

Evaluation board for digital & analog half brick IBC

USER GUIDE for BMR685, PKJ4000

ROA 1286012



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1 Introduction

This User Guide provides a brief introduction and instruction on how to use the evaluation board ROA 1286012 together with BMR685 or PKJ4000 in R1A revision or later. We have chosen the BMR685 as a sample in this User Guide.

1.1 How to contact Flex

For general questions or interest in our products, please visit our website or contact your local sales representative.

[Flexpowermodules.com](https://flexpowermodules.com)

1.2 Prerequisites

In order to operate the evaluation board, the following is needed:

- Power supply 36-75 V
- BMR685 or PKJ4000 module (the board is not pre-populated)

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Evaluation board ROA 1286012

In Figure 1a and 1b the top and bottom sides of the ROA 1286012 are shown.



Figure 1a: ROA 1286012 (top side)

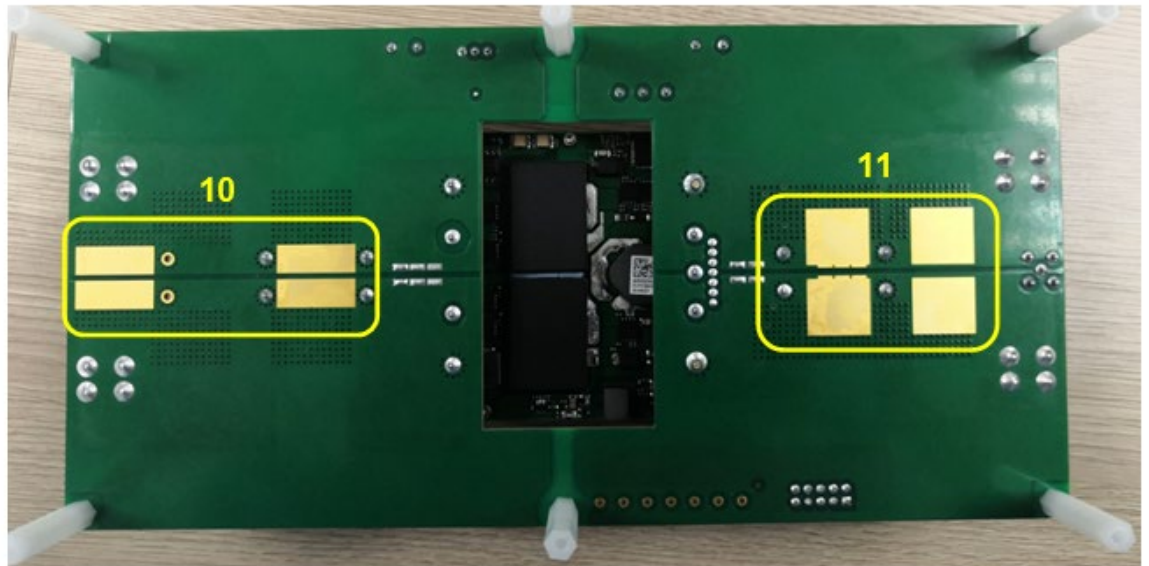


Figure 1b: ROA 1286012 (bottom side)

Position description (top side)

1	Input voltage connectors.
2	Output voltage connectors.
3	SMB Oscilloscope connectors for Vin and Vout
4	BMR685 or PKJ4000 module
5	Testing points for Vin
6	Testing points for Vout
7	ENABLE switch
8	Testing points for Vsense+, Vtrim and Vsense-
9	Connector for the PMBus-to-USB adaptor

Position description (bottom side)

10	Space for additional input capacitors
11	Space for additional output capacitors

3 Power-up and Power-down Instructions

3.1 Power-up instruction

- Apply input power supply through the input connectors (position 1).
- Apply Electrical loading through the output connectors (position 2).
- Make sure the Enable switch (position 7) is in the OFF position
- Turn on the input power supply ($V_{in} = 36-75V$).
- Set the Enable switch to the ON position.

3.2 Power-down instruction

- Set Enable switch to the OFF position
- Turn off the input power supply ($V_{in} = 36-75V$).

4 Test Points

4.1 VIN/VOUT test points

The input voltage should be measured at test points +IN/-IN (position 5) which are connected directly to the VIN/GND pins of the attached module on the Test board.

The output voltage can be measured at test points +OUT/-OUT (position 6) which are directly connected to the VOUT/GND pins of the attached module on the Test board.

4.2 Vsense+/Vtrim/Vsense- test points

Vsense+ / Vsense- test points (position 8) are for load regulation and line regulation testing.

The Vtrim (Adj) test point (position 8) is for output voltage active adjust - apply a voltage between Vtrim (Adj) test point and Vsense- point. Refer to the product's Technical Specification for more details.

4.3 Output ripple and noise test points

The output ripple & noise test point (position 3) can be used to measure the output ripple and noise of the attached module.

5 Additional input and output capacitance

If additional output capacitance is desired, the possibility exists to mount extra electrolytic and/or ceramic capacitors. The space for additional input capacitors is position 10, and the space for additional output capacitors is position 11.

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PMBus connector

The PMBus connector (position 9) can be connected directly to a USB Interface Adapter such as [FAB8020785](https://www.fab8020785.com/). Using the adapter, it's possible to realize PMBus communication, as well as download a program to the controller.

Figure 2 shows the PMBus connector pin definition:

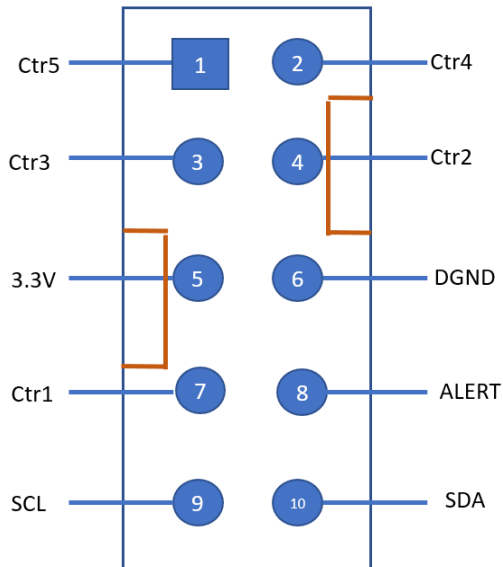


Figure 2: PMBus connector pin definition

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Contact us

Headquarter

Flex Power Modules
Torshamnsgatan 28A
SE-164 40 Kista, Sweden

Email: pm.info@flex.com

Web: flexpowermodules.com

LinkedIn: linkedin.com/showcase/flex-power-modules/

Flex Power Designer: flexpowerdesigner.com

WeChat: flexpowermodules.com/wechat

YouTube: youtube.com/flexintl

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