EV22157-2891-2L-4P-A

8mm, 130A, Dual-Phase Intelli-Module™ with Quiet Switcher™ Technology Evaluation Board

DESCRIPTION

The EV22157-2891-2L-4P-A is an evaluation board designed to demonstrate the capabilities of the MPC22157-130, a 130A, dual-phase Intelli-Module™ with Quiet Switcher™ technology (QST™).

The EV22157-2891-2L-4P-A can deliver up to 130A of load current across a wide operating input voltage (V_{IN}) range. High efficiency can be achieved across a wide output current (I_{OUT}) load range.

The EV22157-2891-2L-4P-A employs one MP2891 and two MPC22157-130 devices. These devices form two power supply rails that can be run independently.

The EV22157-2891-2L-4P-A can monitor the MPC22157-130's V_{IN}, output voltage (V_{OUT}), I_{OUT}, and temperature. Full protection features include integrated, configurable V_{IN} under-voltage lockout (UVLO) protection, V_{OUT} over-voltage protection (OVP), under-voltage protection (UVP), over-current limit (OCL), and over-current protection (OCP).

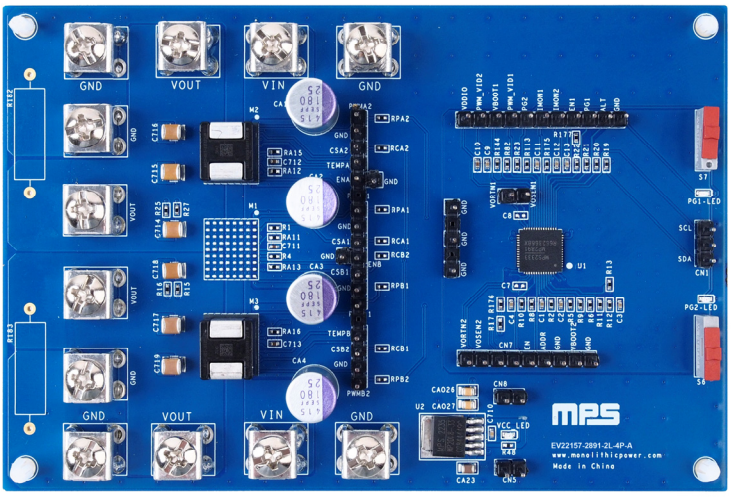
It is recommended to read the MPC22157-130 datasheet before making any changes to the EV22157-2891-2L-4P-A.

PERFORMANCE SUMMARY

Specifications are at T_A = 25°C, unless otherwise noted.

Parameters	Conditions	Value
Input voltage (V_{IN}) range		10V to 16V
Output voltage (V_{OUT})	V_{IN} = 10V to 16V, I_{OUT} = 0A to 130A	0.8V
Maximum output current (I_{OUT})	V_{IN} = 10V to 16V	130A
Switching frequency (f_{SW})		500kHz

EVALUATION BOARD



LxWxH (12cmx8cmx2cm)

Board Number	MPS IC Number
EV22157-2891-2L-4P-A	MPC22157-130

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QUICK START GUIDE

The EV22157-2891-2L-4P-A is easy to set up and evaluate the performance of the MPC22157-130. The evaluation board has a 10V to 16V input voltage (V_{IN}) range. For proper measurement equipment set-up, refer to Figure 1 and see the start-up and shutdown sequence steps below:

Start-Up Sequence

1. Set the input voltage (V_{IN}) to be between 10 and 16V.
2. Turn on mechanical enable (EN) switches via S7 and S6 for rail A and rail B, respectively.
3. Turn on the EN commands using the MPS Power Manager GUI via VOUT1 and VOUT2 for rail A and rail B, respectively. (1)

Shutdown Sequence (2)

1. Set V_{IN} to be below 10V or above 16V.
2. Turn off the EN switches via S7 and S6, or turn off the EN commands using the GUI.

Notes:

1) Contact an MPS FAE to obtain the MPS Power Manager GUI.
2) The evaluation board can shut down if a protection is triggered, such as V_{IN} over-voltage protection (OVP), V_{IN} under-voltage protection (UVP), V_{OUT} OVP or UVP, over-current protection (OCP), or over-temperature protection (OTP). If a protection is triggered, cycle the power on the VIN or EN switches to recover the output.

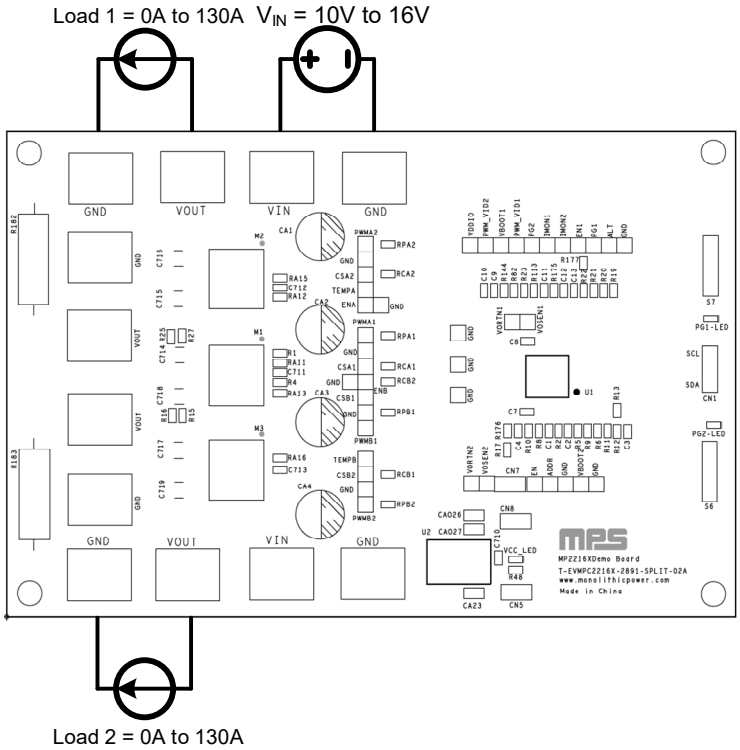

Figure 1: Measurement Equipment Set-Up

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