

MUN12AD05-SMF SERIES EVB

DESCRIPTION:

The evaluation board is for the MUN12AD05-SMF SERIES, high efficiency DC/DC power module. The evaluation board is generates a +5.0V output voltage at load currents up to 5A. Output setting resistor R_{FB} can be adjusted for evaluating different output voltage. The MUN12AD05-SMF SERIES switches at 600kHz and achieve up to 92% efficiency with the supplied components.

ELECTRICAL SPECIFICATION:

MUN12AD05-SMFH

Parameters	Symbol	Value	Unit
Input Voltage Range	VIN	4.5~20	V
Output Voltage	VOUT	1.9~5	V
Output Current	IOUT	5	A

Note: Maximum Duty Cycle 85%(Typ)

MUN12AD05-SMFL

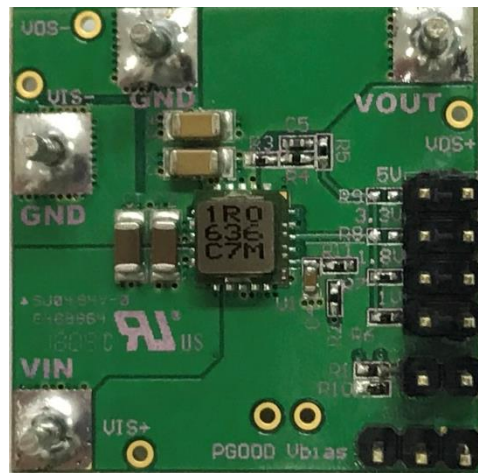
Parameters	Symbol	Value	Unit
Input Voltage Range	VIN	4.5~20	V
Output Voltage	VOUT	0.6~1.8	V
Output Current	IOUT	5	A

EVALUATION BOARD&EFFICIENCY::

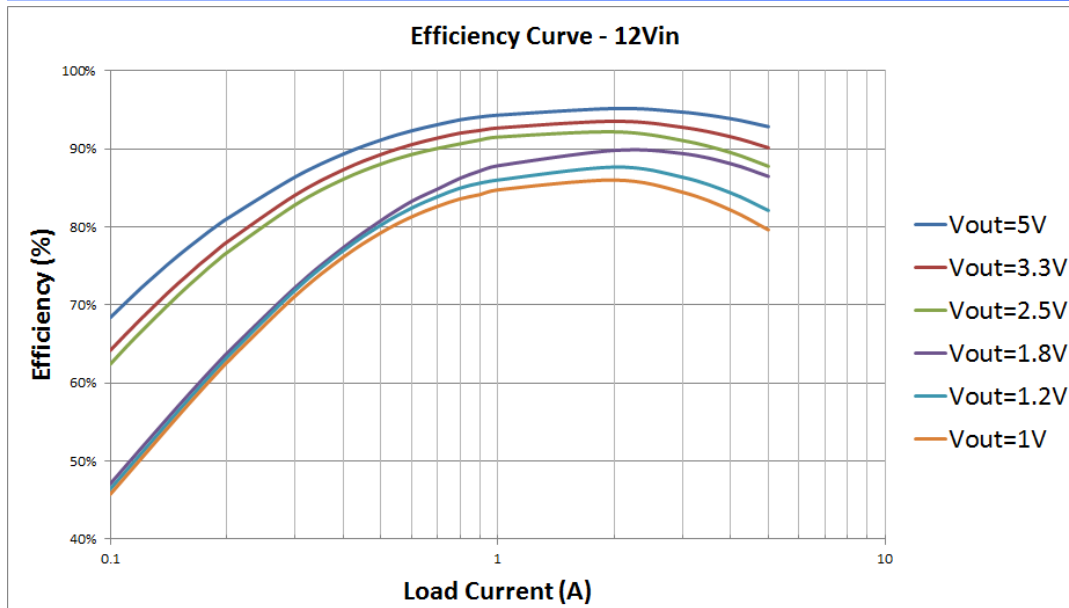
MUN12AD05-SMFH



MUN12AD05-SMFL



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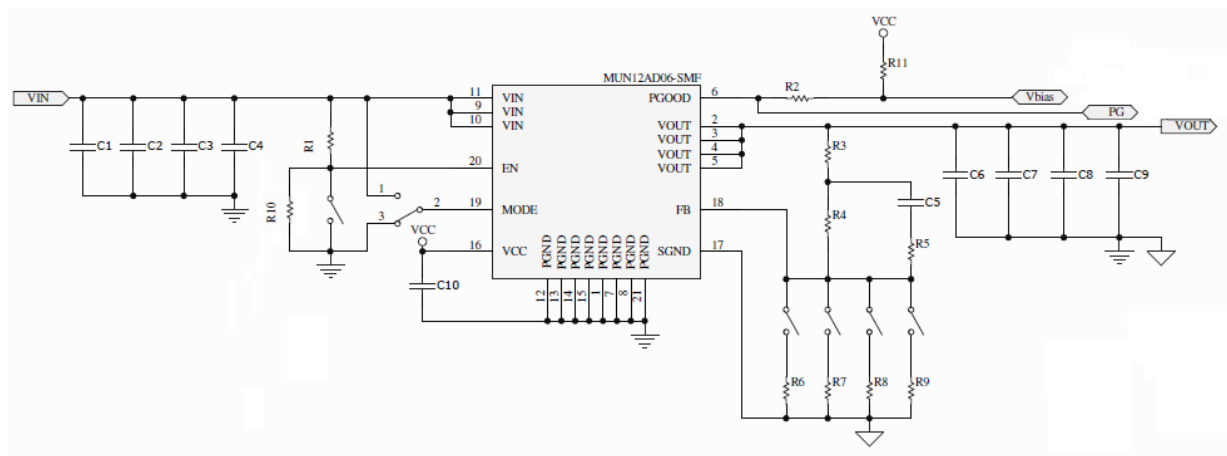
QUICK START:

The output voltage VOUT can be programmed by varying R_x ($R_6 \sim R_9$).

$$V_{out} (V) = 0.6 \times \left(1 + \frac{100k}{R_{FB}} \right)$$

Vout	1.0V	1.2V	1.8V	2.5V	3.3V	5.0V
R_{FB} (Ohm)	150k	100k	50k	31.6k	22.1k	13.7k

EVALUATION BOARD SCHEMATIC:



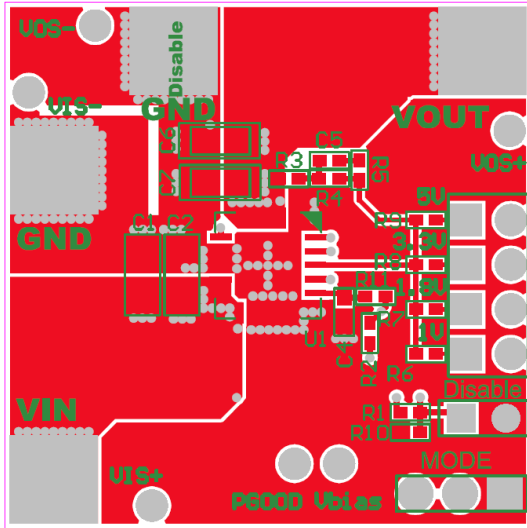
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BILL OF MATERIALS:

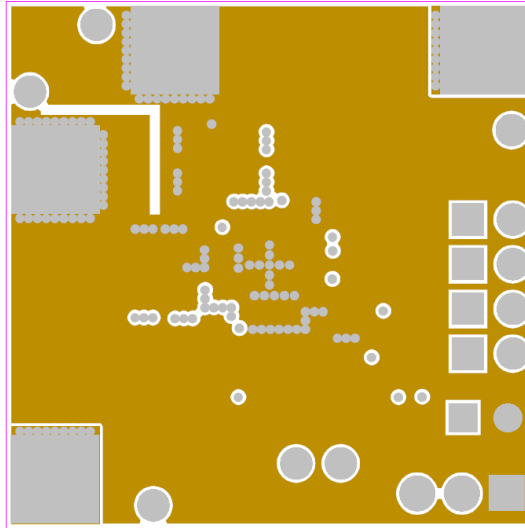
Qty	Function	Ref.	Value	Vendor
1	Input Cap	C1	4.7uF/25V/X7R/1206	Murata GRM31CR71E475KA88
1	Input Cap	C2	4.7uF/25V/X7R/1206	Murata GRM31CR71E475KA88
1	Output Cap	C6	47uF/6.3V/X5R/1206	Murata GRM31CR60J476KE19
1	Output Cap	C7	47uF/6.3V/X5R/1206	Murata GRM31CR60J476KE19
1	Output Cap	C8	100nF/25V/X7R/0603	Murata
1	Output Cap	C9	47uF/6.3V/X5R/1206	Murata GRM31CR60J476KE19
1	Enable	R1	100k/0402	Cyntec
1	Enable	R10	39k/0402	Cyntec
1	PGOOD	R2	100k/0402	Cyntec
1	PGOOD	R11	0R/0402	Cyntec
1	R _{FB}	R4	100k/0402	Cyntec
1	R _{FB}	R6	150k/0402	Cyntec
1	R _{FB}	R7	50k/0402	Cyntec
1	R _{FB}	R8	22.1k/0402	Cyntec
1	R _{FB}	R9	13.7k/0402	Cyntec
1	R _{SHORT}	R3	0R/0402	Cyntec
1	R _{SHORT}	R5	0R/0402	Cyntec
1	R _{SHORT}	R11	0R/0402	Cyntec
1	C _{FB}	C5	47pF/50V/NPO/0402	Murata
1	VCC Cap	C10	2.2uF/6.3V/X7R/0603	Murata
1	Module	U1	MUN12AD05-SMF(H/L)	Cyntec
1	Input Cap	C3	DNP	-
1	Input Cap	C4	DNP	-

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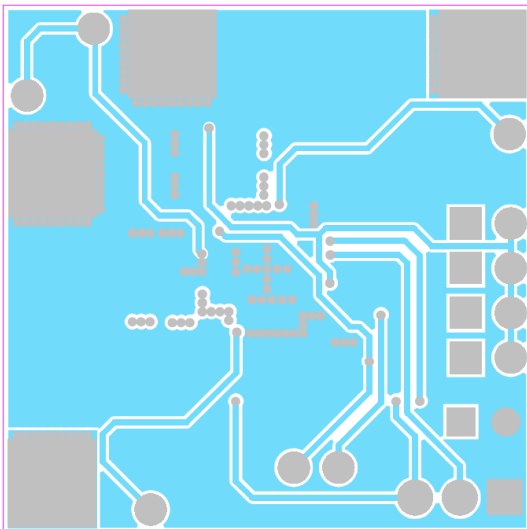
PRINTED CIRCUIT BOARD LAYOUT:



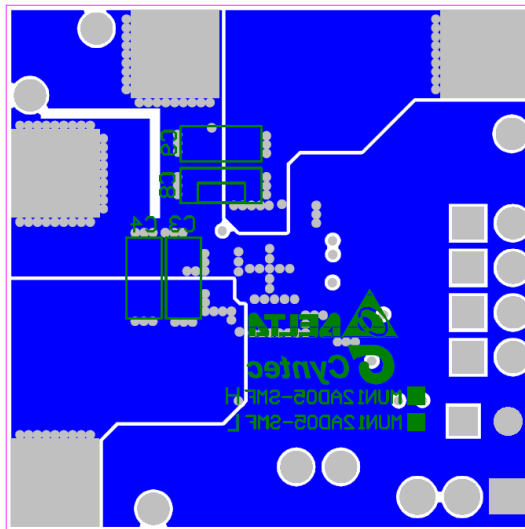
Top Layer



Mid1 Layer



Mid2 Layer



Bottom Layer