

A4950xLJ Evaluation Board User Guide

DESCRIPTION

This evaluation board is used to demonstrate the Allegro A4950xLJ full-bridge DMOS PWM motor driver IC.

FEATURES

- Onboard voltage regulator for logic inputs
- Potentiometer to control the peak output current

EVALUATION BOARD CONTENTS

- APEK4950ELJ-01-T evaluation board

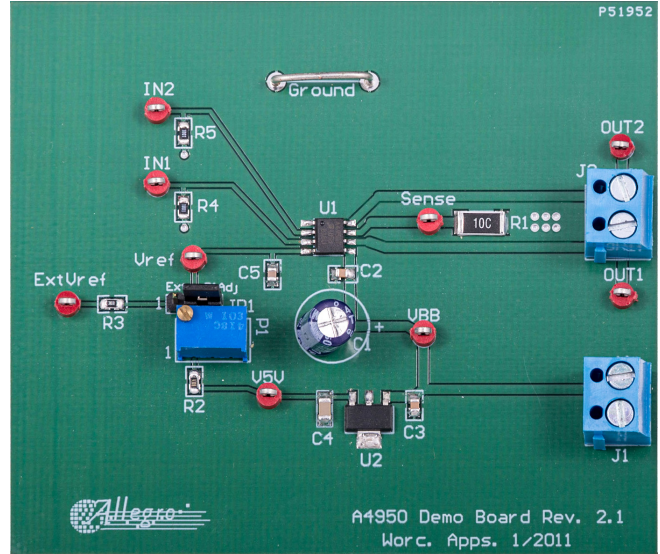


Figure 1: A4950xLJ Evaluation Board

Table 1: A4950xLJ Evaluation Board Configurations

Configuration Name	Part Number
APEK4950ELJ-01-T	A4950ELJ-T
APEK4950KLJ-01-T	A4950KLJ-T

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Table 2: General Specifications

Specification	Min.	Nom.	Max.	Units
Motor Supply Voltage (V_{BB})	4	–	40	V
VREF Output Voltage ($V_{BB} = 6$ to 40 V)	0	–	5	V
Input Logic Low Level	0	–	0.8	V
Input Logic High Level	2	–	–	V

USING THE EVALUATION BOARD

EQUIPMENT REQUIRED

- DC motor
- Voltage supply

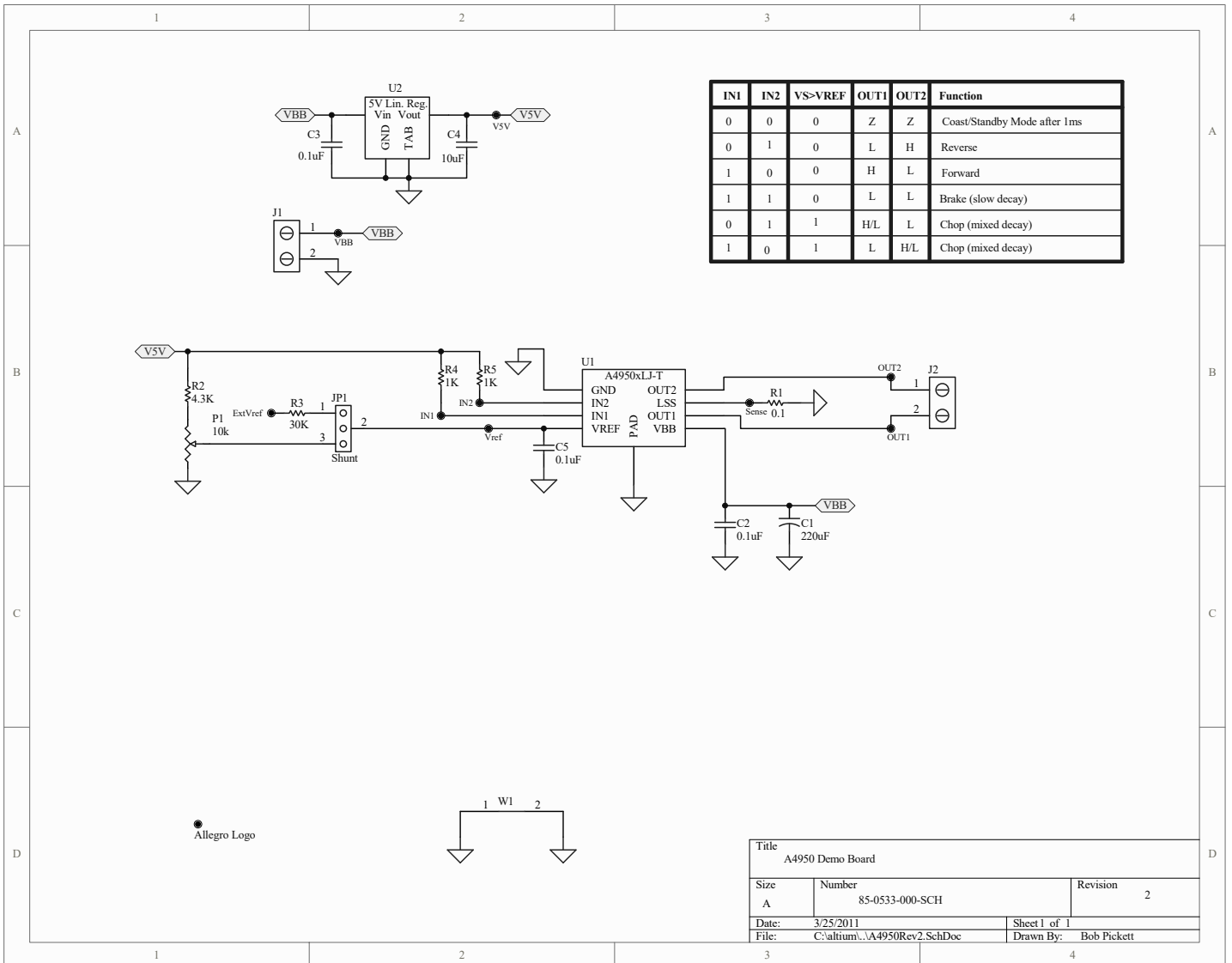
SETUP

1. Set the motor voltage supply to the intended voltage.
2. Turn off motor voltage supply.
3. Connect motor voltage supply to J1.
4. Turn the voltage supply on after ensuring that the motor is NOT connected.
5. Adjust P1 to set the peak current to intended value (see data-sheet).
6. Turn off motor voltage supply.
7. Connect the motor to J2 (screw-down terminals).

Note: Do not connect or disconnect the motor unless the outputs are either disabled or the VBB voltage is off.

8. Turn the voltage supply on.

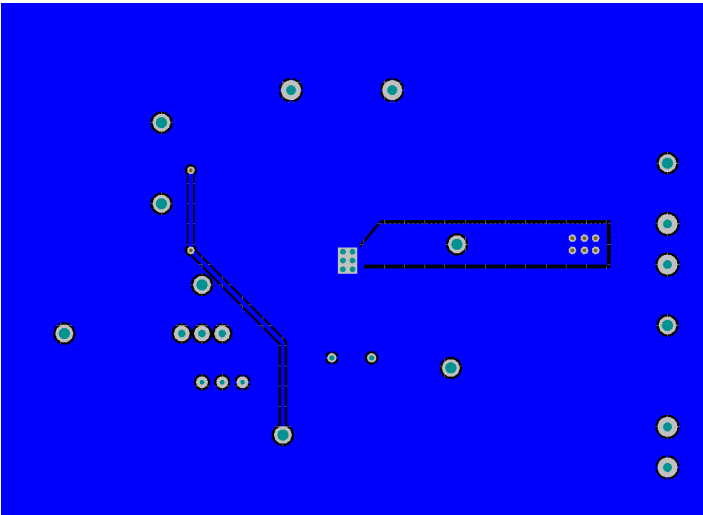
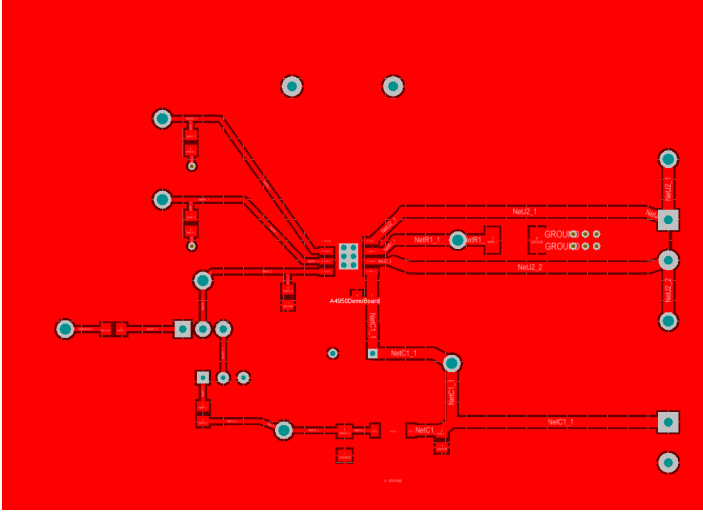
SCHEMATIC



Allegro Logo

Title A4950 Demo Board		
Size A	Number 85-0533-000-SCH	Revision 2
Date: 3/25/2011	Sheet 1 of 1	
File: C:\altium\A4950Rev2.SchDoc	Drawn By: Bob Pickett	

LAYOUT



BILL OF MATERIALS

Table 3: APEK4950ELJ-01-T Evaluation Board Bill of Materials

ELECTRICAL COMPONENTS					
Designator	Quantity	Value	Description	Part Type	Footprint
C1	1	220 μ F	50 V Electrolytic Capacitor	Panasonic ECA-1HM221; Digikey	CAP10mmDIA_5mmPS
C2, C3	2	0.1 μ F	50 V Ceramic Capacitor	TDK C2012X7RH104K; Digikey 445-1349-1-ND	0805
C4	1	10 μ F	16 V Ceramic Capacitor	Murata GRM31MF51C106ZA12L; Digikey 490-3383-1-ND	1206
C5	1	0.1 μ F	16 V Ceramic Capacitor	Murata GRM219R71C104K; Digikey 490-1683-1-ND	0805
ExtVref, IN1, IN2, OUT1, OUT2, Sense, V5V, VBB, Vref	9	–	Large Test Point	Keystone Electronics 5010; Digikey 5010K-ND	PAD 57 125 TP HB
J1, J2	2	–	2-Pin Screw Down Connector	On Shore Technology ED120/2DS; Digikey ED1609-ND	2-pin screw down connector
JP1	1	–	Cut pins from 50-pin strip	Samtec TSW-150-07-T-S; Digikey SAM1035-50-ND	3-pos. shunt
P1	1	10 k Ω	1/2 W	Bourns 3299W-103LF; Digikey 3299W-103LF-ND	Through-hole Trimpot
R1	1	0.1 Ω	1 W Resistor	Panasonic ERJ-L1WKJ10CU; Digikey P100TCT-ND	CR6332-2512
R2	1	4.3 k Ω	Resistor	Panasonic ERJ-6GEYJ432V; Digikey P4.3KACT-ND	0805
R3	1	30 k Ω	Resistor	Panasonic ERJ-6GEYJ303V; Digikey P30KACT-ND	0805
R4, R5	2	1 k Ω	Resistor	Panasonic ERJ-6GEYJ102V; Digikey P1.0KACT-ND	0805
U1	1	–	DMOS Full-Bridge Motor Driver	A4950xLJ-T	LJ
	4	–	Clear Bumpon feet	3M SJ5303; Digikey SJ5303-7-ND	–
U2	1	5 V	Linear Regulator	National LM2936MP-5.0/NOPB; Digikey LM2936MP-5.0CT-ND	SOT223
W1	1	–	22-Gauge Buss Wire		Scope Ground

RELATED LINKS

A4950 Product Page: <https://www.allegromicro.com/en/products/motor-drivers/brush-dc-motor-drivers/a4950>

APPLICATION SUPPORT

For applications support contact, go to <https://www.allegromicro.com/en/about-allegro/contact-us/technical-assistance> and navigate to the appropriate region.

Revision History

Number	Date	Description
-	July 26, 2023	Initial release

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