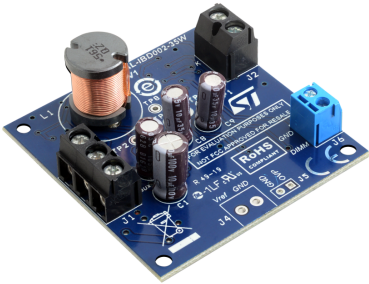


## Inverse Buck 35W with LED current controlled by HVLED002 with Analog/PWM dimming regulation



### Features

- Input voltage:  $V_{in}$ : 48 Vdc-60 Vdc;  $V_{aux}$ : 15 Vdc.
- LED output voltage: 24 Vdc-48 Vdc
- Maximum LED output current: 700 mA
- Dimming: between 1%-100%
- No-load: lower than 50 mW @ 60 Vindc
- Efficiency:
  - Full load: >97%
  - Load over 20% (analog dimming): > 95%
- Output Ripple Current: <80 mA @worst case 50 Vindc-48 Voutdc
- Short-circuit protection
- PCB board: 50 mm x 50 mm single-side PCB
- RoHS compliant

### Description

This document describes the [EVAL-IBD002-35W](#) demonstration board behavior, designed to manage a dimmable 35 W LED load with a single inverse buck stage.

The [HVLED002](#) controller manages the inverse buck circuitry mainly composed by D1, L1 and Q1 components, able to provide around 700 mA as maximum LED load current.

An external 0-10 V signal is dedicated to managing a dimmed output LED current between 1%-100% of its maximum value with both Analog (100%-10%) and PWM (10%-1%) control.

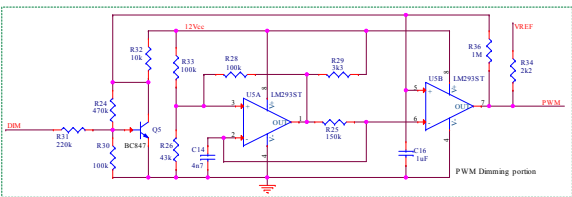
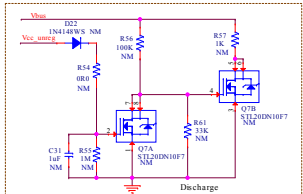
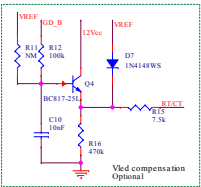
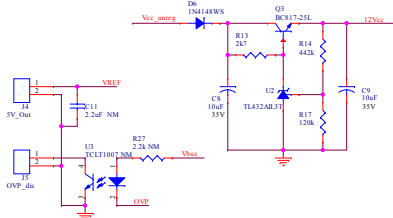
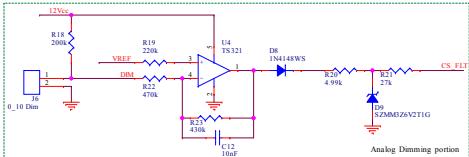
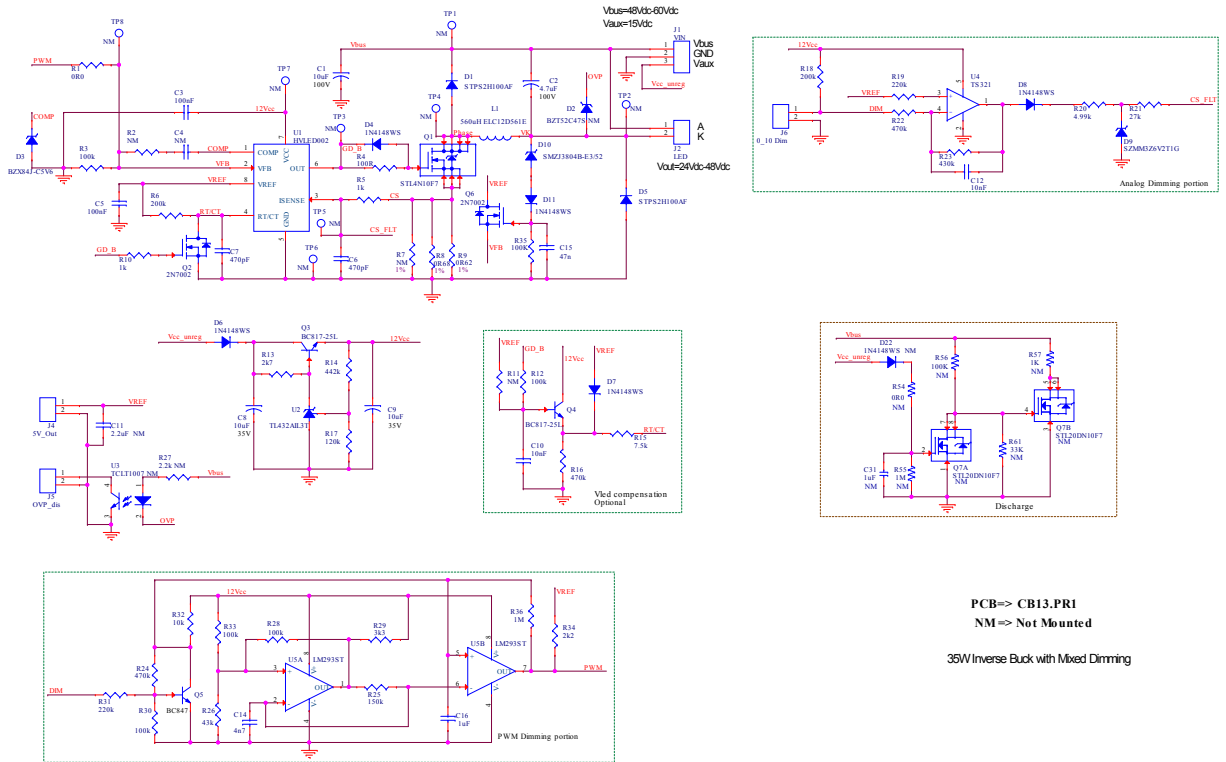
A 15 Vdc of auxiliary voltage is needed to power up the HVLED002 controller.

Product status link

[EVAL-IBD002-35W](#)

# 1 Schematic

Figure 1. EVAL-IBD002-35W schematic



PCB=> CB13.PRI  
NM => Not Mounted  
35W Inverse Buck with Mixed Dimming

## 2 Efficiency

Figure 2. EVAL-IBD002-35W Efficiency@60Vindc

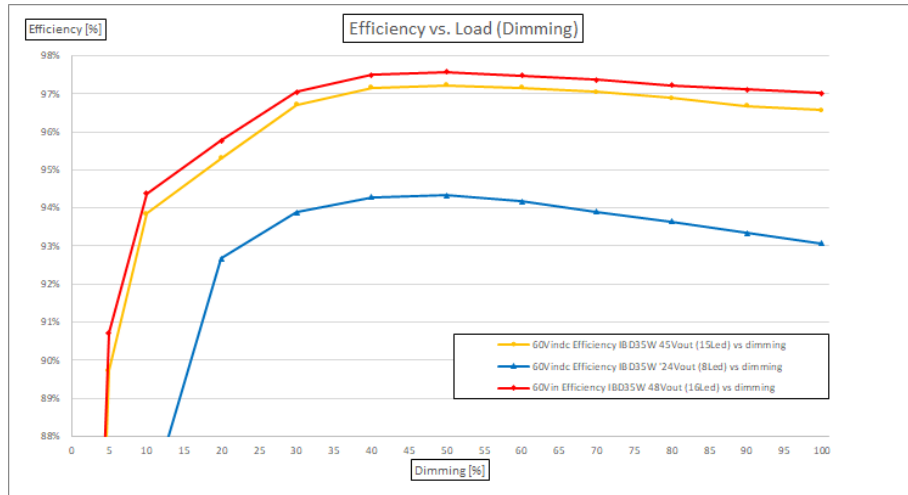
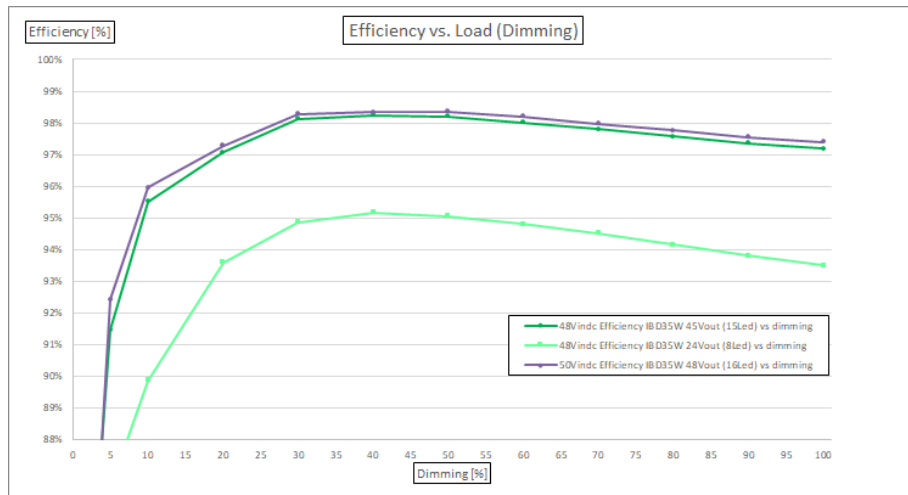


Figure 3. EVAL-IBD002-35W Efficiency@48 and 50Vindc



## Revision history

**Table 1. Document revision history**

Date	Version	Changes
25-Feb-2020	1	Initial release.

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