONLY
DC2578A
TOTAL MANAGED POWER
SIZE B
IC NO. LTC4281, LTC3886, LTC2975, LTC3887
REV:
DATE: 8/3/17 2:30 PM
SHEET: 1/9


REVISION HISTORY
ECO REV DESCRIPTION APPROVED DATE
-
U2
LTC3886
VIN_PWR
3886_INTVCC
N200
FDMD8260LET60
N100
FDMD8260LET60
IBV_8V/3
IBV_5V/5
3886_VDD33/3
3886_SYNC
3886_SCL/3
3886_SDA/3
3886_ALERTB/3
3886_SHARE_CLK
3886_FAULT0B/3
3886_FAULT1B/3
3886_RUN0
3886_RUN1
3886_PGOOD0/3
3886_PGOOD1/3
3886_WP
3886_VDD25
3886_VIN
3886_EXTVCC
3886_INTVCC
KELVIN GND RETURN TO PIN 53
CUSTOMER NOTICE
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APP ENG. N.ENGER
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SIZE B
IC NO. LTC4281, LTC3886, LTC2975, LTC3887
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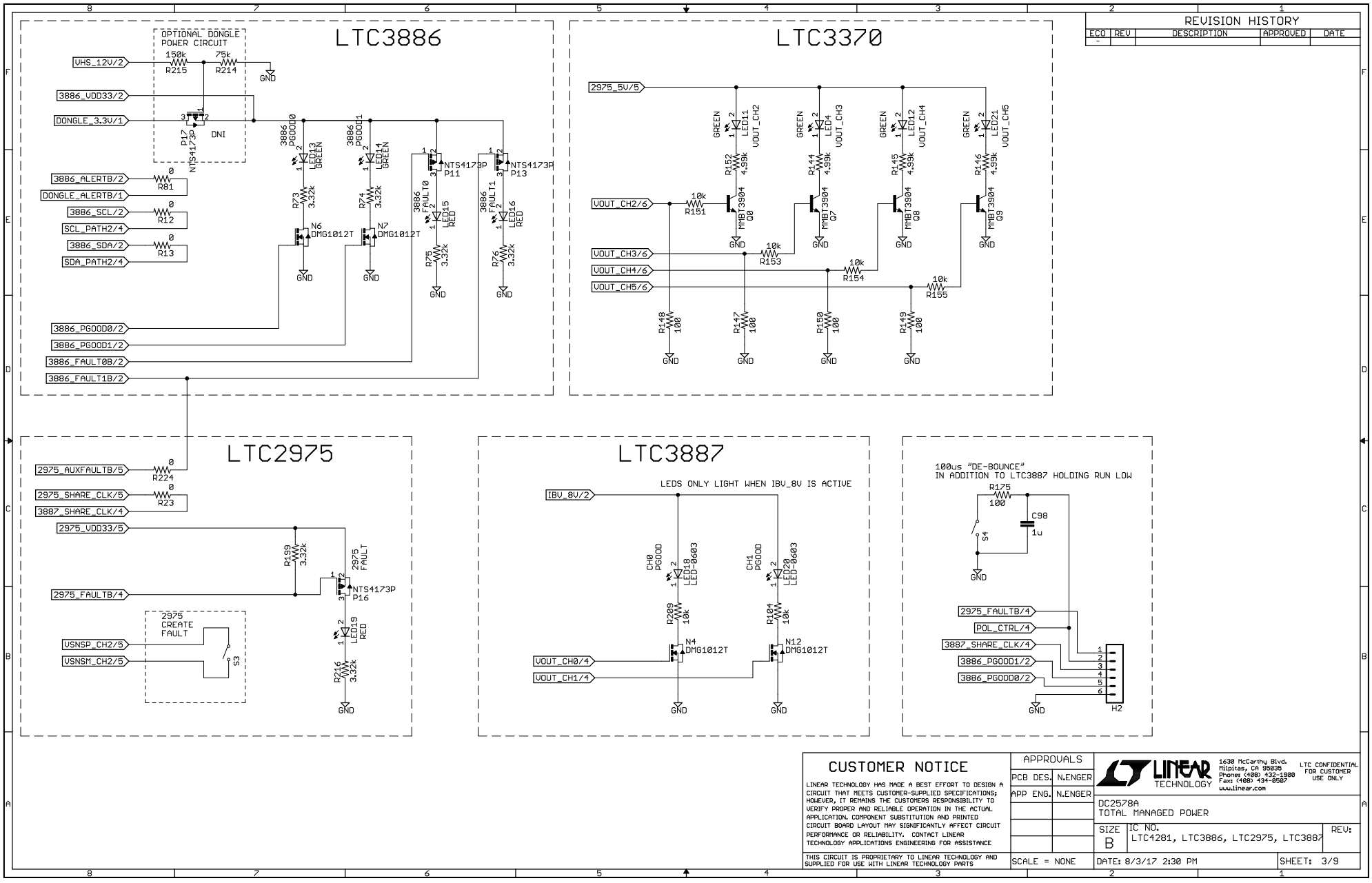
SHEET: 2/9


LTC3886
OPTIONAL DONGLE POWER CIRCUIT
VHS_12V/2
150k R215
75k R214
GND
3886_VDD33/2
DONGLE_3.3V/1
P17 NTS4173P
DNI
3886_ALERTB/2
DONGLE_ALERTB/1
3886_SCL/2
SCL_PATH2/4
3886_SDA/2
SDA_PATH2/4
R81 0
R12 0
R13 0
3886 PGOOD0
3886 PGOOD1
LED13 GREEN
LED14 GREEN
R73 3.32k
R74 3.32k
N6 DMG1012T
N7 DMG1012T
NTS4173P P11
NTS4173P P13
3886 FAULT0
3886 FAULT1
LED15 RED
LED16 RED
R75 3.32k
R76 3.32k
3886_PGOOD0/2
3886_PGOOD1/2
3886_FAULT0B/2
3886_FAULT1B/2
LTC3370
2975_5V/5
GREEN
LED11
LED4
LED12
LED21
VOUT_CH2
VOUT_CH3
VOUT_CH4
VOUT_CH5
R152 4.99k
R144 4.99k
R145 4.99k
R146 4.99k
VOUT_CH2/6
VOUT_CH3/6
VOUT_CH4/6
VOUT_CH5/6
10k R151
10k R153
10k R154
10k R155
MMBT3904 Q6
MMBT3904 Q7
MMBT3904 Q8
MMBT3904 Q9
R148 100
R147 100
R150 100
R149 100
LTC2975
2975_AUXFAULTB/5
2975_SHARE_CLK/5
3887_SHARE_CLK/4
2975_VDD33/5
2975_FAULTB/4
R224 0
R23 0
R199 3.32k
2975 FAULT
NTS4173P P16
2975 CREATE FAULT
VSNSP_CH2/5
VSNSM_CH2/5
S3
LED19 RED
R216 3.32k
LTC3887
LEDS ONLY LIGHT WHEN IBV_8V IS ACTIVE
IBV_8V/2
CH0 PGOOD
CH1 PGOOD
LED18 LED-0603
LED20 LED-0603
R209 10k
R104 10k
N4 DMG1012T
N12 DMG1012T
VOUT_CH0/4
VOUT_CH1/4
100us "DE-BOUNCE"
IN ADDITION TO LTC3887 HOLDING RUN LOW
R175 100
C98 1u
S4
2975_FAULTB/4
POL_CTRL/4
3887_SHARE_CLK/4
3886_PGOOD1/2
3886_PGOOD0/2
H2
REVISION HISTORY
ECO REV DESCRIPTION APPROVED DATE
-
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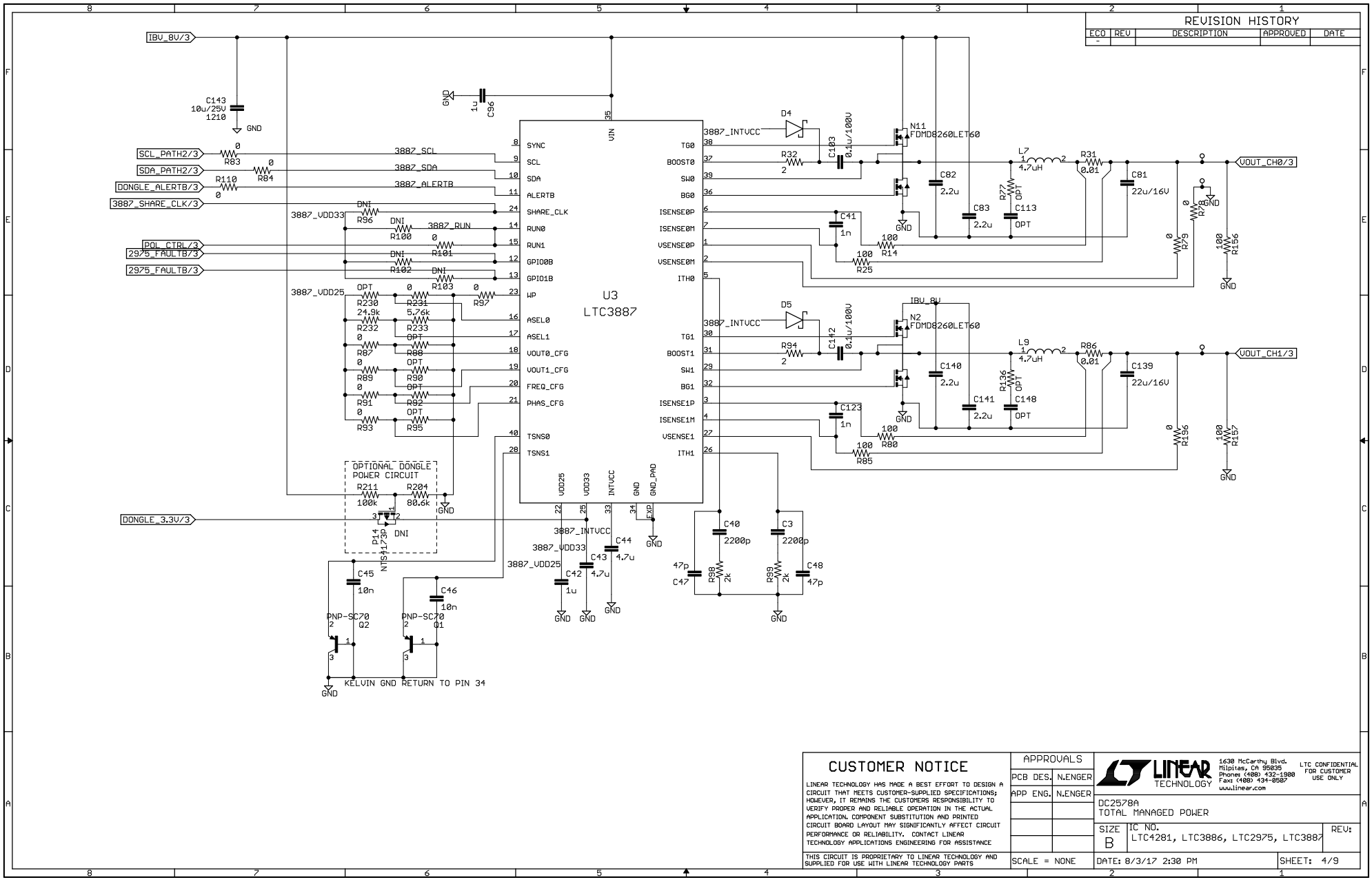
APPROVALS
PCB DES. N.ENGER
APP ENG. N.ENGER
SCALE = NONE
LINEAR TECHNOLOGY
1630 McCarthy Blvd. Milpitas, CA 95035 Phone: (408) 432-1900 Fax: (408) 434-0507 www.linear.com
LTC CONFIDENTIAL FOR CUSTOMER USE ONLY
DC2578A
TOTAL MANAGED POWER
SIZE B
IC NO. LTC4281, LTC3886, LTC2975, LTC3887
REV:
DATE: 8/3/17 2:30 PM
SHEET: 3/9


REVISION HISTORY
ECO | REV | DESCRIPTION | APPROVED | DATE
U3
LTC3887
IBV_8V/3
VOUT_CH0/3
VOUT_CH1/3
DONGLE_3.3V/3
SCL_PATH2/3
SDA_PATH2/3
DONGLE_ALERTB/3
3887_SHARE_CLK/3
PQL_CTRL/3
2975_FAULTB/3
2975_FAULTB/3
3887_SCL
3887_SDA
3887_ALERTB
3887_RUN
3887_INTVCC
3887_VDD33
3887_VDD25
N11
FDMD8260LET60
N2
FDMD8260LET60
D4
D5
OPTIONAL DONGLE POWER CIRCUIT
DNI
KELVIN GND RETURN TO PIN 34
PNP-SC70
Q2
Q1
CUSTOMER NOTICE
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APP ENG. N.ENGER
SCALE = NONE
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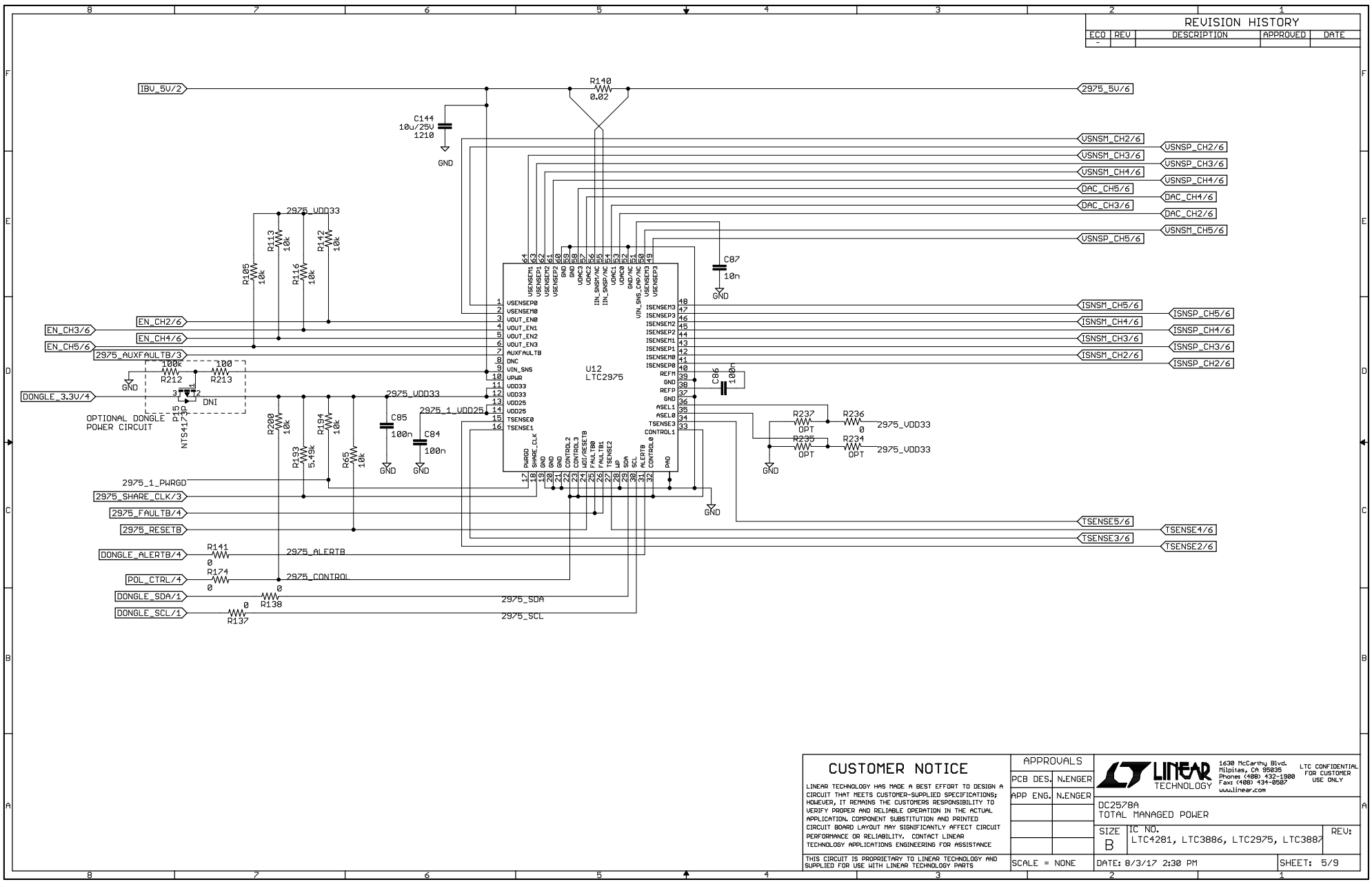
DC2578A
TOTAL MANAGED POWER
SIZE B
IC NO. LTC4281, LTC3886, LTC2975, LTC3887
REV:
DATE: 8/3/17 2:30 PM
SHEET: 4/9


REVISION HISTORY
ECO REV DESCRIPTION APPROVED DATE
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APP ENG. N.ENGER
SCALE = NONE
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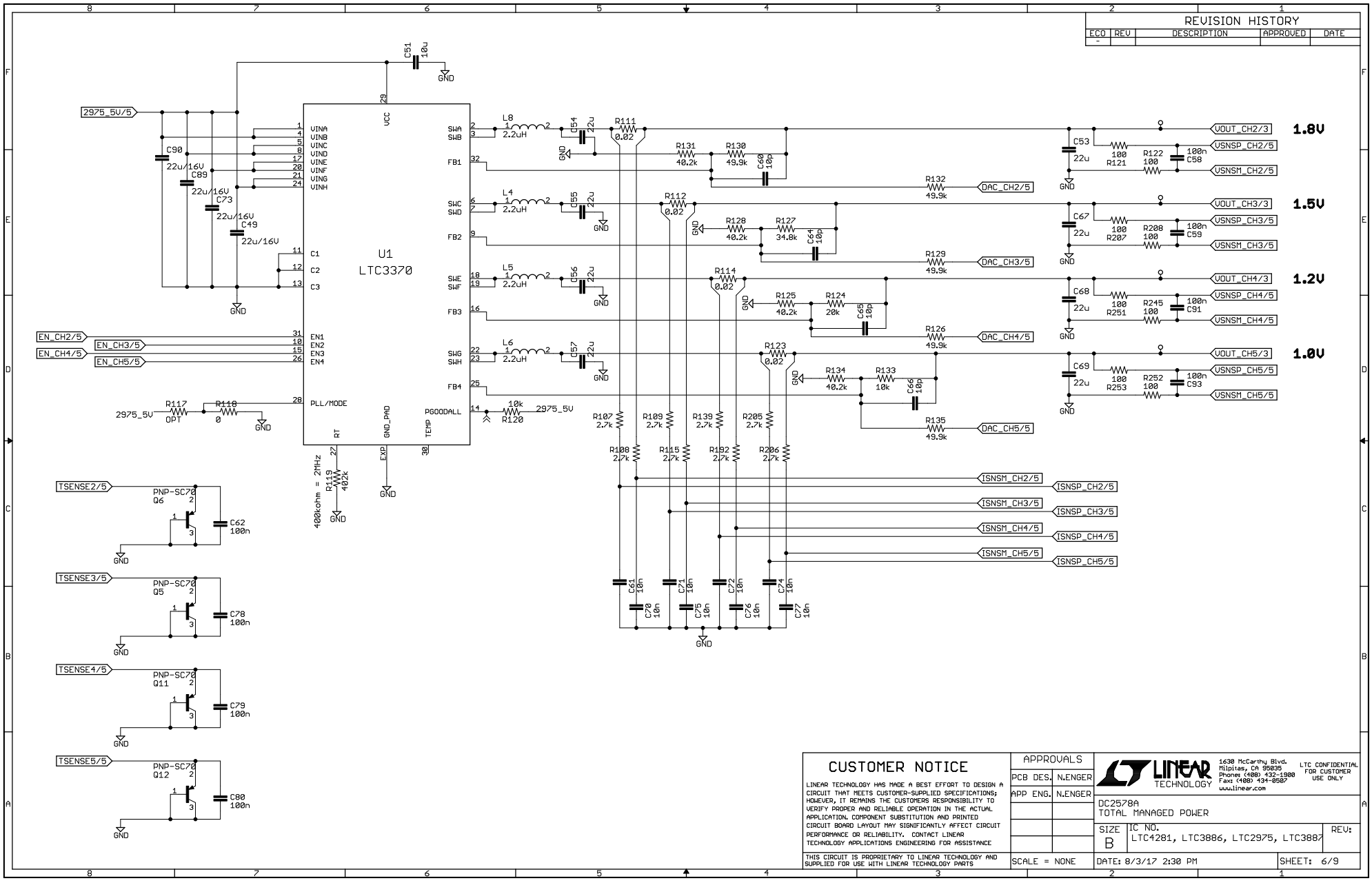
DC2578A
TOTAL MANAGED POWER
SIZE B
IC NO. LTC4281, LTC3886, LTC2975, LTC3887
REV:
DATE: 8/3/17 2:30 PM
SHEET: 5/9
U12 LTC2975
IBV_5V/2
2975_5V/6
R140 0.02
C144 10u/25V 1210
GND
2975_VDD33
R105 10k
R113 10k
R116 10k
R142 10k
C87 10n
C86 100n
EN_CH2/6
EN_CH3/6
EN_CH4/6
EN_CH5/6
2975_AUXFAULTB/3
R212 100k
R213 100
DONGLE_3.3V/4
DNI
P15 NTS4173P
OPTIONAL DONGLE POWER CIRCUIT
R200 10k
R194 10k
R193 5.49k
R65 10k
C85 100n
C84 100n
2975_1_VDD25
R237 OPT
R236 0
R235 OPT
R234 OPT
2975_1_PWRGD
2975_SHARE_CLK/3
2975_FAULTB/4
2975_RESETB
DONGLE_ALERTB/4
R141 0
2975_ALERTB
POL_CTRL/4
R174 0
2975_CONTROL
DONGLE_SDA/1
R138 0
2975_SDA
DONGLE_SCL/1
R137 0
2975_SCL
VSNSM_CH2/6
VSNSP_CH2/6
VSNSM_CH3/6
VSNSP_CH3/6
VSNSM_CH4/6
VSNSP_CH4/6
DAC_CH5/6
DAC_CH4/6
DAC_CH3/6
DAC_CH2/6
VSNSM_CH5/6
VSNSP_CH5/6
ISNSM_CH5/6
ISNSP_CH5/6
ISNSM_CH4/6
ISNSP_CH4/6
ISNSM_CH3/6
ISNSP_CH3/6
ISNSM_CH2/6
ISNSP_CH2/6
TSENSE5/6
TSENSE4/6
TSENSE3/6
TSENSE2/6


REVISION HISTORY
ECO | REV | DESCRIPTION | APPROVED | DATE
U1
LTC3370
VINA
VINB
VINC
VIND
VINE
VINF
VING
VINH
VCC
SWA
SWB
SWC
SWD
SWE
SWF
SWG
SWH
FB1
FB2
FB3
FB4
EN1
EN2
EN3
EN4
PLL/MODE
RT
GND_PAD
EXP
PGOODALL
TEMP
2975_5V/5
2975_5V
EN_CH2/5
EN_CH3/5
EN_CH4/5
EN_CH5/5
L8 2.2uH
L4 2.2uH
L5 2.2uH
L6 2.2uH
C51 10u
C90 22u/16V
C89 22u/16V
C73 22u/16V
C49 22u/16V
C54 22u
C55 22u
C56 22u
C57 22u
R111 0.02
R112 0.02
R114 0.02
R123 0.02
R131 40.2k
R130 49.9k
C60 10p
R128 40.2k
R127 34.8k
C64 10p
R125 40.2k
R124 20k
C65 10p
R134 40.2k
R133 10k
C66 10p
R132 49.9k
R129 49.9k
R126 49.9k
R135 49.9k
DAC_CH2/5
DAC_CH3/5
DAC_CH4/5
DAC_CH5/5
R117 OPT
R118 0
R120 10k
R119 402k
400kohm = 2MHz
R107 2.7k
R109 2.7k
R139 2.7k
R205 2.7k
R108 2.7k
R115 2.7k
R192 2.7k
R206 2.7k
ISNSM_CH2/5
ISNSP_CH2/5
ISNSM_CH3/5
ISNSP_CH3/5
ISNSM_CH4/5
ISNSP_CH4/5
ISNSM_CH5/5
ISNSP_CH5/5
C61 10n
C71 10n
C72 10n
C74 10n
C70 10n
C75 10n
C76 10n
C77 10n
C53 22u
C67 22u
C68 22u
C69 22u
R121 100
R122 100
R207 100
R208 100
R251 100
R245 100
R253 100
R252 100
C58 100n
C59 100n
C91 100n
C93 100n
VOUT_CH2/3
VSNSP_CH2/5
VSNSM_CH2/5
VOUT_CH3/3
VSNSP_CH3/5
VSNSM_CH3/5
VOUT_CH4/3
VSNSP_CH4/5
VSNSM_CH4/5
VOUT_CH5/3
VSNSP_CH5/5
VSNSM_CH5/5
1.8V
1.5V
1.2V
1.0V
TSENSE2/5
TSENSE3/5
TSENSE4/5
TSENSE5/5
PNP-SC70
Q6
Q5
Q11
Q12
C62 100n
C78 100n
C79 100n
C80 100n
GND
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APPROVALS
PCB DES. N.ENGER
APP ENG. N.ENGER
SCALE = NONE
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TOTAL MANAGED POWER
SIZE B
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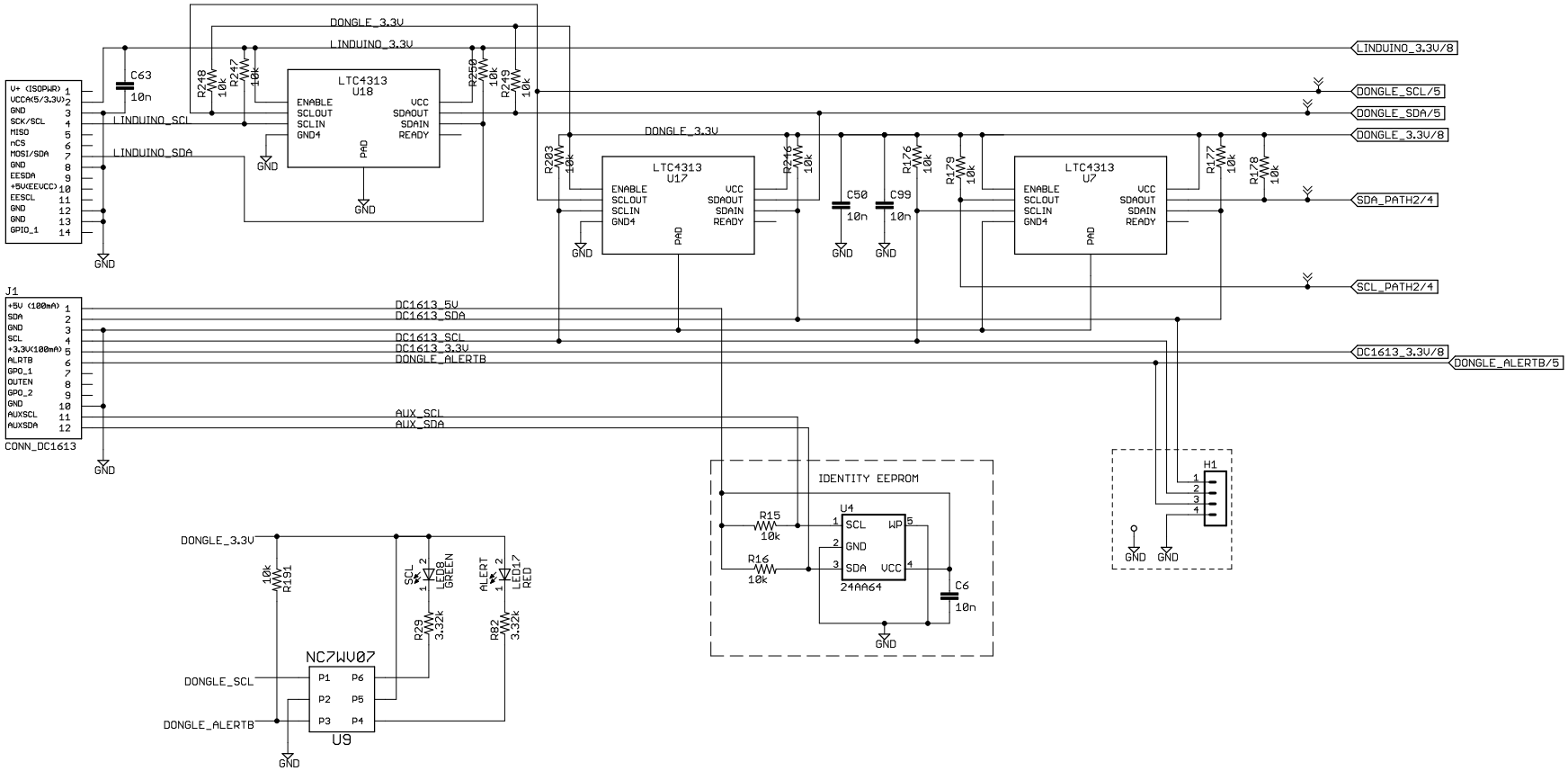
REV:
DATE: 8/3/17 2:30 PM
SHEET: 6/9

REVISION HISTORY				
ECO	REV	DESCRIPTION	APPROVED	DATE
-				

I2C Bus MUXes



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APPROVALS	
PCB DES.	N.ENGER
APP ENG.	N.ENGER

SCALE = NONE

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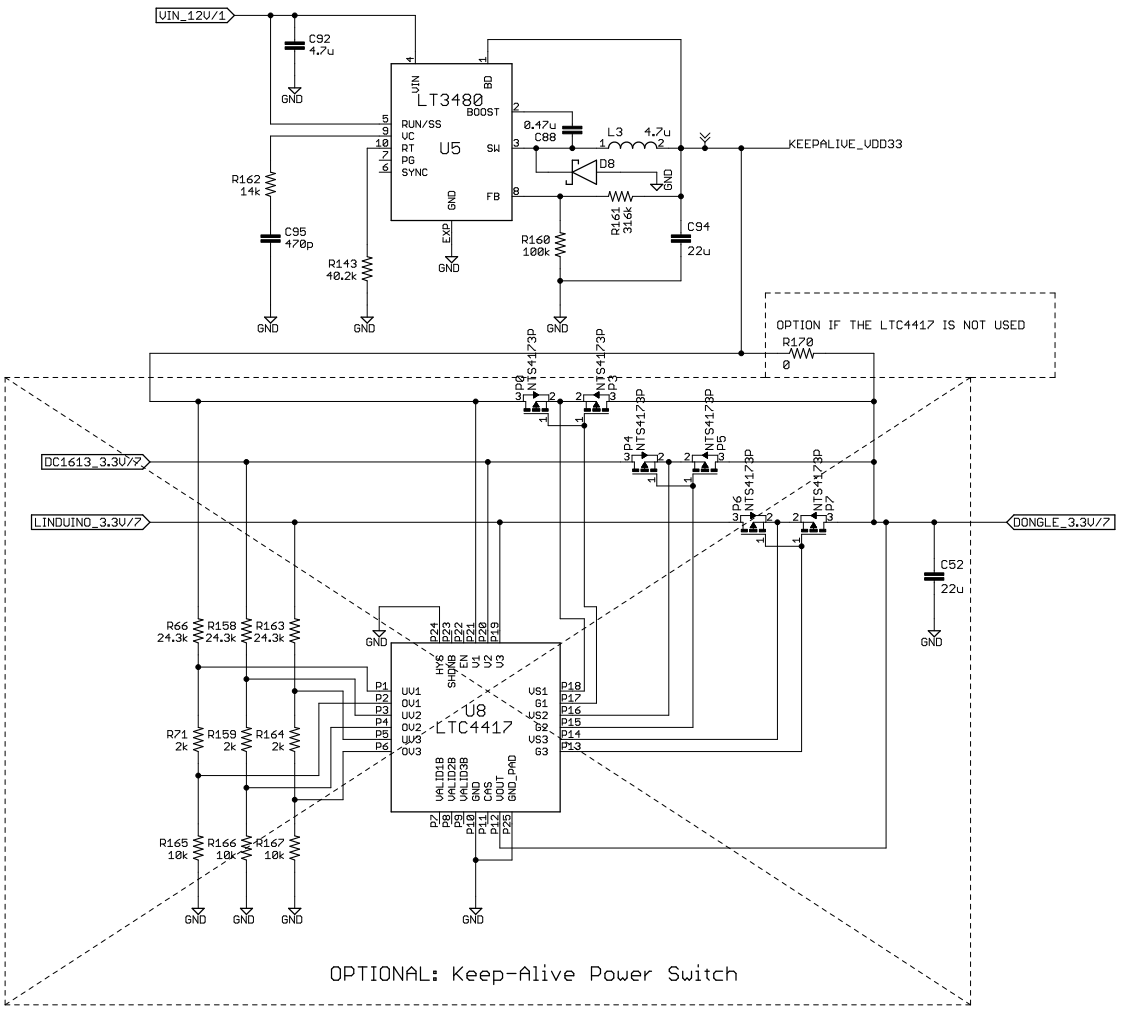
DC2578A
TOTAL MANAGED POWER

SIZE B | IC NO. LTC4281, LTC3886, LTC2975, LTC3887 | REV:

DATE: 8/3/17 2:30 PM | SHEET: 7/9

Keep-Alive Power Stage +3.3V



REVISION HISTORY

ECO	REV	DESCRIPTION	APPROVED	DATE
-				

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APPROVALS	
PCB DES.	N.ENGER
APP ENG.	N.ENGER

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USE ONLY

DC2578A
TOTAL MANAGED POWER

SIZE	IC NO.	REV:
B	LTC4281, LTC3886, LTC2975, LTC3887	

SCALE = NONE

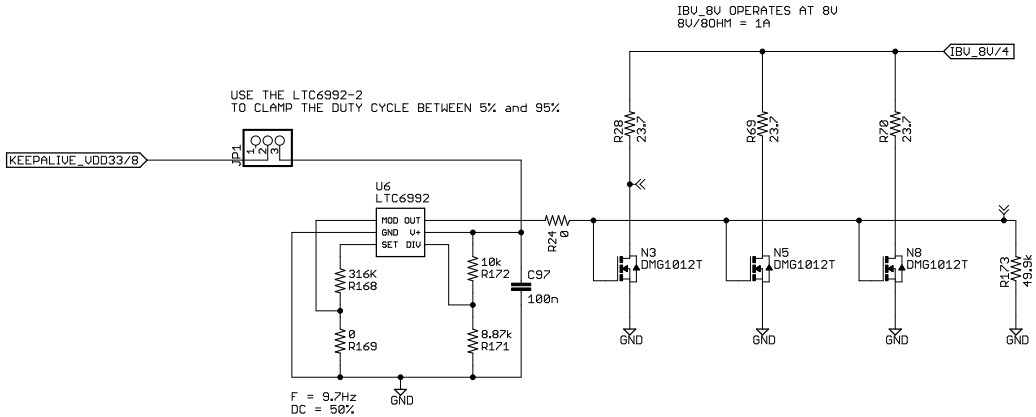
DATE: 8/3/17 2:30 PM

SHEET: 8/9

LTC3886 LOAD STEP GENERATOR

REVISION HISTORY

ECO	REV	DESCRIPTION	APPROVED	DATE
-				



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APPROVALS	
PCB DES.	N.ENGER
APP ENG.	N.ENGER

SCALE = NONE

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DC2578A
TOTAL MANAGED POWER

SIZE B | IC NO. LTC4281, LTC3886, LTC2975, LTC3887 | REV:

DATE: 8/3/17 2:30 PM | SHEET: 9/9