EV2303DN-00A

3A, 28V, 340KHz Synchronous Rectified Step-Down Converter

EVALUATION BOARD

DESCRIPTION

The EV2303DN-00A is an evaluation board for the MP2303, a monolithic synchronous buck regulator.

The MP2303 integrates $120m\Omega$ MOSFETS that provide 3A continuous load current over a wide operating input voltage of 4.75V to 28V.

Current mode control provides fast transient response and cycle-by-cycle current limiting. An adjustable soft-start prevents inrush current at turn-on. In shutdown mode, the supply current drops to $0.3\mu A$.

This device, available in an 8-pin SOIC package, provides a very compact system solution with minimal reliance on external components.

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Units
Input Voltage	V_{IN}	4.75 – 28	V
Output Voltage	V _{OUT}	3.3	V
Output Current	I _{OUT}	3	Α

FEATURES

- 3A Output Current
- Wide 4.75V to 28V Operating Input Range
- 3.3V Output, Adjustable from 0.80V to 25V

APPLICATIONS

- Distributed Power Systems
- Pre-Regulator for Linear Regulators
- Notebook Computers

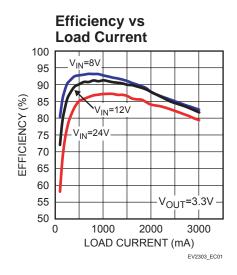
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EV2303DN-00A EVALUATION BOARD



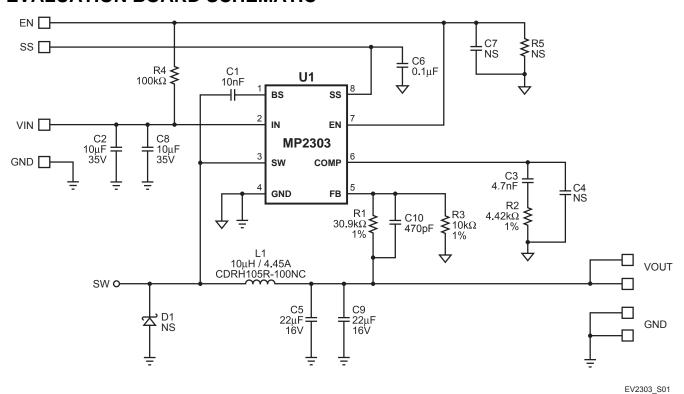
(L x W x H) 2.0" x 1.5" x 0.5" (5.0cm x 3.8 x 1.2cm)

Board Number	MPS IC Number		
EV2303DN-00A	MP2303DN		





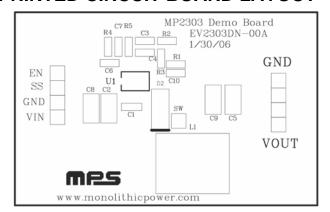
EVALUATION BOARD SCHEMATIC



EV2303DN-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Part Number
1	C1	10nF	Ceramic Capacitor, 50V, X7R	0603	Any	
2	C2 C8	10μF	Ceramic Capacitor, 35V, X7R	1210	Holystone	C1210X106M035T
1	C3	4.7nF	Ceramic Capacitor, 50V, X7R	0603	Any	
2	C4 C7		Open			
2	C5 C9	22µF	Ceramic Capacitor, 16V, X5R	1210	Taiyo Yuden	EMK325BJ226MM
1	C6	0.1µF	Ceramic Capacitor, 50V, X7R	0805	Any	
1	C10	470pF	Ceramic Capacitor, 50V, X7R	0805	Any	
1	D1		Open			
1	L1	10µH	Inductor, 4.45A	SMD	Sumida	CDRH105R-100NC
1	R1	30.9kΩ	Resistor, 1%	0603	Any	
1	R2	4.42kΩ	Resistor, 1%	0603	Any	
1	R3	10kΩ	Resistor, 1%	0603	Any	
1	R4	100kΩ	Resistor, 5%	0603	Any	
1	R5		Open			
1	U1		Synchronous Step-Down Converter	SO8	MPS	MP2303DN

PRINTED CIRCUIT BOARD LAYOUT



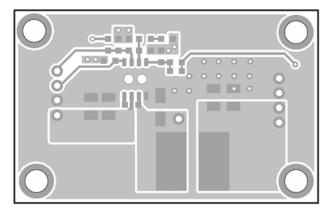


Figure 1—Top Silk Layer

Figure 2—Top Layer

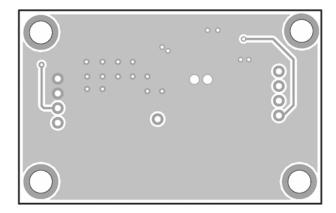


Figure 3—Bottom Layer

EVALUATION BOARD

QUICK START GUIDE

- 1. Connect the positive and negative terminals of the load to the VOUT and GND pins, respectively.
- 2. Preset the power supply output to between 4.75V and 28V, then turn it off.
- 3. Connect the positive and negative terminals of the power supply output to the VIN and GND pins, respectively.
- 4. Turn the power supply on (the MP2303 will automatically startup).
- 5. To use the Enable function, apply a digital input to the EN pin. Drive EN higher than 2.5V to turn on the regulator or less than 0.7V to turn it off.
- 6. An under voltage lockout (UVLO) function can be implemented by the addition of a resistor divider (R4 and R5). The Enable threshold is 2.5V, so the VIN UVLO threshold is: $\left(1 + \frac{R4}{R5}\right) \times 2.5V$.

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