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V_DC_LINK
11V... 36V Typ: 33,6V

DSH 2R + 2u2F serie
EVM 1x56uF Elko

aus EVM

C53 4u7 50V
C54 4u7 50V
C55 10u 50V
C56 10u 50V
C57 10u 50V
C58 1u 50V
C59 100nF 50V
C60 100p 50V

R119 0R005
V_SYS
aus Design Calculator

C61 27586 100u 35V
C62 27586 100u 35V
C63 27586 100u 35V

R120 10R
R121 10R
C71 470n 10V
C72 100nF 50V
C73 100nF 50V

NT_VAC1
Net Tie

Q2 IAUCN04S7L028ATMA1
Q3 IAUCN04S7L028ATMA1
Q4 IAUCN04S7L028ATMA1
Q5 IAUCN04S7L028ATMA1

max. 10A

L4 10000001873 3u3 18.2A

P_OUT
aus Design Calculator
aus EVM

C68 100u 16V
C69 100u 16V
C70 100u 16V
C64 4u7 50V
C65 4u7 50V
C66 10u 50V
C67 10u 50V
C74 10u 50V
C75 1u 50V
C76 100nF 50V
C77 100p 50V

DSH 47nF
C78 100nF 50V
C79 100nF 50V
DRV_SUP
D11 100V SSW2H100H
D12 100V SSW2H100H

C80 1u 50V
C81 100nF 50V
R122 1M
R123 42k2
C84 100nF 50V
R126 46k4
C85 100nF 50V

74k
37k

U15 BQ25756E

ACN
ACP
VAC
ACUV
ACOV
DRV_SUP
REGN
Bat_SCL
Bat_SDA
INT
STAT1
STAT2
PG
Bat_Chrg_EN
HIDRV1
BTST1
SW1
LODRV1
LODRV2
SW2
BTST2
HIDRV2
SRP
SRN
FB
FBG
TS
ILIM_HIZ
ICHG
FSW_SYNC
PGND
EP

C87 100nF 50V
C88 1u 50V

C83 100nF 50V
C82 100u 10V 23056
EVM: 56uF
R124 10R
R125 0R005
C86 470n 10V
R127 10R
C89 100nF 50V

4.8V ... 5.2V
REGN
DRV_SUP
SB_DRV_SUP-REGN1
C90 4u7 50V
C91 4u7 50V

P_REGN = (VAC – V_REGN) × Q_G(TOT)1,2,3,4 × f_SW
0,864W = (27V - 4V5) x (16nC x 4) x 600 kHz
The Safe Operating Area (SOA) below is based on a 1-W power loss limit.

Charger Internal Linear Regulator Output – Connect a 4.7-µF ceramic capacitor from REGN to power ground. REGN LDO voltage can be used as the gate driver supply for all switching FETs by connecting REGN to DRV_SUP pin. In high-voltage applications, it is possible to directly provide the DRV_SUP voltage with an external supply up to 12 V to achieve higher switching efficiency. See Section 8.3.3.2 for more details.

R128 150k 155k
R129 255k 249k
V_BATREG = 3V99
V_BAT
C92 100u 10V
C93 1u 50V
C94 100nF 50V
C95 100p 50V
EVM: 2x56uF
BAT_1
Batteriekontakt KEYSTONE 254 oder 254TR

f_SW = 585 kHz
R130 40k2
R131 41k2
R132 2k
I_LimOUTput = 1,21 A
I_Limitput = 10 A

REGN
R133 4K22
EVM 5,23
R135 4K22
EVM 30k1
SB_TS1
R136 10k
R134 10k
R134 TempSensor an Akku thermisch angebunden 103AT-2 10k
X17 Stiftl. 2x1

EVM: EvalBoard
DSH: Datasheet

MB Connection

V_DC_LINK
V_DC_SYS --> 3V3_MB PAD auf MB
3V3_MB

R137 10R
C96 4u7 50V
C97 2u2 100V
11[2D] EN_BOOST
BAT_SDA
BAT_SCL 5[2A], 8[4C], 10[3C]
X19

Pull-Up's

R138 10k
R139 10k
R140 10k
R141 10k
R142 10k
R143 10k
R144 10k
Bat_SCL
Bat_SDA
INT
STAT1
STAT2
PG
Bat_Chrg_EN

V_BAT
X18 Stiftl. 4x1

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.	...	...	...	...	...
.	...	...	...	...	PRJ.: 213.40
.	...	...	...	...	Sub-Title: .
.	...	...	...	...	Mat-No.: 213_40_Toggler_MB
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A	-	...	...	...	Doc-No.: . Rev. A
Rev.	Change No.	Date	Created	Approved	CAD-File: 213_40_Toggler_Battery-ChrgCtrl.SchDoc Sheet: 10 of: 12

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