

Cyntec Power Module Solutions for FPGA

Total module solution for Xilinx XCVU13P FPGA

Cyntec Co., Ltd.



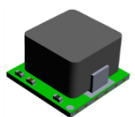
Cyntec DC-DC Module Solutions

MSN12AD60-RUD

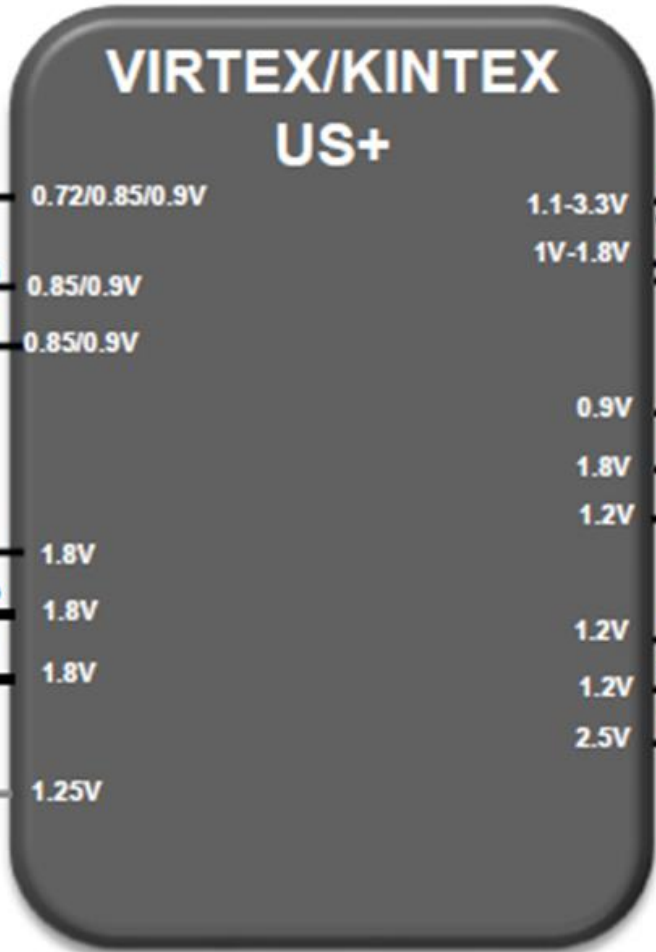


16x16mm
each 60A module

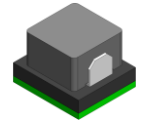
MUN12AD05-SMFL



6x6mm

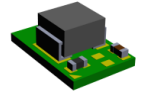


MSN12AD12-MP



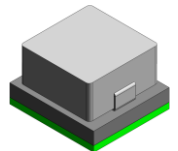
8.6x7.5mm

MUN12AD01-SG



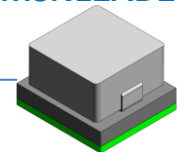
3.9x2.6mm

MSN12AD20-MQ



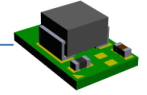
10x9mm

MSN12AD20-MQ



10x9mm

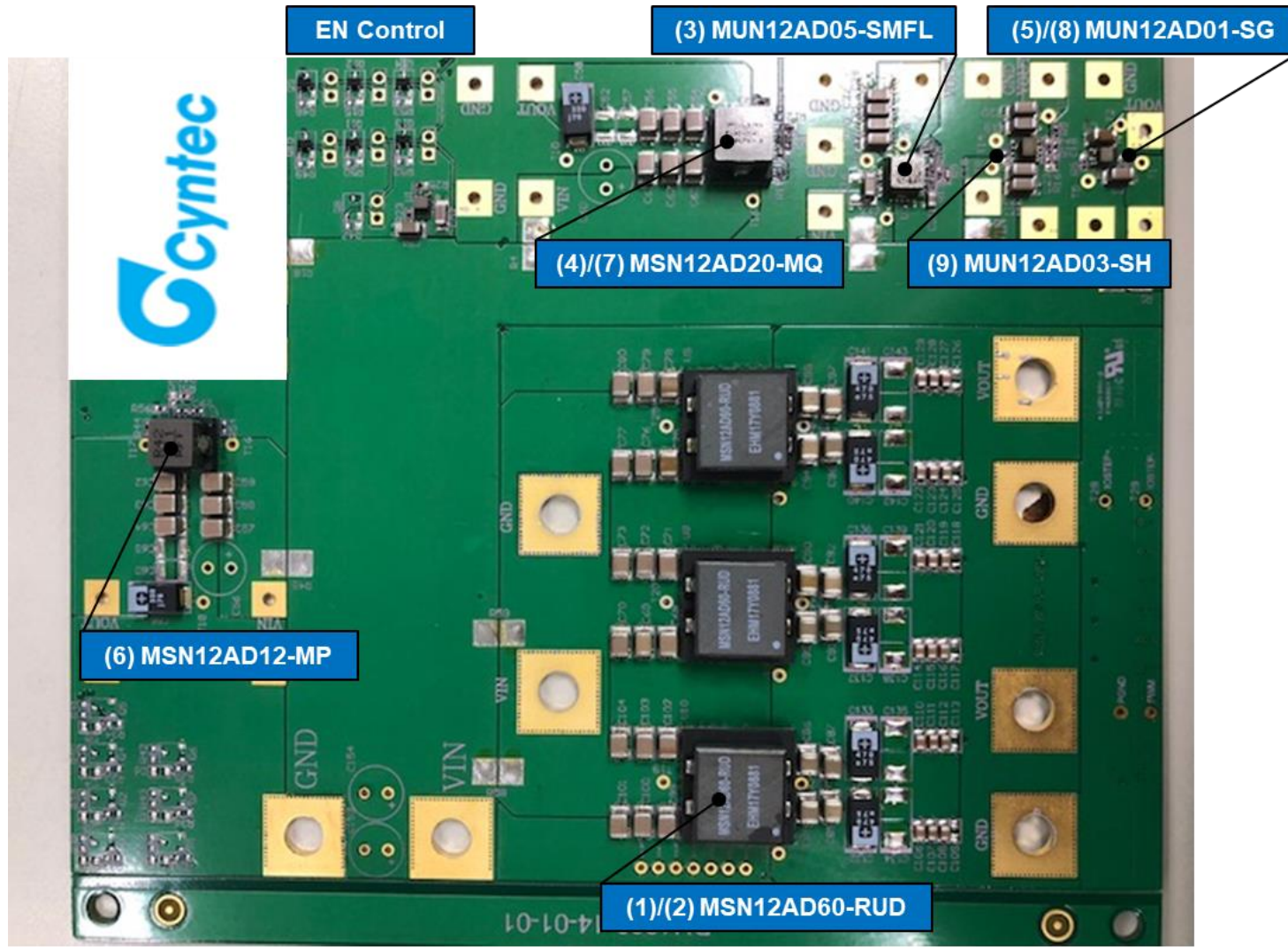
MUN12AD01-SG



3.9x2.6mm

12V Vin

All-in-One Evaluation Board



































160mm

Cyntec DC-DC Module Solutions

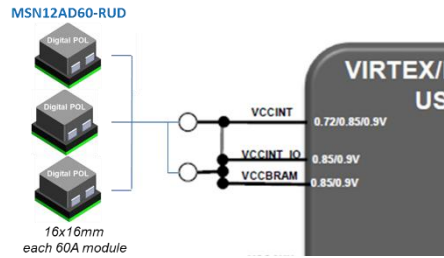
	Rail	Load	Cyntec Proposal	Efficiency	Features
1	VCCINT 0.72/0.85/0.9V	10-120A	MSN12AD60-RUD 3x modules in parallel	89% @120A	<ul style="list-style-type: none"> • Module size 16x16mm • PMBus, current sharing
2	VCCBRAM/INT_IO 0.85/0.9V	0.5-25A	Combined with VCCINT		
3	VCCAUX/ADC 1.8V	0.5-4A	MUN12AD05-SMFL	86~90%	<ul style="list-style-type: none"> • Module size 6x6mm • Forced-PWM, low ripple
4	VMGTAVTT 1.2V	2-17A	MSN12AD20-MQ	88~92%	<ul style="list-style-type: none"> • Module size 10x9mm • Forced-PWM, low ripple
5	VMGTVCCAUX 1.8V	0.1-0.5A	MUN12AD01-SG	Peak 83%	<ul style="list-style-type: none"> • Module size 3.9x2.6mm • Small footprint
6	VMGTAVCC 0.9V	2-9A	MSN12AD12-MP	Peak 89%	<ul style="list-style-type: none"> • Module size 8.6x7.5mm • Forced-PWM, low ripple
7	VCC_HBM/IO 1.2V	10-18A	MSN12AD20-MQ	88~92%	<ul style="list-style-type: none"> • Module size 10x9mm • Forced-PWM, low ripple
8	VCCAUX_HBM 2.5V	0.4A	MUN12AD01-SG	Peak 85%	<ul style="list-style-type: none"> • Module size 3.9x2.6mm • Small footprint
9	VCC_IO 1.8/2.5/3.3V	~3A	MUN12AD03-SH	Peak 89%	<ul style="list-style-type: none"> • Module size 3.5x3.5mm • Small footprint

Cyntec DC-DC Module Solutions

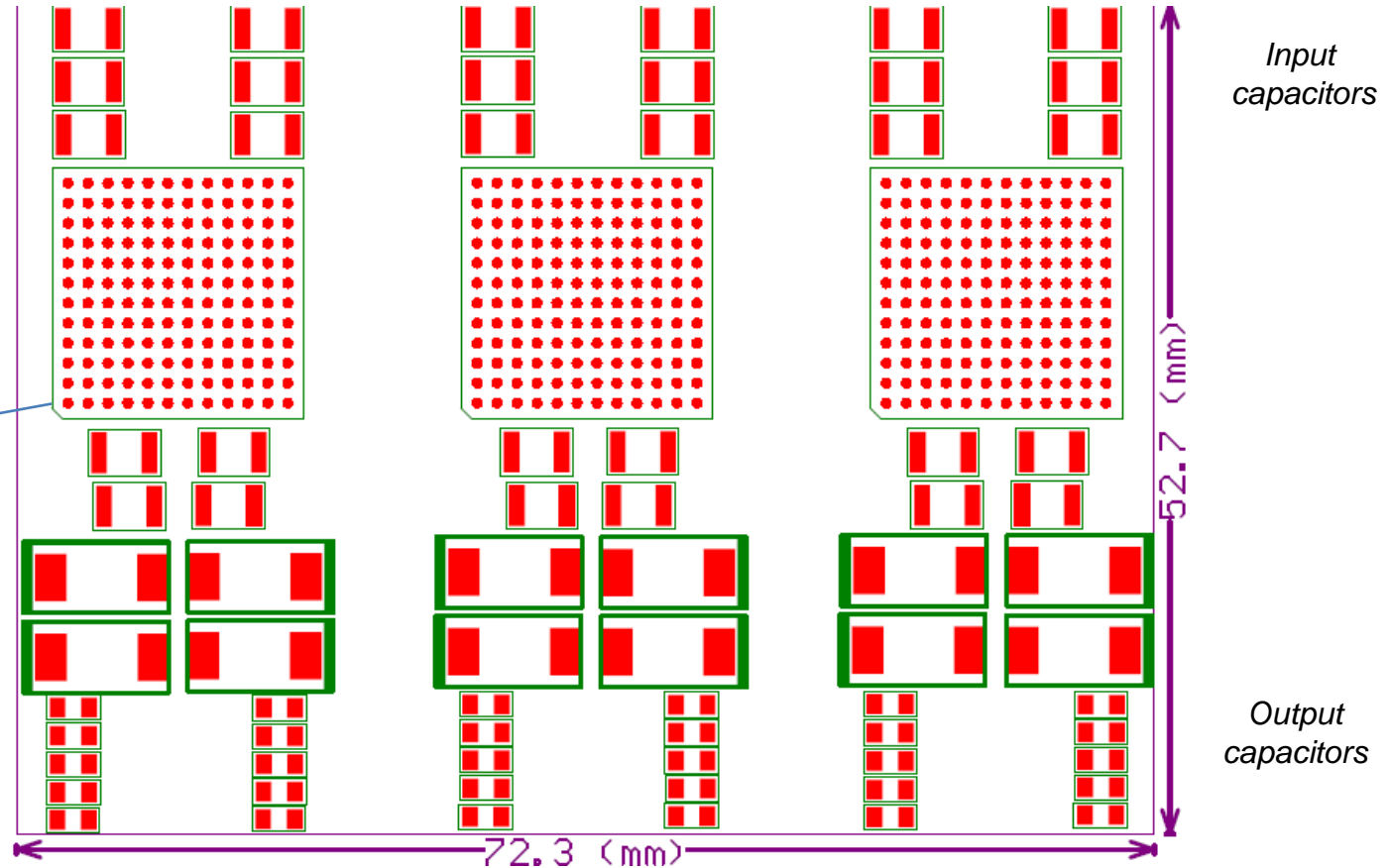
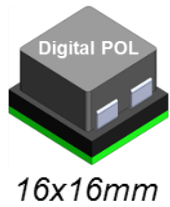
	Rail	Cyntec Proposal	Datasheet	EVB guide	Gerber file	Test report
1	VCCINT 0.72/0.85/0.9V	MSN12AD60-RUD 3x modules in parallel				
2	VCCBRAM/INT_IO 0.85/0.9V	Combined with VCCINT				
3	VCCAUX/ADC 1.8V	MUN12AD05-SMFL				
4	VMGTAVTT 1.2V	MSN12AD20-MQ				
5	VMGTVCCAUX 1.8V	MUN12AD01-SG				
6	VMGTAVCC 0.9V	MSN12AD12-MP				
7	VCC_HBM/IO 1.2V	MSN12AD20-MQ				
8	VCCAUX_HBM 2.5V	MUN12AD01-SG				
9	VCC_IO 1.8/2.5/3.3V	MUN12AD03-SH				

Layout Example of the 60A module

(Layout is for reference only --- single-sided SMT. Further optimization is possible in terms of output characteristics and actual application environment)



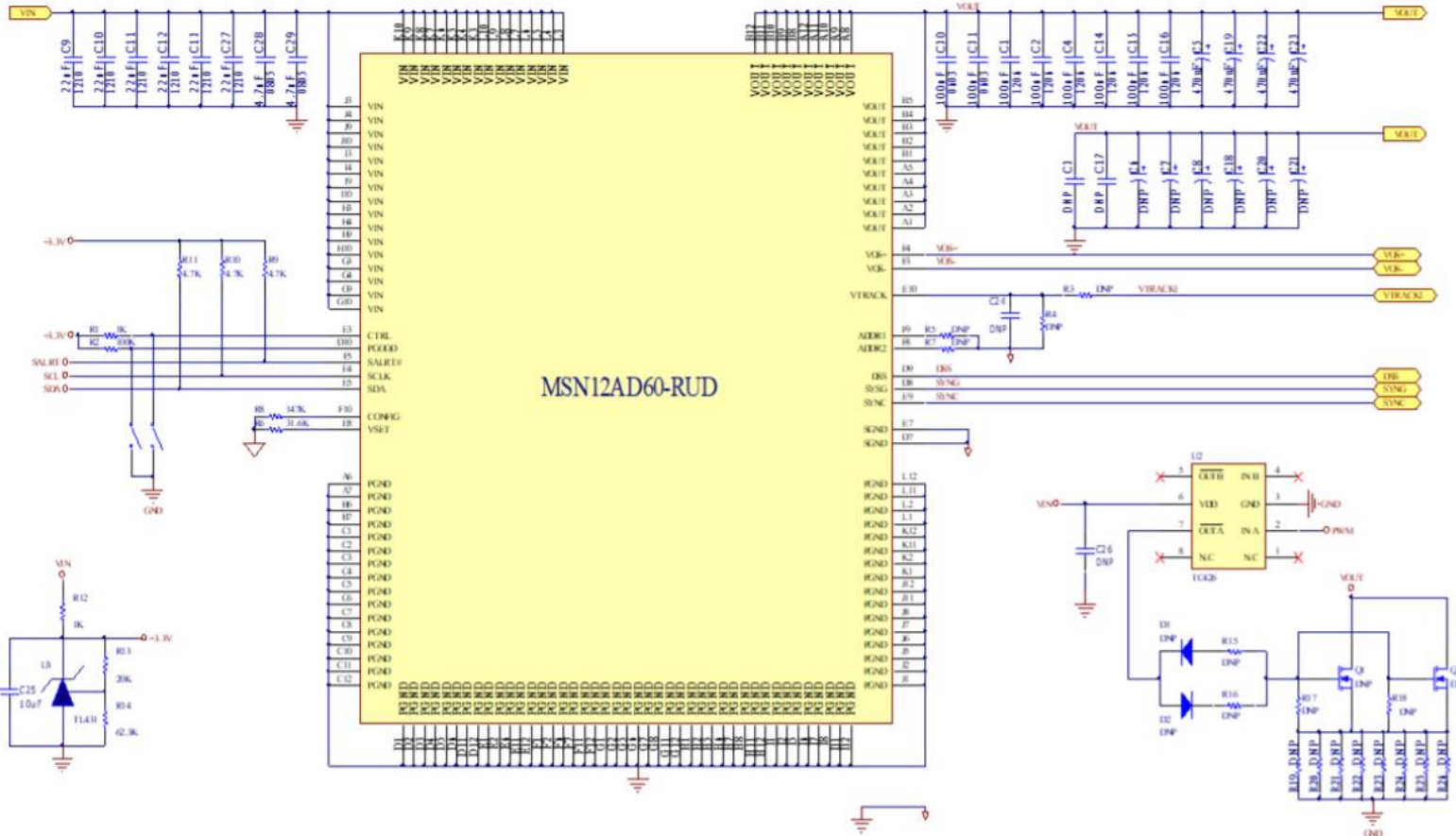
MSN12AD60-RUD



Remarks

- Input capacitance: 22uF x18pcs
- Output capacitance: 480uF x12pcs + 100uF x12pcs + 4.7uF x20pcs
- Arrangement could be optimized based on output transient requirements

Evaluation Board Schematic of the 60A module

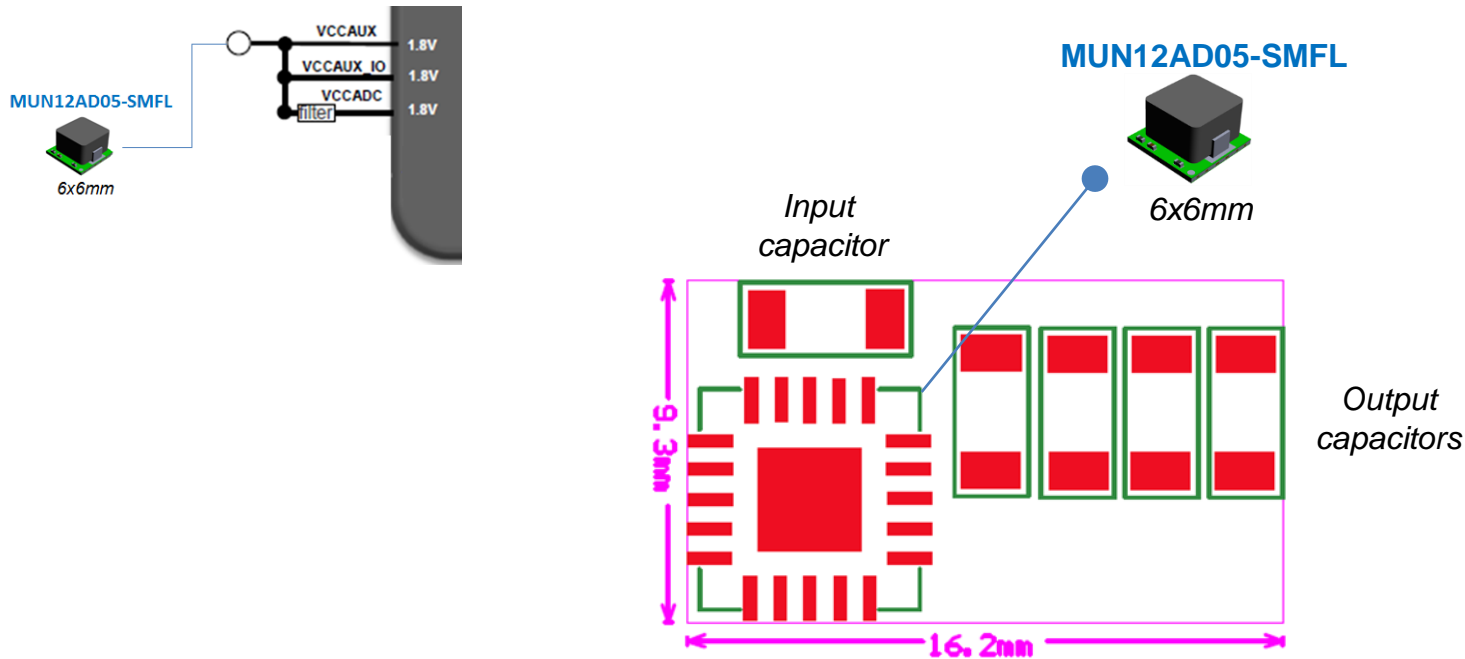


EVB guide



Layout Example of the 5A module

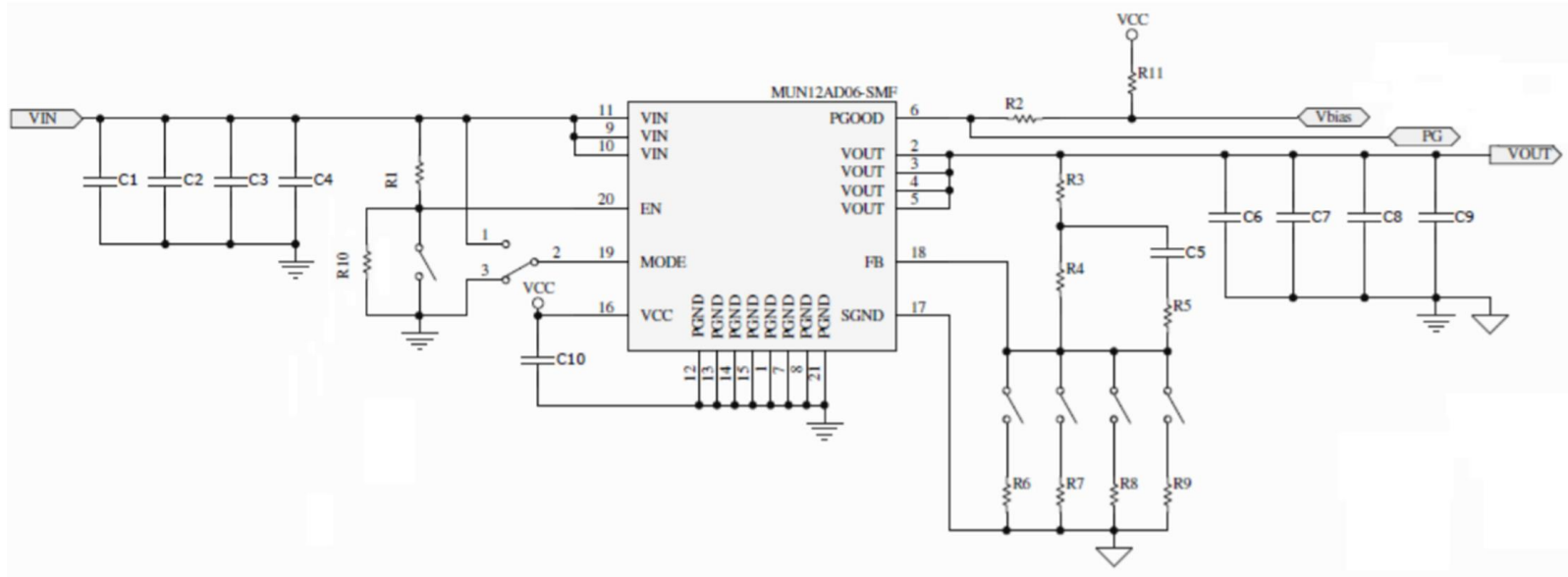
(Layout is for reference only --- single-sided SMT. Further optimization is possible in terms of output characteristics and actual application environment)



Remarks

- Input capacitance: 10uF
- Output capacitance: 47uF x4pcs
- Arrangement could be optimized based on output transient requirements

Evaluation Board Schematic of the 5A module

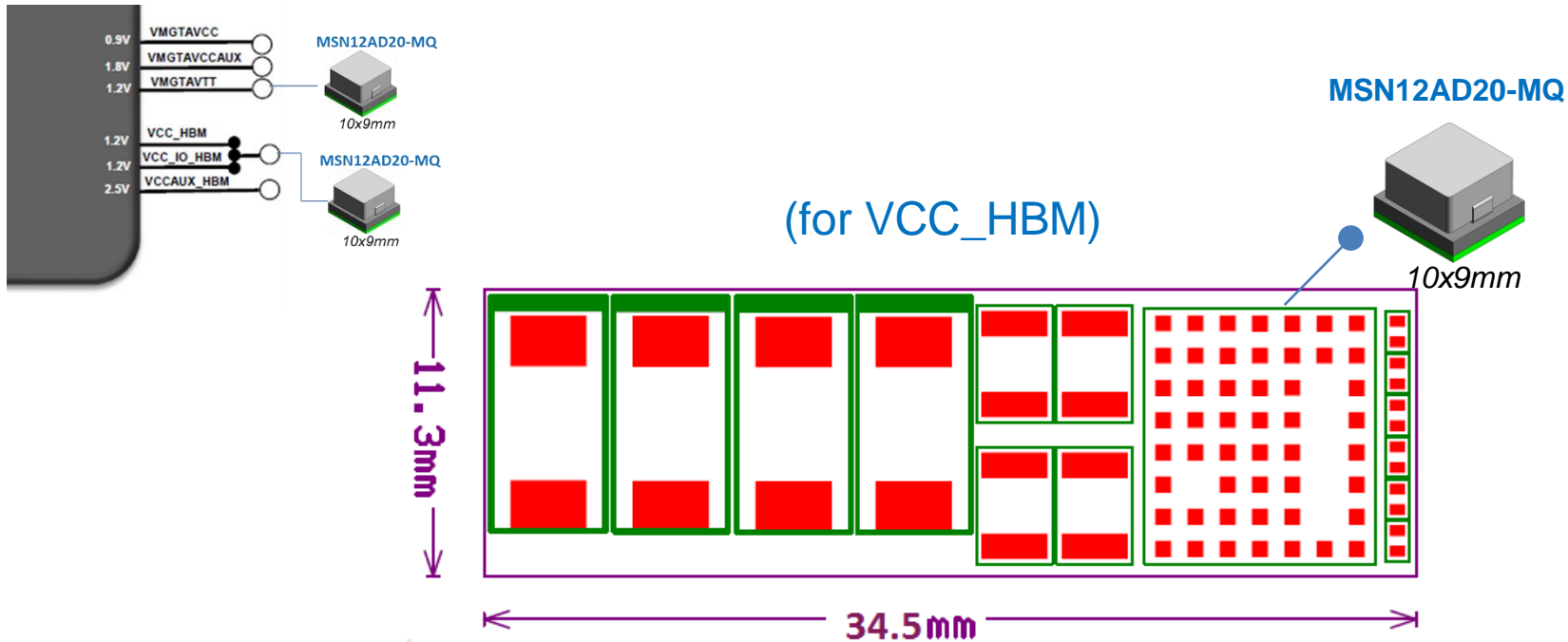


EVB guide



Layout Example of the 18A module

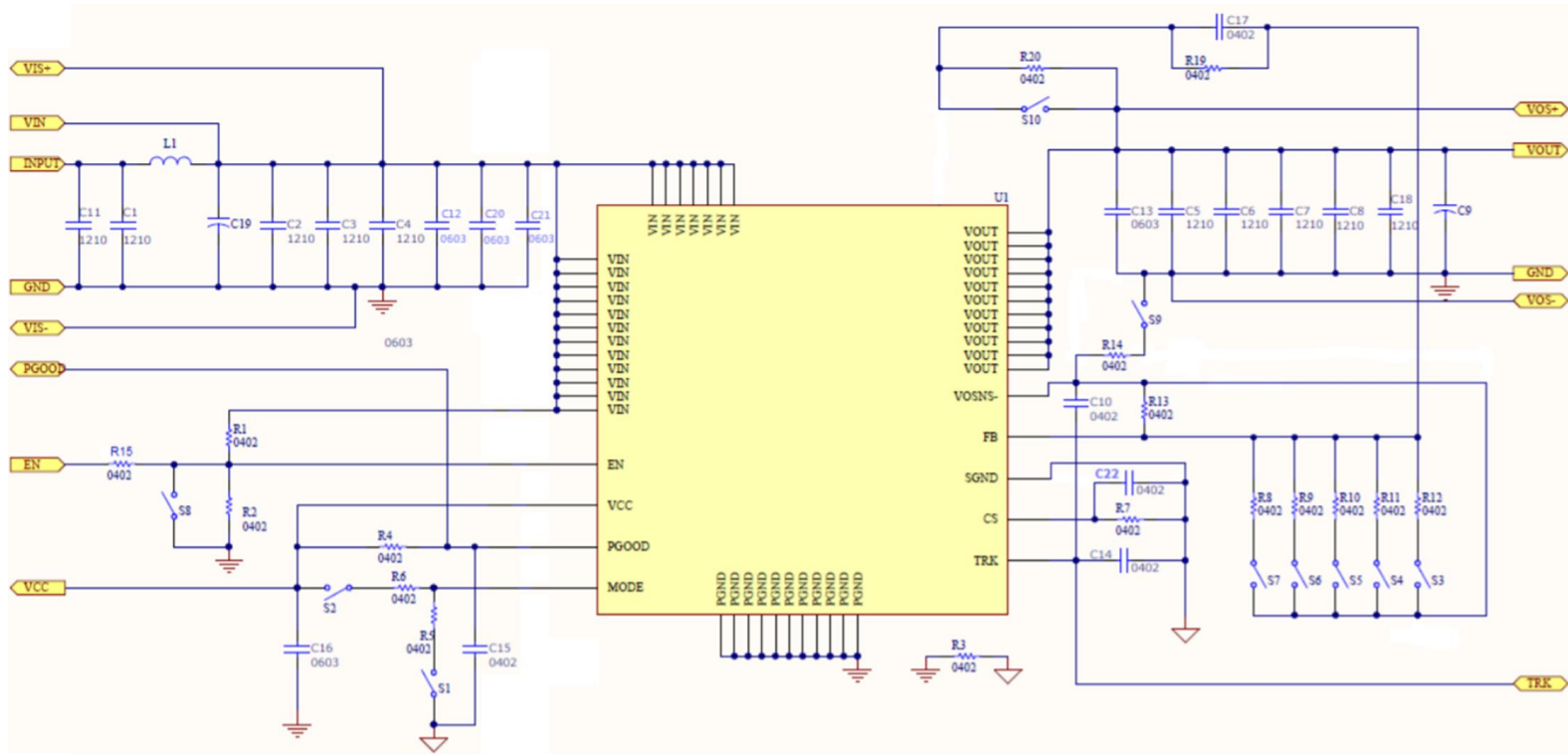
(Layout is for reference only --- single-sided SMT. Further optimization is possible in terms of output characteristics and actual application environment)



Remarks

- Input capacitance: 22uF x 2pcs
- Output capacitance: MLCC 47uF * 2pcs + SPCAP 470uF / 2.5V / ESR = 3mΩ * 4pcs
- Arrangement could be optimized based on output transient requirements

Evaluation Board Schematic of the 18A module

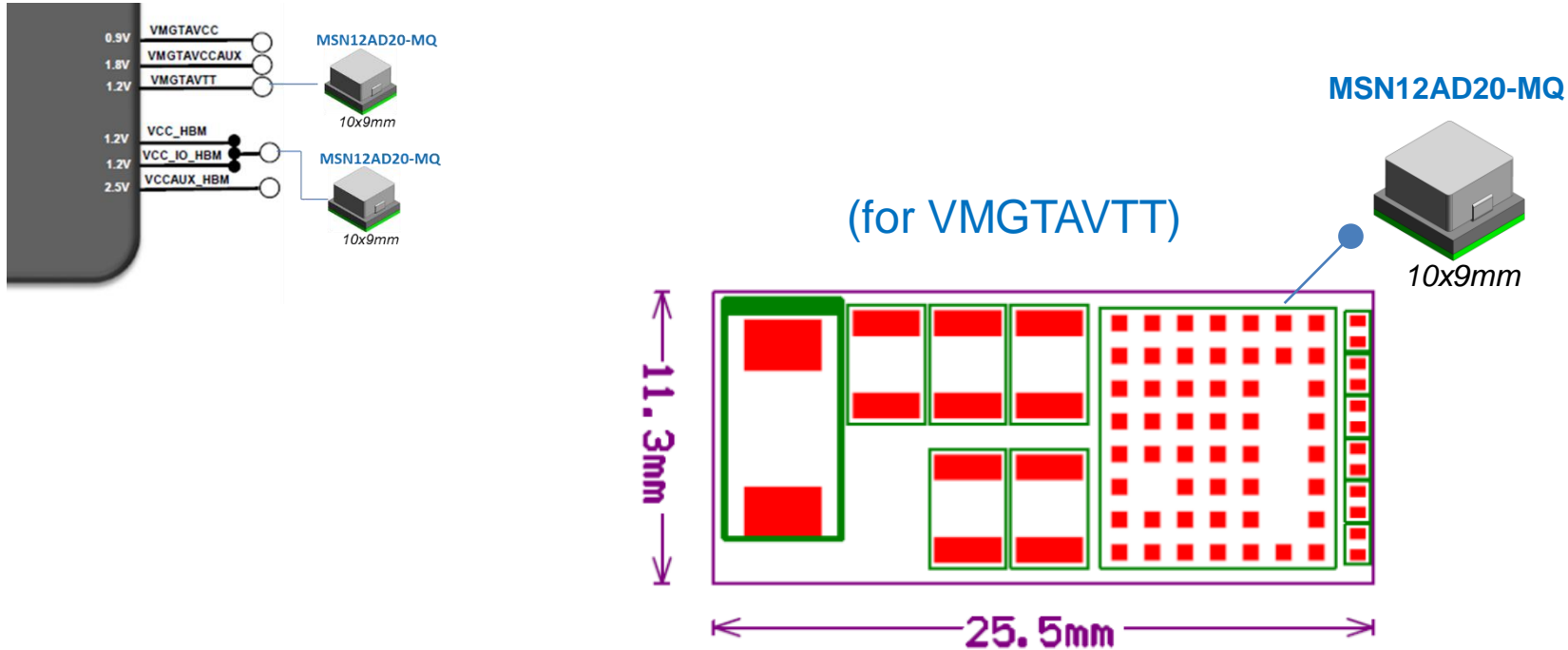


EVB guide



Layout Example of the 18A module

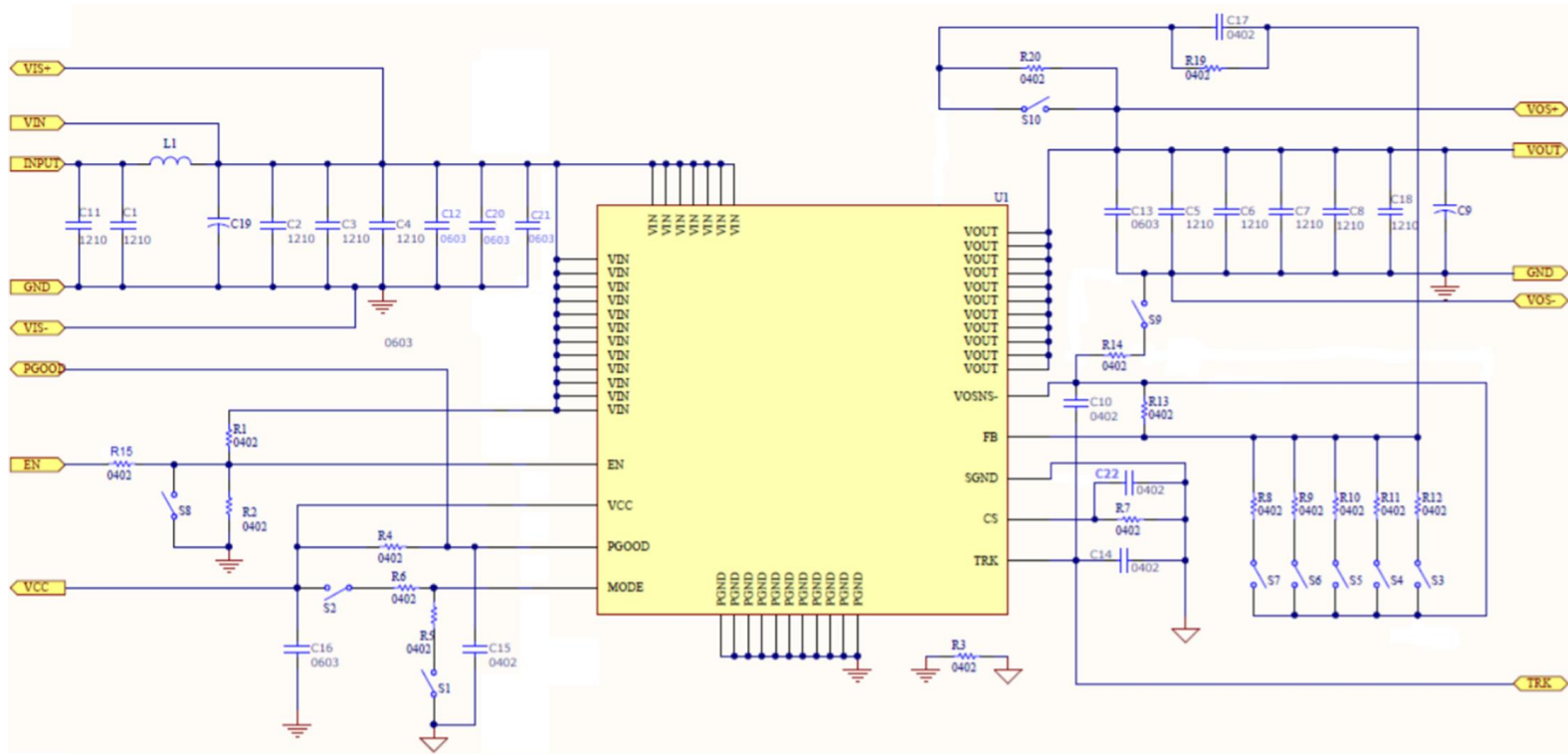
(Layout is for reference only --- single-sided SMT. Further optimization is possible in terms of output characteristics and actual application environment)



Remarks

- Input capacitance: 22uF x 2pcs
- Output capacitance: MLCC 47uF * 3pcs + SPCAP 470uF / 2.5V / ESR = 3mΩ
- Arrangement could be optimized based on output transient requirements

Evaluation Board Schematic of the 18A module

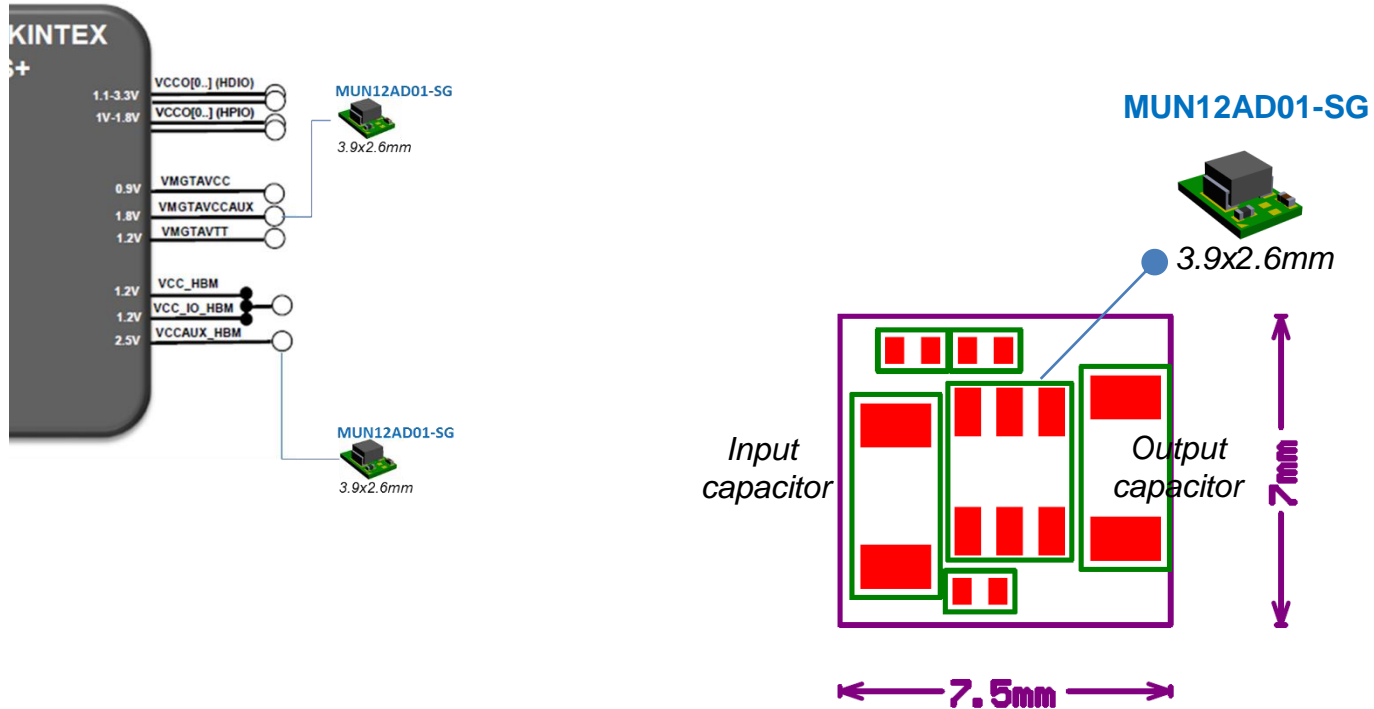


EVB guide



Layout Example of the 1A module

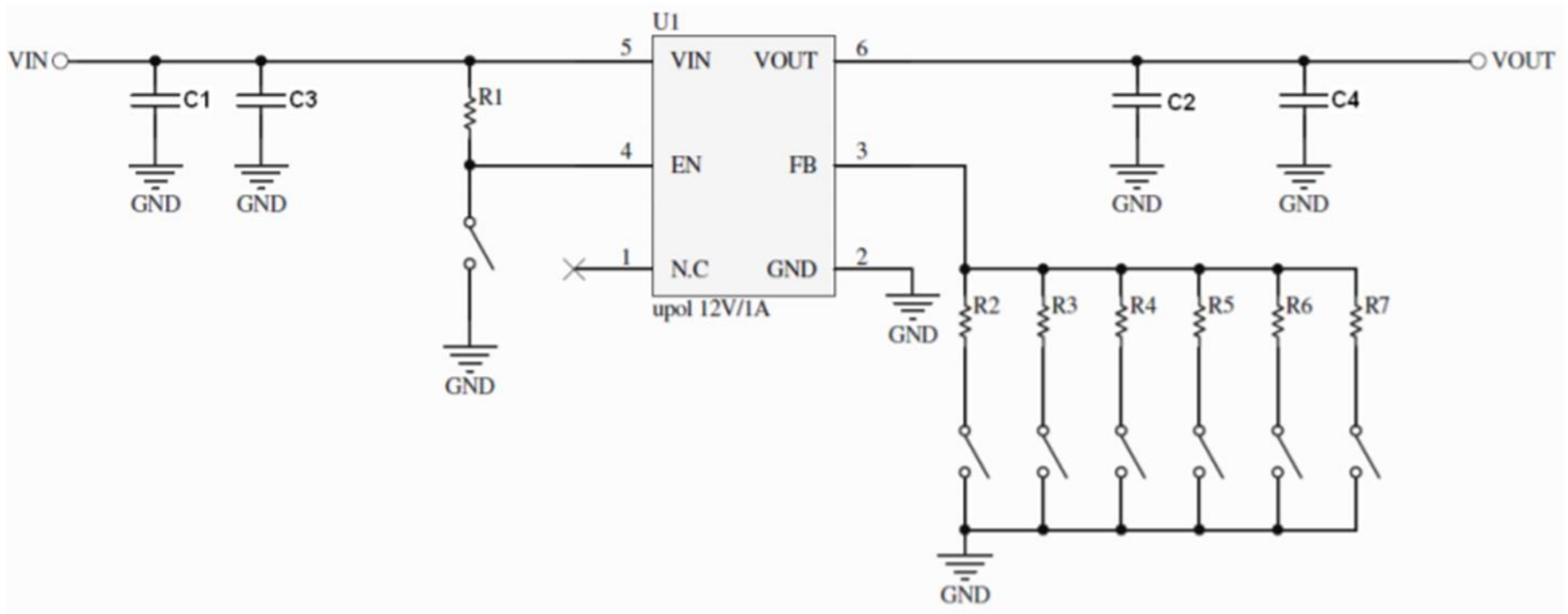
(Layout is for reference only --- single-sided SMT. Further optimization is possible in terms of output characteristics and actual application environment)



Remarks

- Input capacitance: 10uF
- Output capacitance: 47uF
- Arrangement could be optimized based on output transient requirements

Evaluation Board Schematic of the 1A module

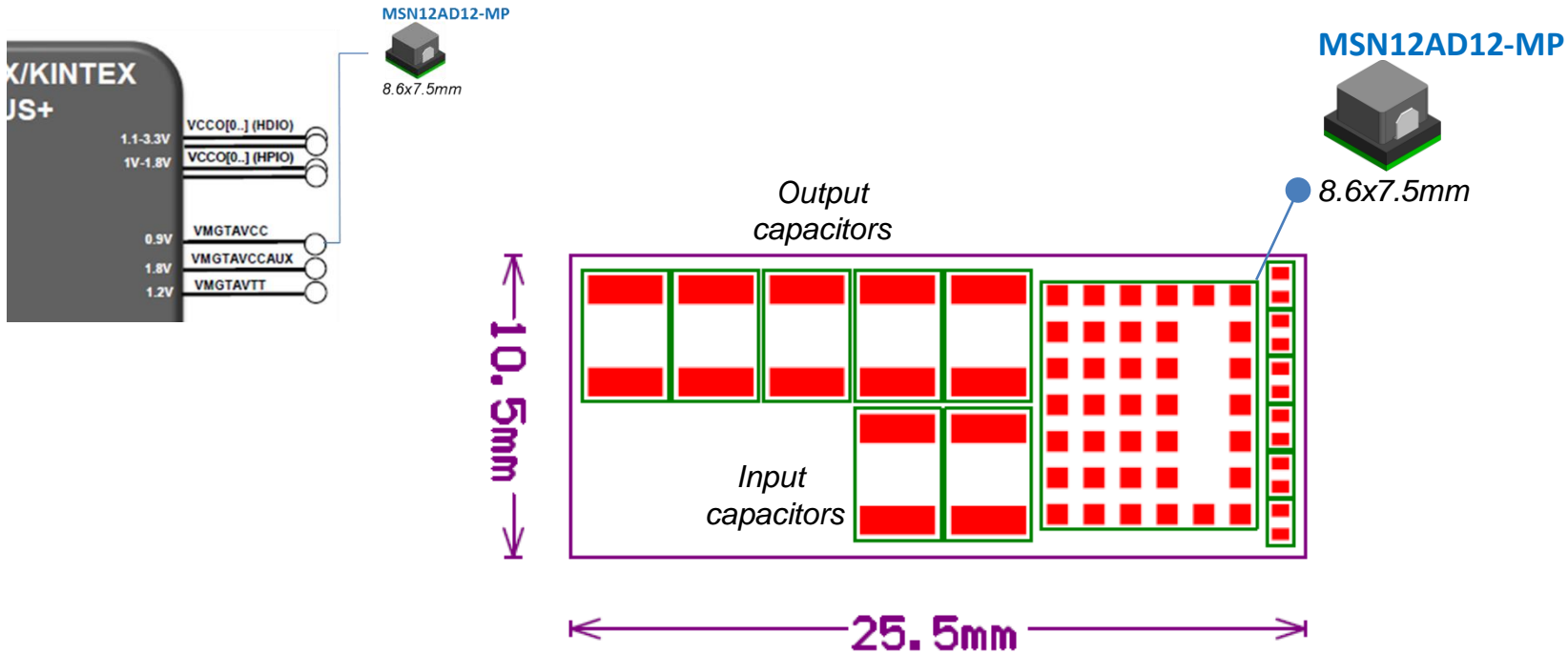


EVB guide



Layout Example of the 12A module

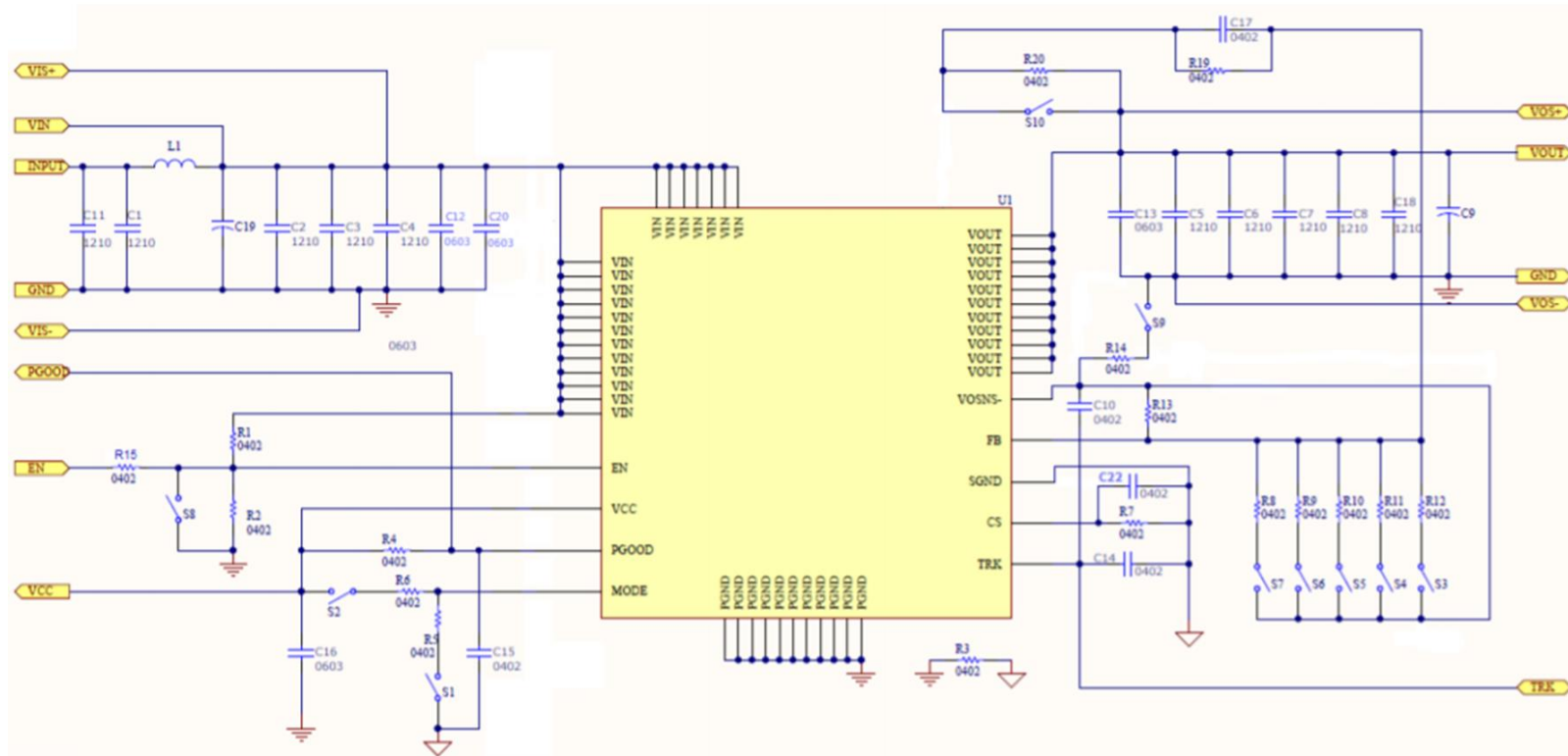
(Layout is for reference only --- single-sided SMT. Further optimization is possible in terms of output characteristics and actual application environment)



Remarks

- Input capacitance: 22uF x 2pcs
- Output capacitance: MLCC 47uF * 5pcs
- Arrangement could be optimized based on output transient requirements

Evaluation Board Schematic of the 12A module

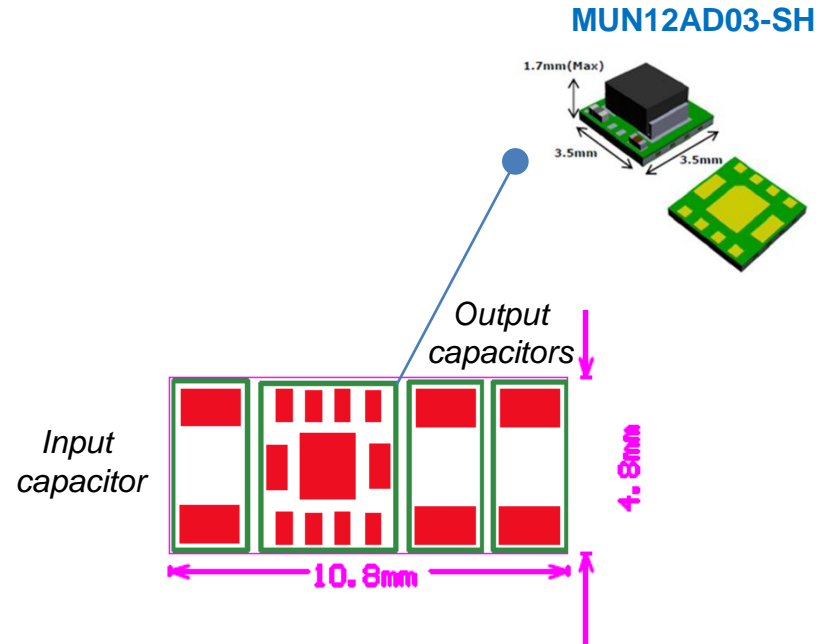


EVB guide



Layout Example of the 3A module

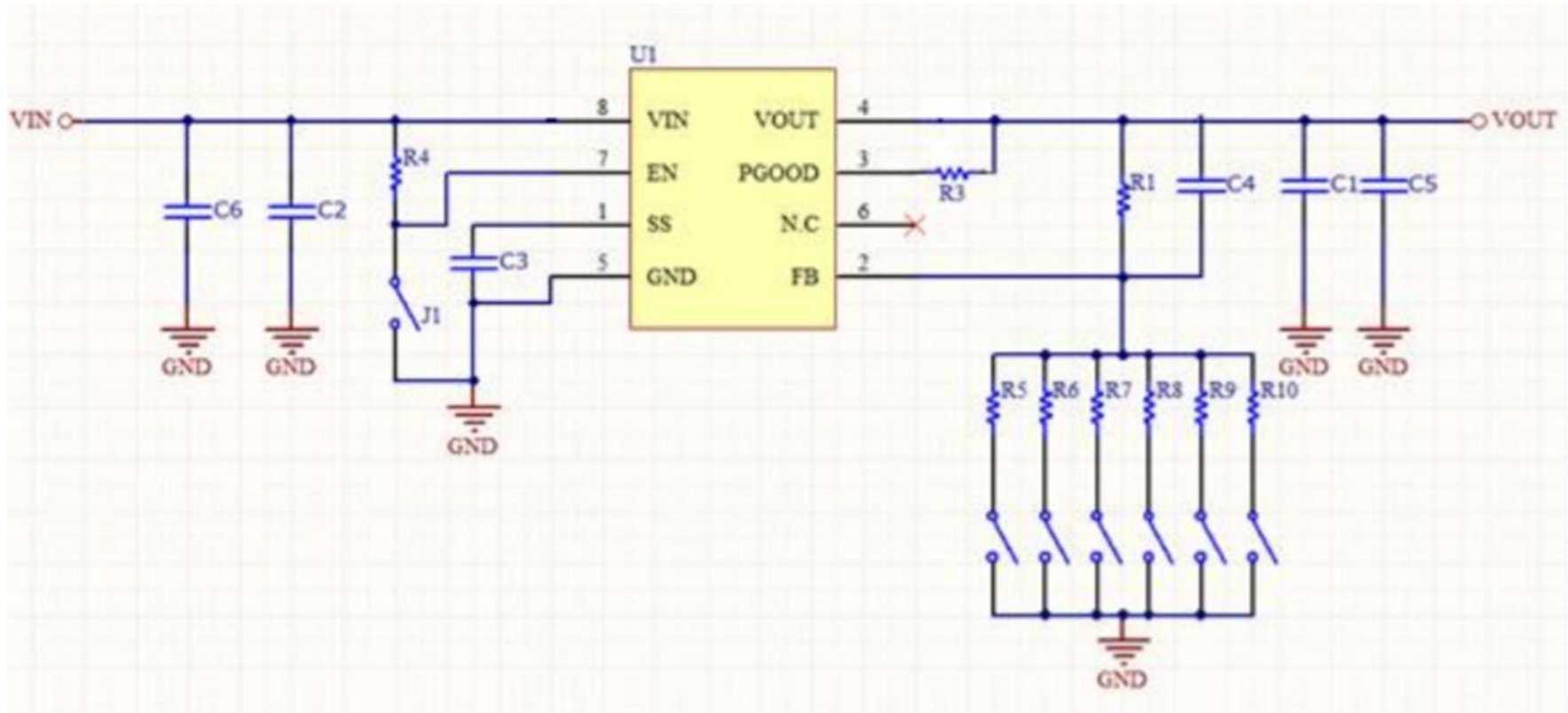
(Layout is for reference only --- single-sided SMT. Further optimization is possible in terms of output characteristics and actual application environment)



Remarks

- Input capacitance: 22uF
- Output capacitance: 47uF x2pcs
- Arrangement could be optimized based on output transient requirements

Evaluation Board Schematic of the 3A module



EVB guide

