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Contact us

KIT33887EKEVB Evaluation Board
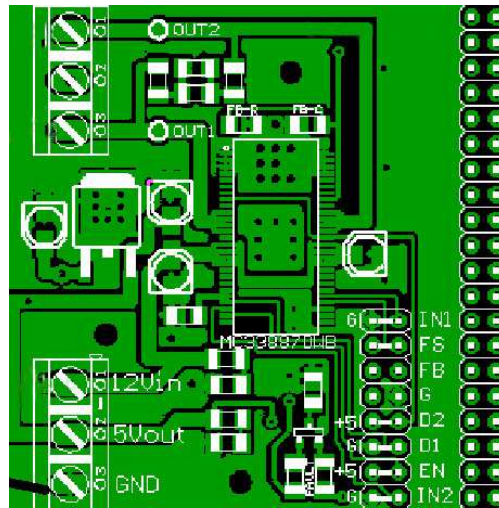
Figure 1. KIT33887EKEVB

Table of Contents

freescale™
semiconductor

1   Kit Contents / Packing List

- Evaluation Board - KIT33887EKEVB
- CD33887, Revision 3

2   Important Notice

Freescale provides the enclosed product(s) under the following conditions:

This evaluation kit is intended for use of ENGINEERING DEVELOPMENT OR EVALUATION PURPOSES ONLY. It is provided as a sample IC pre-soldered to a printed circuit board to make it easier to access inputs, outputs, and supply terminals. This EVB may be used with any development system or other source of I/O signals by simply connecting it to the host MCU or computer board via off-the-shelf cables. This EVB is not a Reference Design and is not intended to represent a final design recommendation for any particular application. Final device in an application will be heavily dependent on proper printed circuit board layout and heat sinking design as well as attention to supply filtering, transient suppression, and I/O signal quality.

The goods provided may not be complete in terms of required design, marketing, and or manufacturing related protective considerations, including product safety measures typically found in the end product incorporating the goods. Due to the open construction of the product, it is the user's responsibility to take any and all appropriate precautions with regard to electrostatic discharge. In order to minimize risks associated with the customers applications, adequate design and operating safeguards must be provided by the customer to minimize inherent or procedural hazards. For any safety concerns, contact Freescale sales and technical support services.

Should this evaluation kit not meet the specifications indicated in the kit, it may be returned within 30 days from the date of delivery and will be replaced by a new kit.

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3   Setup the EVB

Figure 1. Setting up the EVB

4 Using the EVB

Warning: Always wear Safety Glasses when working with electronic modules and/or soldering.

The EVB is provided to quickly evaluate features of the MC33887 device with a simple bench-top setup:

1. Terminal blocks are provided for easy hook-up of power and loads. Strip wire ~ 0.25" before inserting into terminal block, then tighten down the screw until the wire is snug. Apply a voltage between 5V and 35V to the terminal labeled "12Vin", and apply the ground return to the terminal labeled "GND". The board has a built-in 5V regulator, and up to 500mA may be drawn from the terminal labeled 5Vout, if desired.

2. Jumpers are provided at the I/O 2X8 pin header to provide quick set-up of the enable, disables, and inputs. Alternatively, an uncommitted 2X20 pin header is provided to which the I/O may be wire wrapped in any desired pinout. This 2X20 pin header will then accept standard 40 pin flat ribbon cables to provide connection to various Metrowerks Development Systems.

3. To turn on a load in one direction, the inputs should be set as follows: D1 to ground, D2 to +5V, EN to +5V, IN1 to +5V (or left floating, as it has internal pull-ups to +5V), and IN1 to ground. To run current through the load in the opposite direction, reverse the logic states of IN1 and IN2. (Note: Logic One > 3.3V, Logic Zero <1.4V.)

4. To control the load via PWM, apply a PWM pulse train to either IN1 or IN2, while holding the other INput at a steady-state logic level. Swapping the signals applied to IN1 and IN2 will provide control in the opposite direction.

5. A Fault Status indicating LED is included on the board, and can be connected to the Fault Status flag output by placing a jumper over the two pins opposite the FS label on the 2X8 pin header. By so doing, the FAULT LED will light whenever the IC encounters any of the following fault conditions: Over Temperature, Shorted Load, Under Voltage. The LED will remain lit until the IC's fault status flag is reset by one of the following means: toggling D1, toggling D2, toggling EN, or removing then reapplying power.
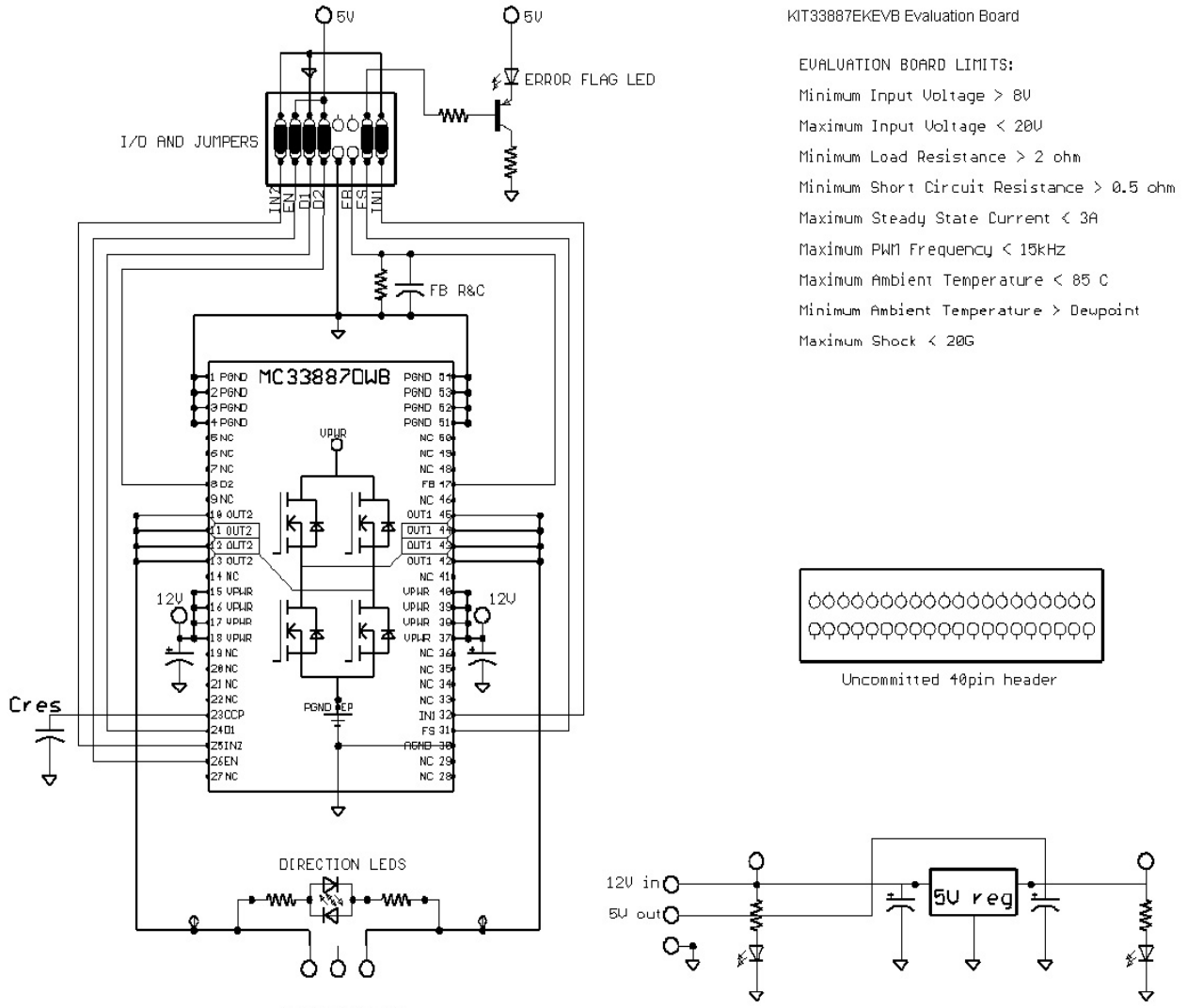
5   EVB Schematic
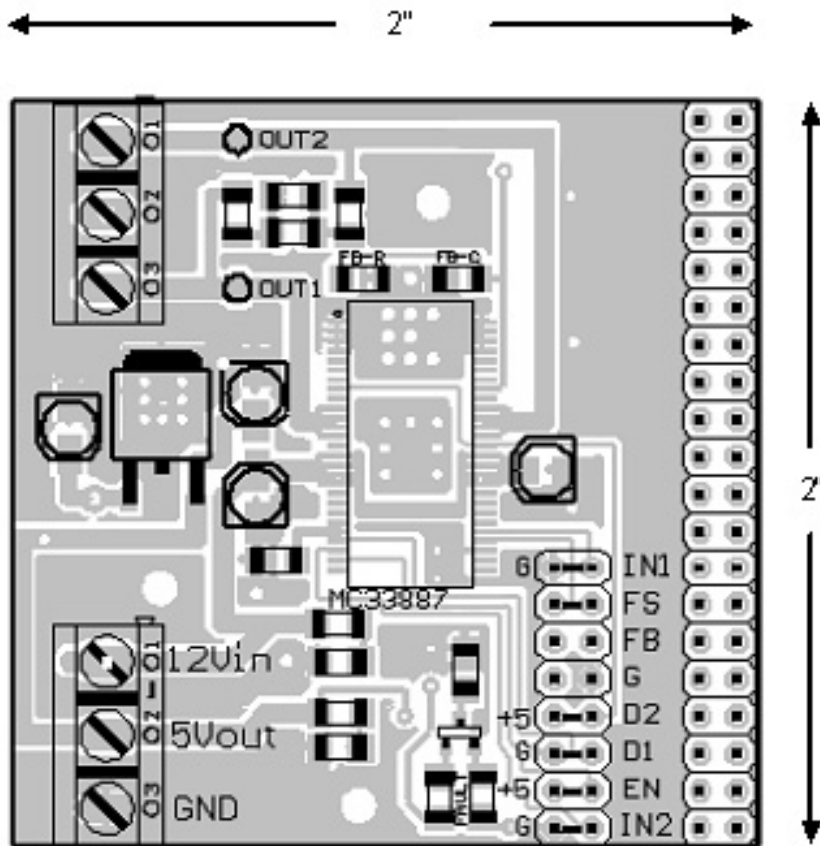

Figure 2. EVB Schematic
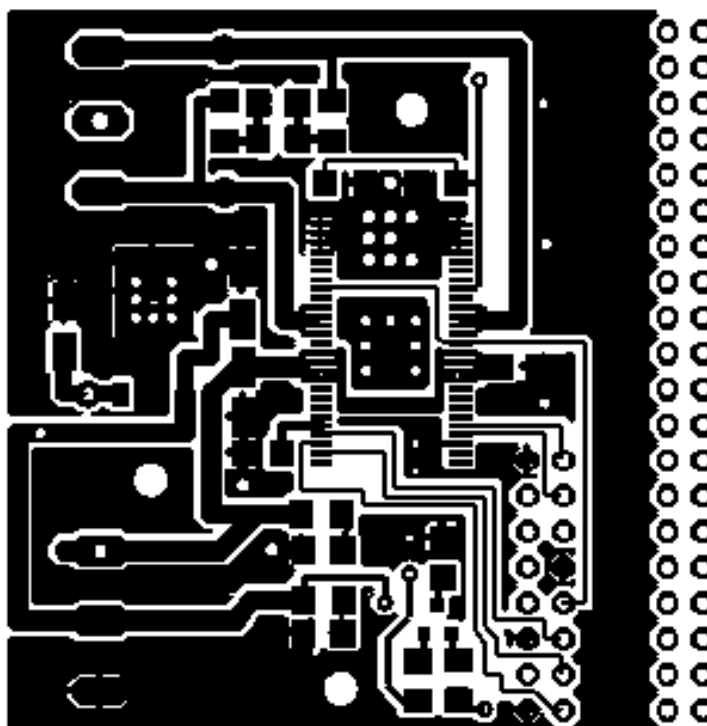
6 Board Layout

6.1 Assembly

Figure 3. Assembly

6.2 PCB Top Copper

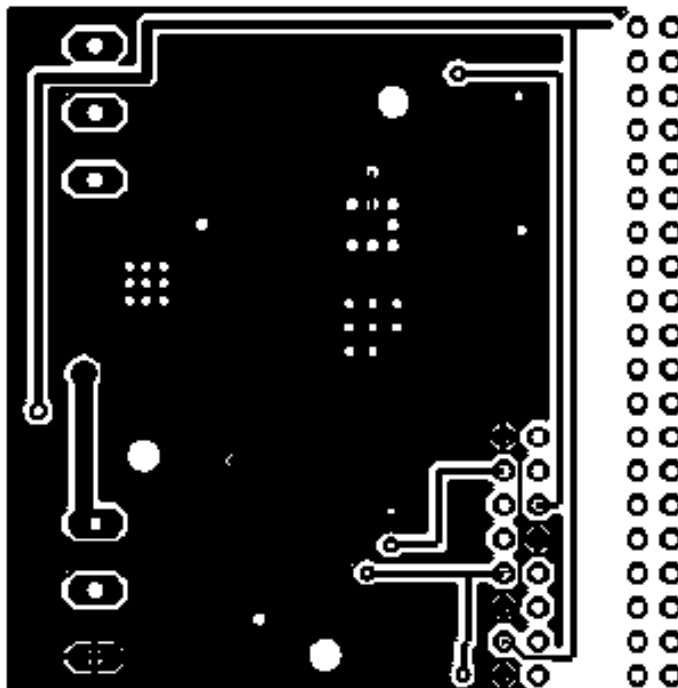**Figure 4. PCB Top Copper**

6.3 PCB Bottom Copper

Figure 5. PCB Bottom Copper

7   Bill of Material

Qty	Value	Device	Manufacturer
1		**MC33887EK**	**Freescale Semiconductor, Inc.**
2		AK300/3AK500/3A	ANY
1		PINHD -2X8	ANY
1		PINHD -2X20	AN;Y
3	1K Ohm	R -US_R1206	ANY
1	1uF 50v	C -USC1206	ANY
1	2K Ohm	R -US_R1206	ANY
4	5uF 50v	CPOL US153CLV-0405	ANY
1	15K Ohm	R -US_R1206	ANY
1	33nF 50v	C -USC1206	ANY
1	300 Ohm	R -US_R1206	ANY
1	500 Ohm	R -US_R1206	ANY
1	5V	7805DT 5VREG	Any
1	GRN	SMTLED	ANY
1	PNP SOT 23	MMBT3906LT1	ANY
2	RED	SMTLED	ANY
2		TP20r	ANY
2	YEL	SMTLED	ANY

8   References

Following are URLs where you can obtain information on other Freescale products and application solutions:

Description	URL
Data Sheet - MC33887	www.freescale.com/files/analog/doc/data_sheet/MC33887.pdf
Freescale's Web Site	www.freescale.com
Freescale's Analog Web Site	www.freescale.com/analog

9 Revision History

REVISION	DATE	DESCRIPTION OF CHANGES
1.0	11/2008	• Initial Release

How to Reach Us:

Home Page:
www.freescale.com

Web Support:
http://www.freescale.com/support

USA/Europe or Locations Not Listed:
Freescale Semiconductor, Inc.
Technical Information Center, EL516
2100 East Elliot Road
Tempe, Arizona 85284
+1-800-521-6274 or +1-480-768-2130
www.freescale.com/support

Europe, Middle East, and Africa:
Freescale Halbleiter Deutschland GmbH
Technical Information Center
Schatzbogen 7
81829 Muenchen, Germany
+44 1296 380 456 (English)
+46 8 52200080 (English)
+49 89 92103 559 (German)
+33 1 69 35 48 48 (French)
www.freescale.com/support

Japan:
Freescale Semiconductor Japan Ltd.
Headquarters
ARCO Tower 15F
1-8-1, Shimo-Meguro, Meguro-ku,
Tokyo 153-0064
Japan
0120 191014 or +81 3 5437 9125
support.japan@freescale.com

Asia/Pacific:
Freescale Semiconductor Hong Kong Ltd.
Technical Information Center
2 Dai King Street
Tai Po Industrial Estate
Tai Po, N.T., Hong Kong
+800 2666 8080
support.asia@freescale.com

For Literature Requests Only:
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