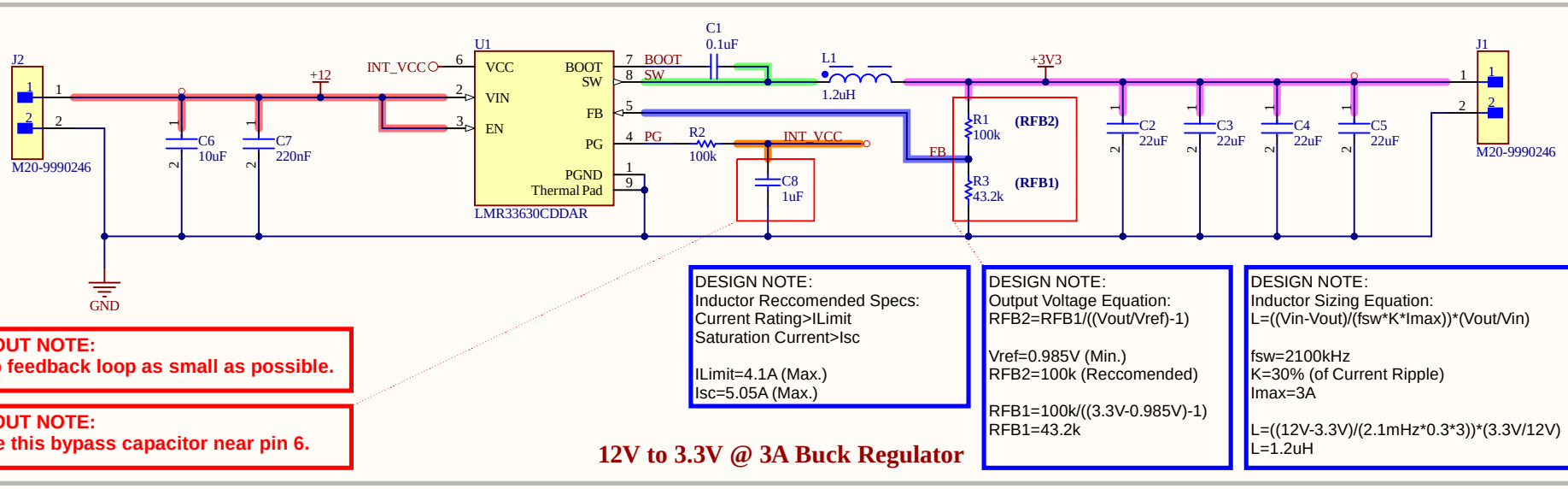


12V to 3.3V @ 3A Buck Regulator

Power Rail

+3V3 — TP1

Internal VCC

INT_VCC — TP2

Switching Voltage

SW — TP3

Feedback Voltage

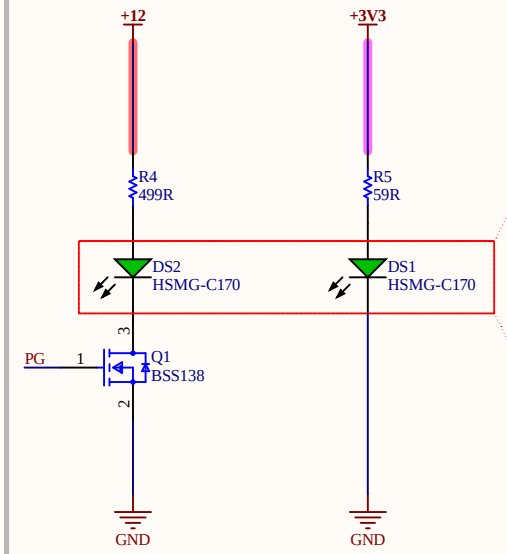
FB — TP4

Ground

GND — TP5

GND — TP6

Test Points



PGOOD Indicator **VOUT Indicator**

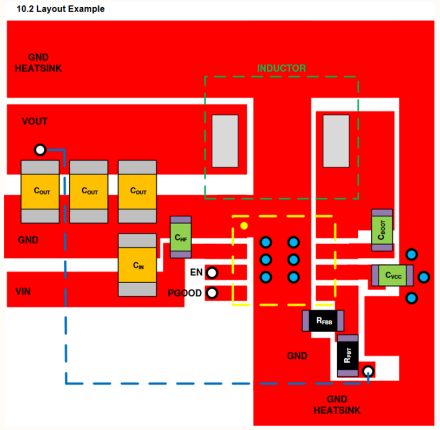
DESIGN NOTE:
HSMG-C170 LEDs have a luminous intensity around 15mcd (Typ.) at forward current.

DESIGN NOTE:
HSMG-C170 current limiting resistor calculations:

Vf=2.2V (Typ.)
If=20mA

[PGOOD_LED]
R=(12V-2.2V)/20mA
R=490R

[VOUT_LED]
R=(3.3V-2.2V)/20mA
R=55R



Additional Notes

Title: **WORK IN PROGRESS**		
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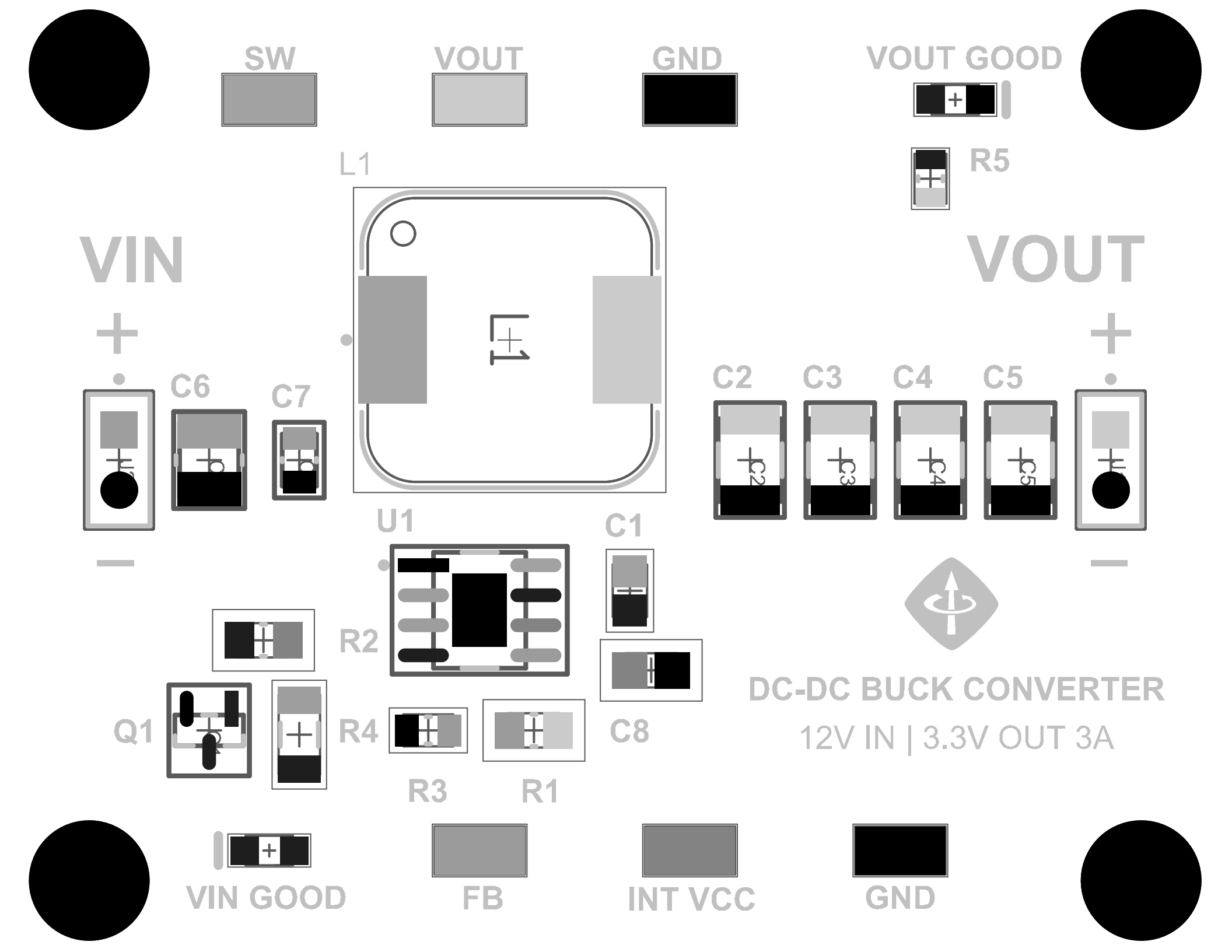
Date: 3/03/2024		Sheet of
File: C:\Users\..\IEEE_Buck_Converter_F23.SchDoc		Drawn By: Mari Takizala


SW
VOUT
GND
VOUT GOOD
L1
R5
VIN
VOUT
C6
C7
C2
C3
C4
C5
U1
C1
R2
Q1
R4
C8
R3
R1
DC-DC BUCK CONVERTER
12V IN | 3.3V OUT 3A
VIN GOOD
FB
INT VCC
GND

Comment	Description	Designator	Footprint	LibRef	Quantity
0.1uF	08055C104KAZ2A	C1	CAPC2013X94X50NL20T25	CMP-2007-04372-1	1
22uF	CAP CER 22UF 25V X5R 1210 TMK325BJ226MM-T	C2, C3, C4, C5	FP-MK325M-MFG	CMP-14477-000145-1	4
10uF	Cap Ceramic 10uF 50V X7R ±10% SMD 1210 +125°C Embossed T/R CL32B106KBJNNNE	C6	FP-CL32-IPC_C	CMP-2000-06110-2	1
220nF	CAP CER 0.22UF 50V X7R 0805 CC0805KKX7R9BB224	C7	FP-CC0805-0_85-MFG	CMP-03422-000996-1	1
1uF	CC0805ZRY5V8BB105	C8	CAPC2013X145X50ML20T25	CMP-1036-04757-2	1
HSMG-C170	Chip LED, Green, 2.2 V, -40 to 85 degC, 2-Pin SMD, Pb-Free, Tape and Reel	DS1, DS2	AVAG-HSMX-C170_V	CMP-2000-05062-1	2
M20-9990246	CONN HEADER VERT 2POS 2.54MM	J1, J2	FP-M20-9990246-MFG	CMP-15831-000009-1	2
1.2uH		L1	WE-PD_1280	CMP-0227-00164-2	1
BSS138	MOSFET N-CH 50V 220MA SOT-23	Q1	FP-318-08-IPC_B	CMP-07173-000101-1	1
100k		R1, R2	RESC2013X50X30ML20T20	CMP-2001-04900-1	2
43.2k		R3	RESC2013X60X35NL10T20	CMP-2001-01147-1	1
499R	499R 0.25W 1% 1206 (3216 Metric) SMD	R4	RESC1206(3216)_N	CMP-1014-00476-1	1
59R		R5	RESC2013X60X35LL10T20	CMP-1013-00371-2	1
5019	Test Point, 1 Position SMD, RoHS, Tape and Reel 5019	TP1, TP2, TP3, TP4, TP5, TP6	KSTN-5019_V	CMP-1672-00008-1	6
LMR33630CDDAR	IC REG BUCK ADJUSTABLE 3A 8SOPWR	U1	FP-DDA0008J-IPC_B	CMP-04918-000348-1	1