

OPTIREG™ linear voltage regulator TLS10xB0MB demoboard

Z8F61701244



Family
overview



Support

Preface

Scope and purpose

This document provides information about the usage of the demoboards for the voltage tracking regulator TLS10xB0MB in a PG-SCT595-5 package from Infineon Technologies AG. Please also refer to the corresponding datasheets.

Intended audience

This document is intended for engineers who develop applications.

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Introduction

1 Introduction

1.1 TLS10xB0MB family and features

TLS10xB0MB family

Table 1 TLS10xB0MB family

Type	Package	Output current	Enable/Adjust
TLS102B0MB	PG-SCT595-5	20 mA	✓
TLS105B0MB	PG-SCT595-5	50 mA	✓

TLS10xB0MB features

- Very high accuracy voltage tracking
- Output voltage adjustable down to 2.0 V
- Very low dropout voltage
- Very low current consumption of typically 3 μ A in off mode
- Improved regulation loop:
 - Very fast regulation
 - Good stability characteristics
 - Small ceramic capacitor of 1 μ F at the output is required
- Internal protection features:
 - Output current limitation
 - Short circuit protected output (to GND and to battery)
 - Overtemperature shutdown
 - Reverse polarity protected input
- AEC qualified
- Green Product (RoHS compliant)

These features make the TLS10xB0MB voltage tracking regulators perfectly suitable as automotive sensor supply and as high precision supply for off-board loads.

Introduction

1.2 Block diagram

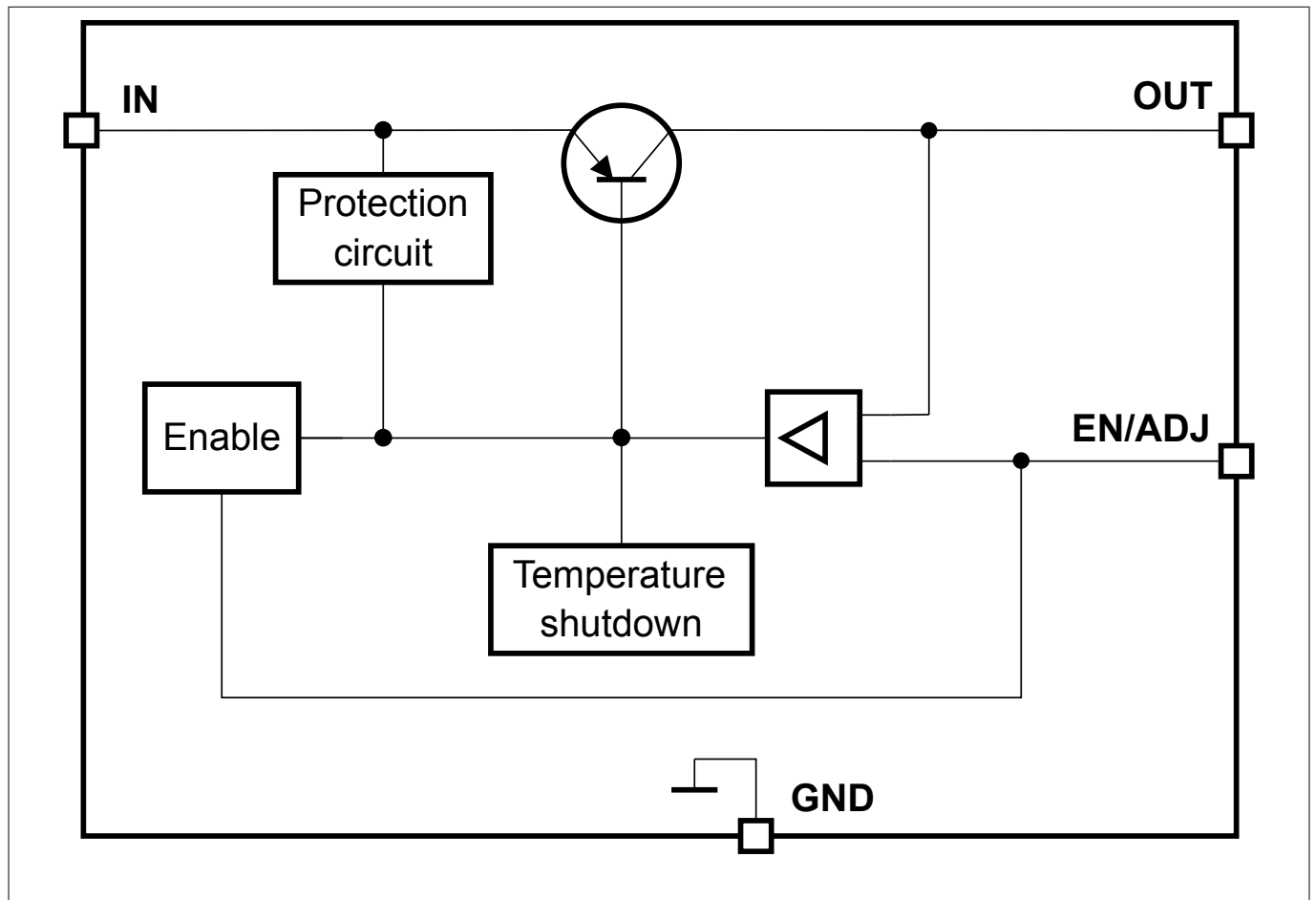


Figure 1 Block diagram TLS10xB0MB

Demoboard

2 Demoboard

The OPTIREG™ linear voltage regulator TLS10xB0MB demoboard is available for all devices of the TLS10xB0MB voltage tracking regulator family in a PG-SCT595-5 package, see [Table 1](#).

[Figure 2](#) shows the OPTIREG™ linear voltage regulator TLS10xB0MB demoboard.

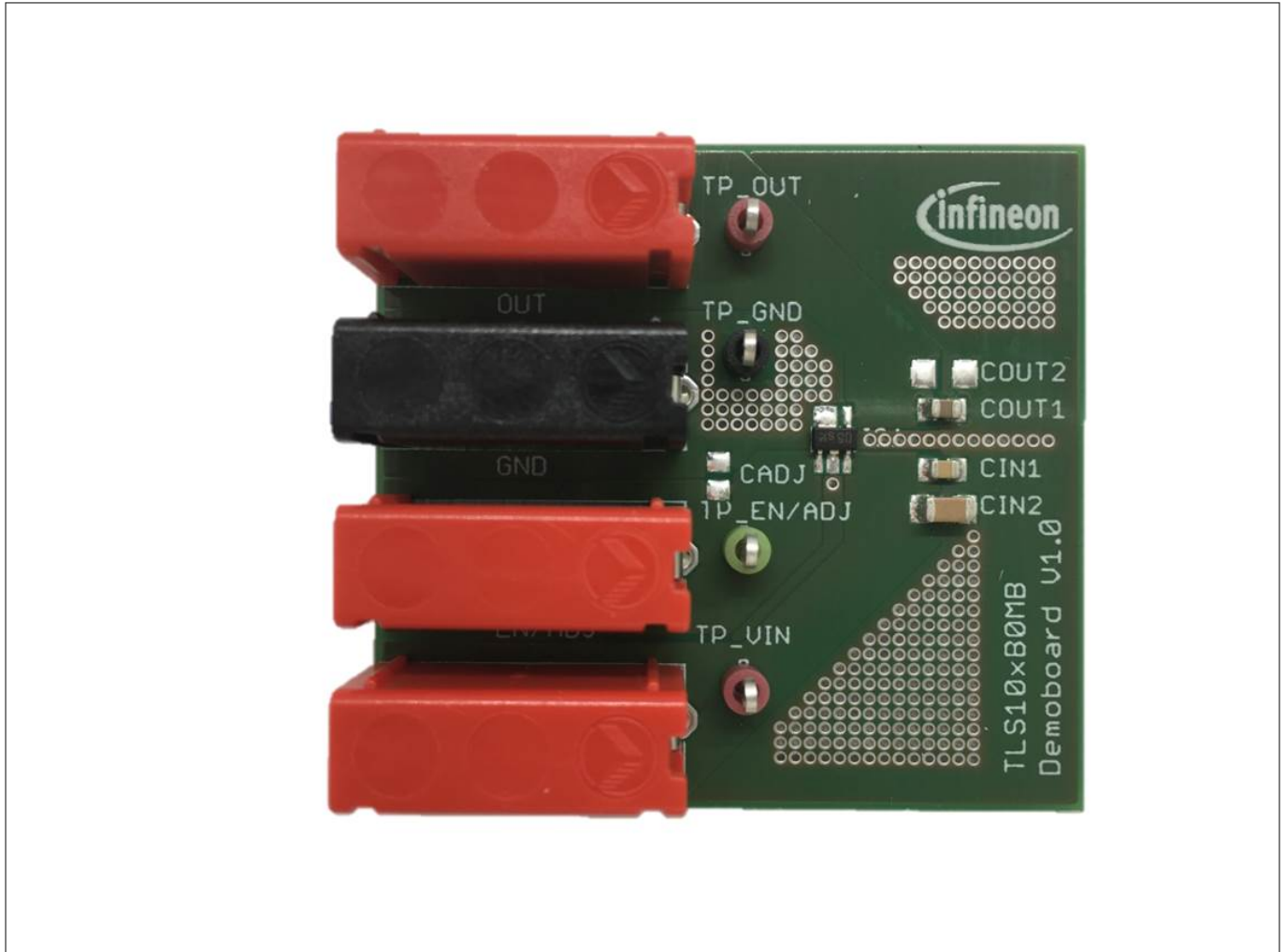


Figure 2 Demoboard

Demoboard

2.1 Operating conditions

To avoid electrical damage of the demoboard, the operating range defined in [Table 2](#) must be maintained.

Table 2 Limit values for operation¹⁾

Parameter	Pin	Maximum Ratings		Unit	Note
		Min.	Max.		
Board supply voltage	IN	-16	45	V	²⁾ Power supply
Enable/Adjust voltage	EN/ADJ	-0.3	45	V	³⁾ Tracked reference voltage
Regulator output voltage	OUT	-5	45	V	–
Input output voltage difference	VIN-VOUT	-30	45	V	–
Ground	GND	0	0	V	System GND

¹ The demoboard operates at an ambient temperature of 25°C.

² Functional input voltage range: 4 V to 45 V.

³ Functional ADJ voltage range: 2 V to 14V.

Schematic and layout

3 Schematic and layout

3.1 Schematic

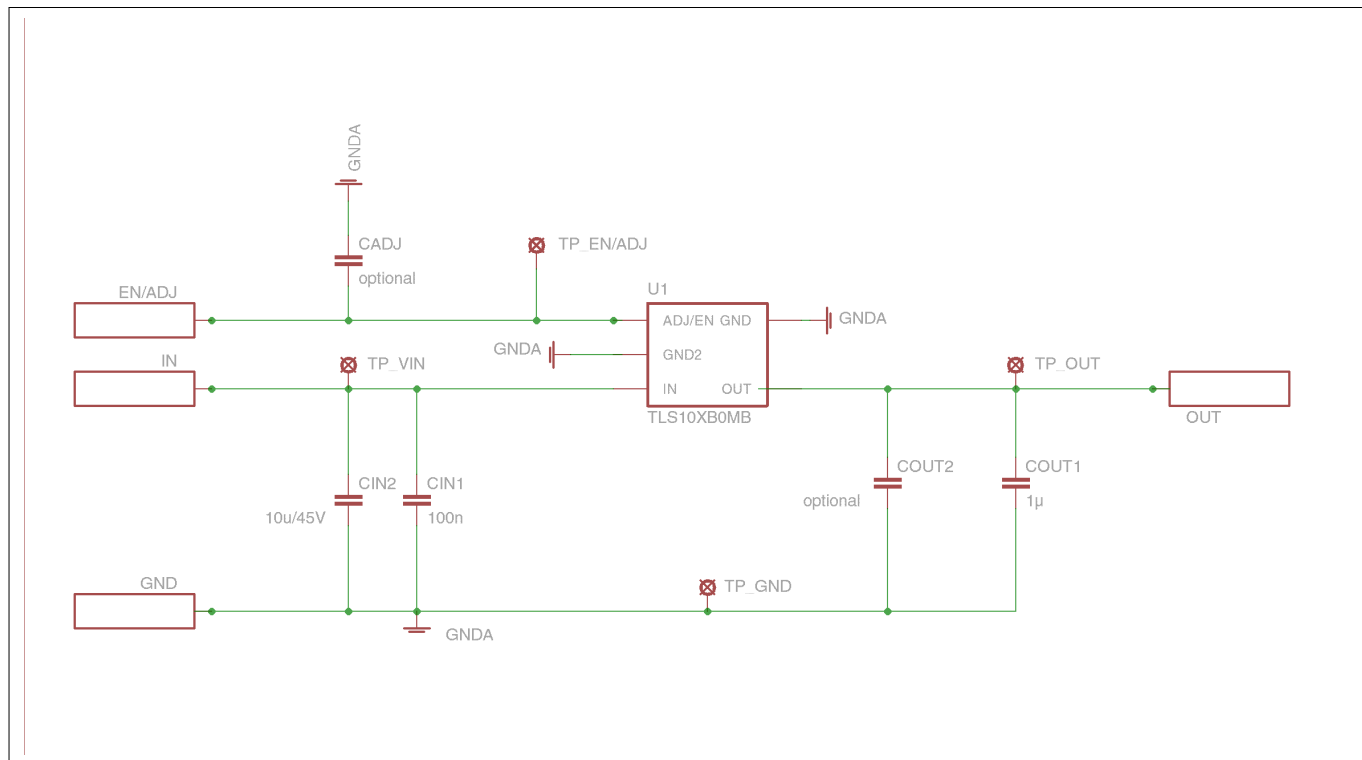


Figure 3 Schematic

Schematic and layout

3.2 Layout

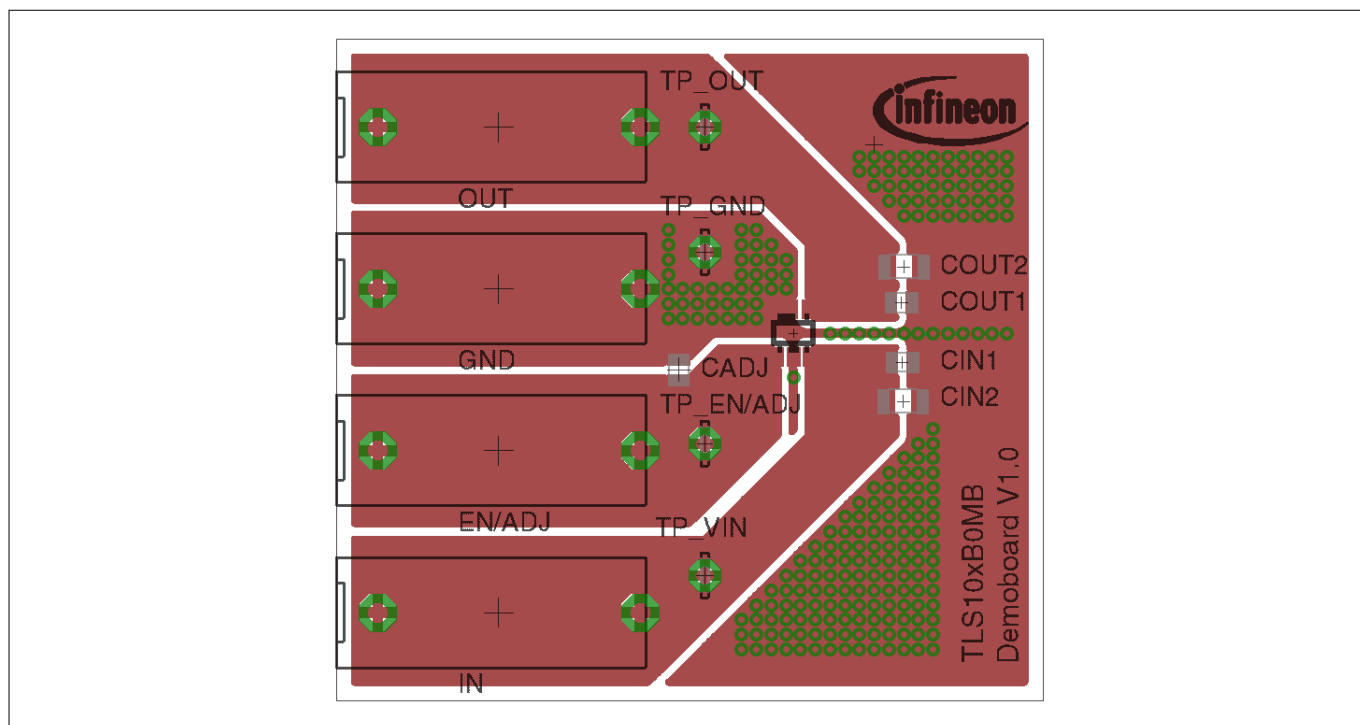


Figure 4 Top layer

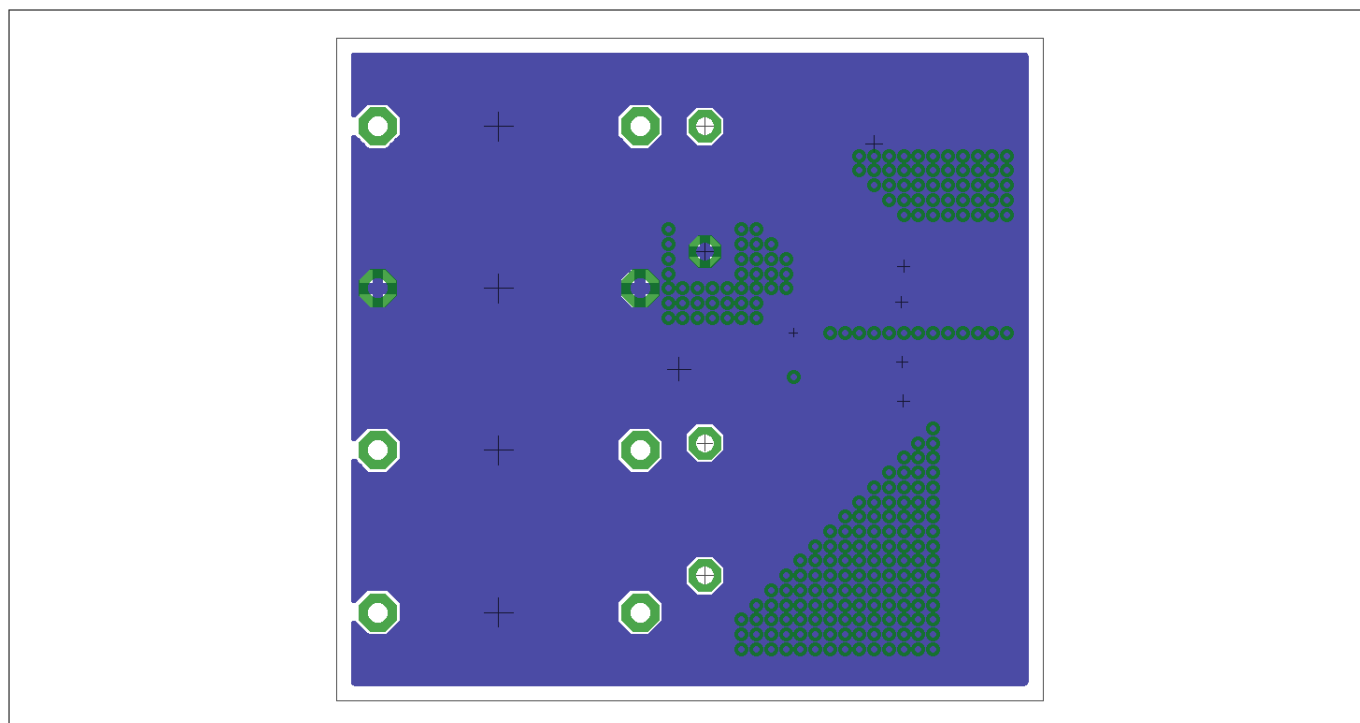


Figure 5 Bottom layer

Bill of materials

4 Bill of materials

Table 3 Bill of materials

Part	Value	Package
IN	Banana jack	BABU4MM
OUT	Banana jack	BABU4MM
EN/ADJ	Banana jack	BABU4MM
GND	Banana jack	BABU4MM
CIN1	100 nF	C0805
CIN2	10 μ F	C1206
COU1	1 μ F	C0805
COU2	n.a.	C1206
CADJ	n.a.	C0805
TP_VIN	Test point VIN	–
TP_EN/ADJ	Test point EN/ADJ	–
TP_OUT	Test point OUT	–
TP_GND	Test point GND	–

Restrictions

5 Restrictions

This demoboard offers limited features only for evaluation and testing of Infineon products. The demoboard is not an end product or finished appliance, nor is it intended or authorized by Infineon to be integrated into end products. The demoboard may not be used in any production system.

For further information please contact www.infineon.com.

Revision history

6 Revision history

Revision	Date	Changes
1.01	2021-02-11	Editorial changes
1.0	2018-04-13	Document created

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