



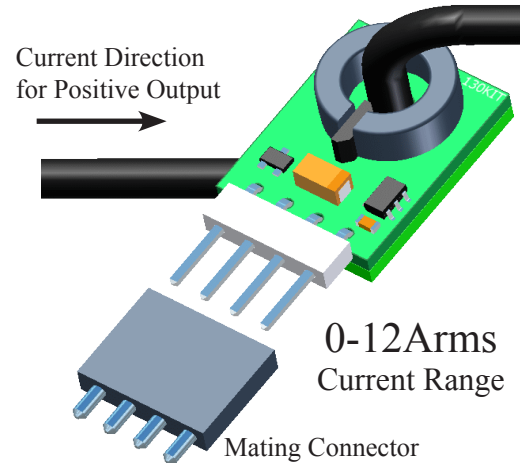
# AN\_130KIT - Asahi EQ-730L Hall Sensor Gapped Core, Open Loop, Current Sensor Application

## General Description

The AN\_130KIT provides an easy method of evaluating the Asahi EQ-730L Linear Hall sensor IC in a “gapped core” current sensor application. The AN\_130KIT includes the Asahi EQ-730L linear IC mounted in the nominal 1.25mm wide gap cut into a 10mm x 6 mm x 4mm Ferrite core. This configuration produces a nominal output sensitivity of 120mV/A. The full scale current range is 12Arms or 17A peak. The kit includes a +5V regulator, however the circuit will work down to 2.7VDC. With the input voltage below 5V, the Hall IC supply is no longer regulated and the sensitivity, supply current and full scale output range will reduce by an amount directly proportional to the supply voltage. For example; at 3V, the sensitivity is 3/5 of 120mV/A will be equal to 73mV/A

The Asahi EQ-730L has a very fast response time, < 5uS, thereby making it very useful for over current applications. The Asahi EQ-730L broadband output noise characteristic is low, < 5mVpp, to give an operating range of about 2000mV/2.5mV or about 800:1.

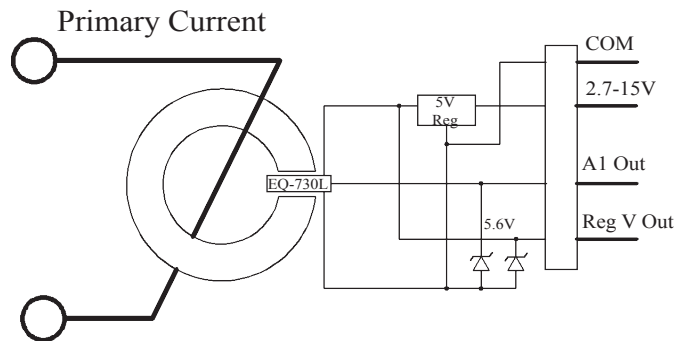
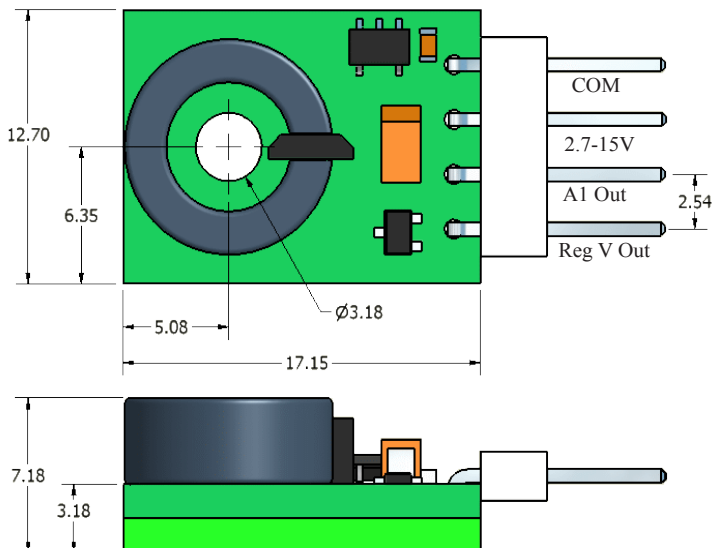
Included in the kit is a mating connector



AN\_130KIT with mating connector

## Features

- Measures AC or DC currents in wires up to 14AWG**
- Nominal Sensitivity: 120 ±35 mV/A for 5V Supply and 73 ±22 mV/A for 3V Supply (EQ-730L Magnetic Sensitivity of 130 ±30 mV/mT)**
- Nominal Quiescent Output Voltage: 2.5V+/- 0.20V @ Iprimary = 0A**
- Fast response time: <5uS**
- Wide bandwidth: DC to 300kHz (-3dB)**
- Low noise:< 5mVpp**
- Large Dynamic range > 800:1**
- Full scale output linear of 2.5V+/- 2.0V (With input supply voltage of 5.0 to 15VDC)**
- Supply current: ≈ 8mA**
- Supply voltage range of 2.7V to 15V (Below 5.0V, the voltage to the EQ-730L is unregulated)**
- Galvanic isolation between primary conductor and sensor**
- Interface Connector - 4 Pin 0.100” centers (Mating connector included)**
- Bi-directional sensing**
- Regulated Voltage Output (+5V) Pin (available for external use- up to 20mA)**



AN\_130KIT Electrical Block Diagram

## References:

- Hall IC Specification EQ-730L
- Ferrite Core Specification T 22G 10 06 04-02

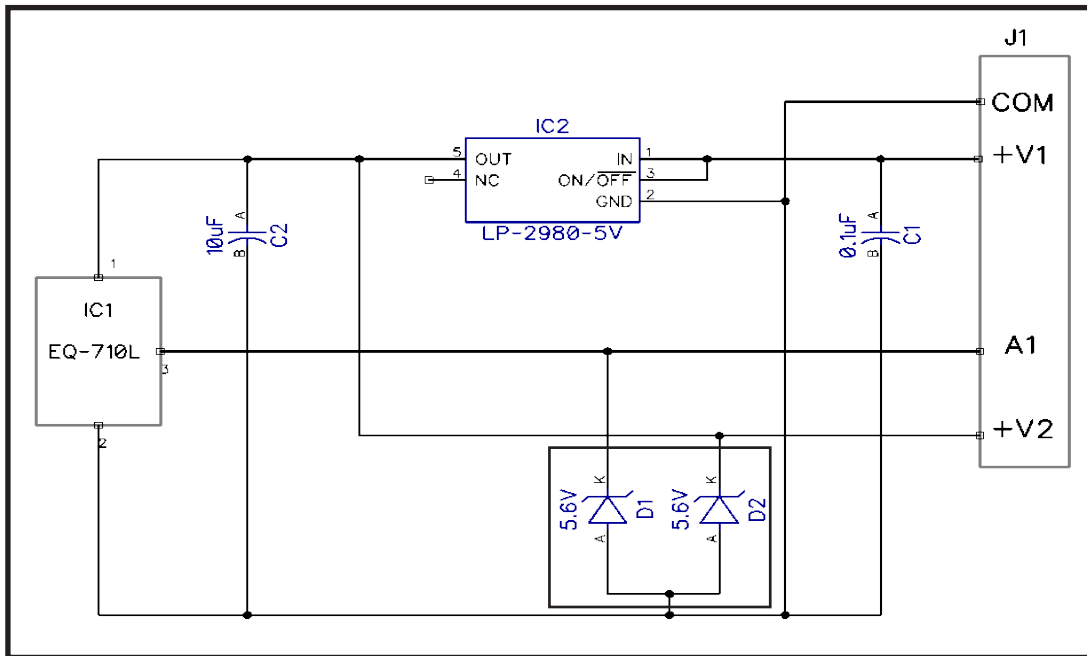
AN-130KIT Outline Drawing (all dimensions in mm)

Revision Date: Feb 17, 2011



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Schematic, AN\_130KIT



Parts List, AN\_130KIT

Item	Qty	P/N	Title	Reference(m)	Vendor	Vendor P/N
1	1	12900-2426-0	IC. Linear Hall Effect, +/- 130mV/mT, EQ-710L	IC1	GMW Associates	Asahi EQ-710L
2	1	12900-2413-0	IC REG LDO MICROPOWER SOT23-5	IC2	Digi-Key Corporation	LP2980IM5-5.0CT-ND
3	1	12900-2201-3	CAP CER .10UF 50V Y5V 0603	C1	Digi-Key Corporation	445-1324-2-ND
4	1	12900-2302-0	Diode, Zener, 5.6V, SMD	D1/D2	Digi-Key Corporation	AZ23C5V6-FDITR-ND
5	1	12900-2213-0	CAP TANTALUM 10UF 6.3V 10% SMD	C2	Digi-Key Corporation	495-2180-1-ND
6	1	12900-2709-0	Conn Header 4POS 0.100 R/A Tin	J1	Digi-Key Corporation	WM6004-ND
7	1	12900-2812-0	Core, Ferite, 10mm x 6 mm x 4mm 1.25mm Gap	T1	Ceramic Magnnetics, Inc.	T22G 10 06 04-02

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