

ELECTRICAL SPECIFICATION:

Parameters	Symbol	Value	Note
Input Voltage	VIN	5.1V~24.0V	
Output Voltage	VOUT	VID	
Output Current	IOUT	3A	
Enable Voltage	EN	2.5V~5.1V	

OUTPUT LINE-DROP COMPENSATION

Connecting the VOUT pin to a R2 resistor divider and adjust the output voltage drop due to cable resistance loss between the regulator and the load.

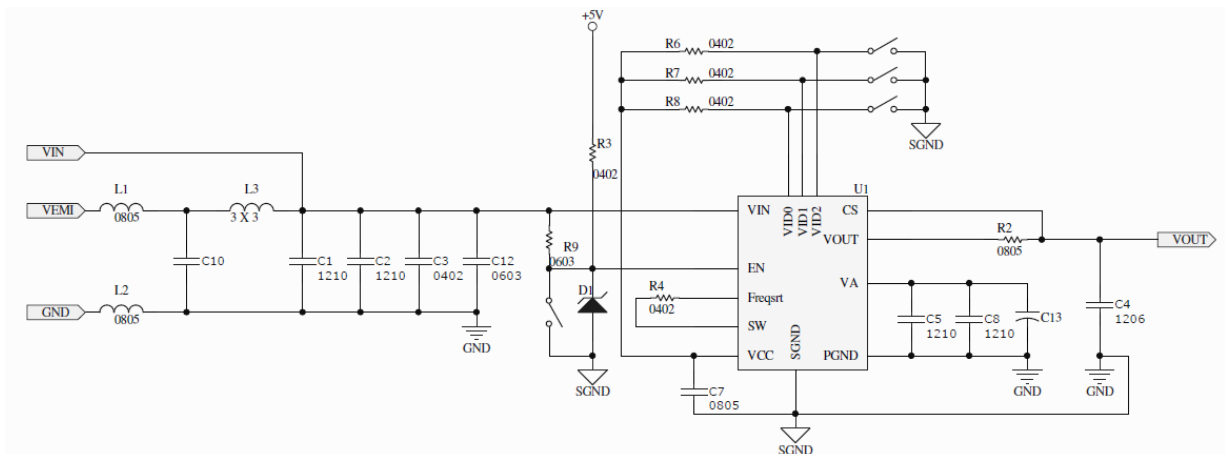
$$V_{DROD} = V_{WIRE} = 3 \times I_{OUT} \times (15m + R2) \quad (EQ.1)$$

OVER CURRENT PROTECTION

MPN24VD03-GR provides the accurate output over current protection by external resistor. If load current is more than the over current protection threshold, the output current will be limited as the setting value. The OCP threshold could be set:

$$I_{OCP} = 66mV / (15m + R2) \quad (EQ.2)$$

EVALUATION BOARD SCHEMATIC:



QUICK START GUIDE:

1. The turn on Vin and Enable (refer application range of Vin/EN as Figure 1)
2. Use a jumper connector to short the "Disable" pin to ground for shut down of the module
3. The output Voltage is programmed by VID0, VID1 and VID2 as shown in Table 1. (0: connector shorted by Jumper; 1: Floating connector)
4. If output voltage set to 20V, please keep input voltage between 20V to 21V.

VID2	VID1	VID0	Output Voltage
0	0	0	5.1V
0	0	1	6V
0	1	0	7V
0	1	1	8V
1	0	0	9V
1	0	1	12V
1	1	0	15V
1	1	1	20V

Table 1: Output Voltage Setting

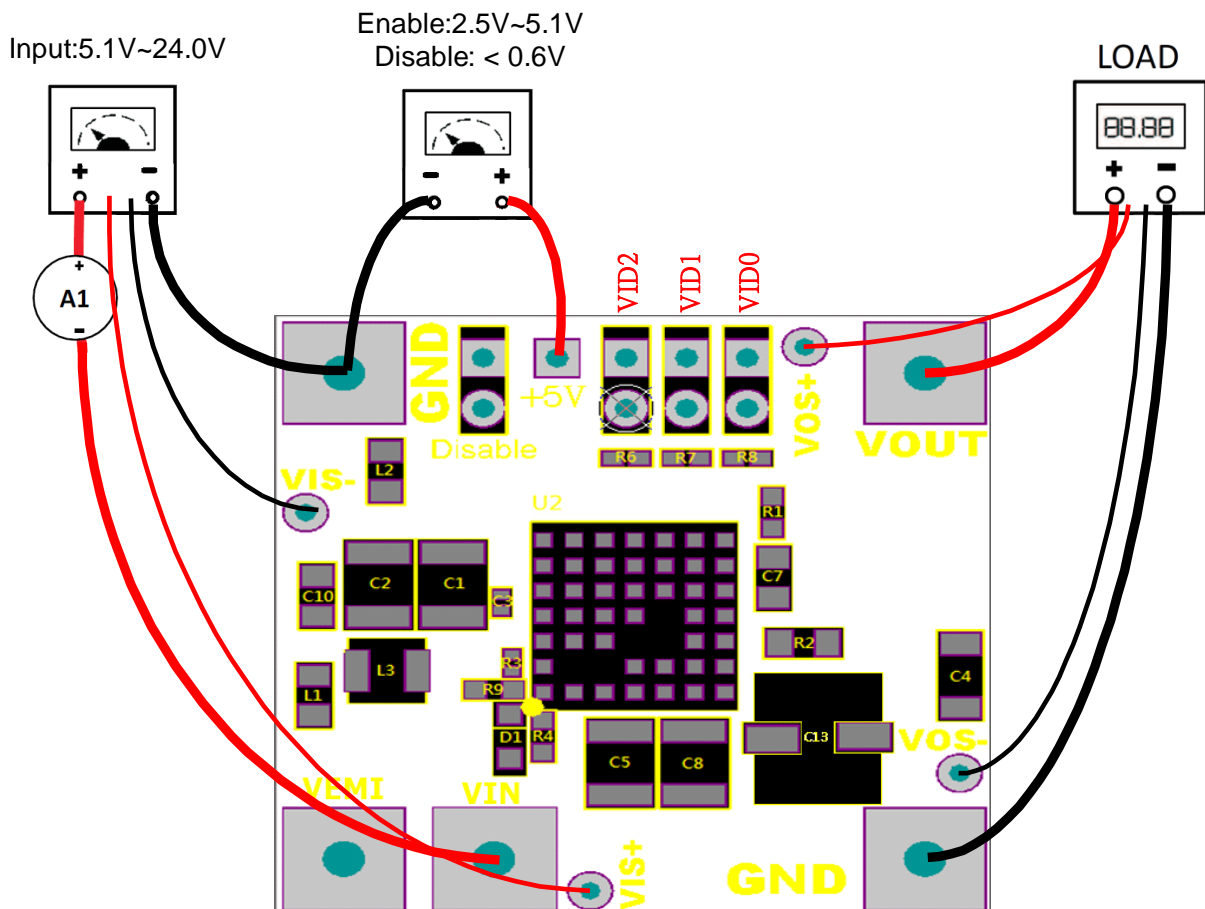
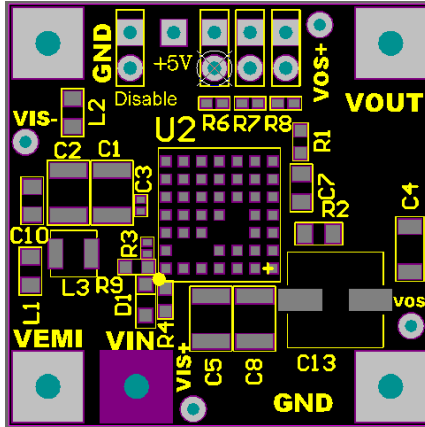
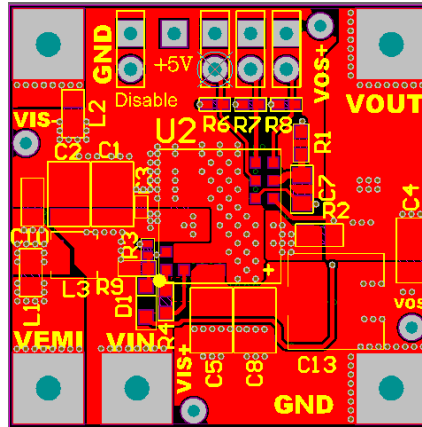


Figure 1. MSN24VD03-GR Recommended Test Setup

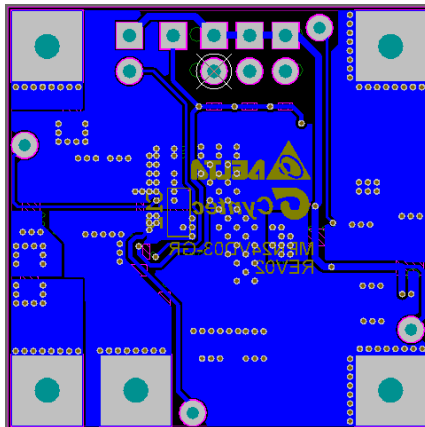
PRINTED CIRCUIT BOARD LAYOUT:



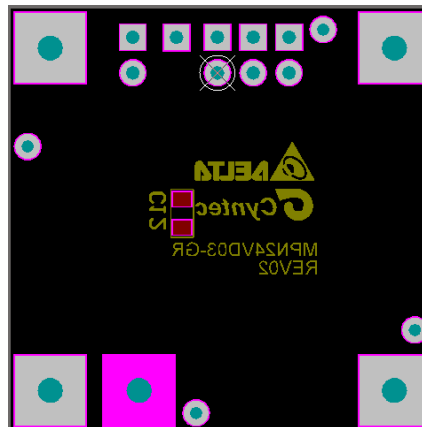
Top Component Side



Top Layer



Bottom Layer



Bottom Component Side

BOM LIST:

COUNT	REF DES	DESCRIPTION	PART NUMBER	MFR
2	C1,C2,	MLCC,10uF/50V 1210 X7R	GRM32ER71H106KA12	Murata
1	C3	MLCC,100nF/25V 0402 X7R	GRM155R71E104KE14	Murata
1	C4	MLCC,1uF/25V 1206 X7R	GRM31MR71E105MC01	Murata
2	C5,C8	MLCC,22uF/25V 1210 X7R	GRM32ER61E226ME15	Murata
1	C13	ALUM POLY, 56uF/25V	APXG250ARA560MF61G	United Chemi-Con
1	C7	MLCC,10uF/6.3V 0805 X7R	GRM219C80J106KE39	Murata
0	C10,C12	DXP		
1	R2	Short		
1	R3	Resistor,1K Ohm,±1%,0402	Std	Cyntec
1	R4	Resistor,0 Ohm,±1%,0603	Std	Std
3	R6,R7,R8	Resistor,100k Ohm,±1%,0402	Std	Cyntec
0	R9	DXP		
0	D1	DXP		
0	L2	Short		
0	L1,L3	DXP		
1	U2	Power module, 9.4*8.6*6.0mm	MSN24VD03-GR	Cyntec



MSN24VD03-GR EVB GUIDE

REVERSION HISTORY:

Date	Revision	Changes
2017.07.24	00	Issue initial preliminary EVB guide.