

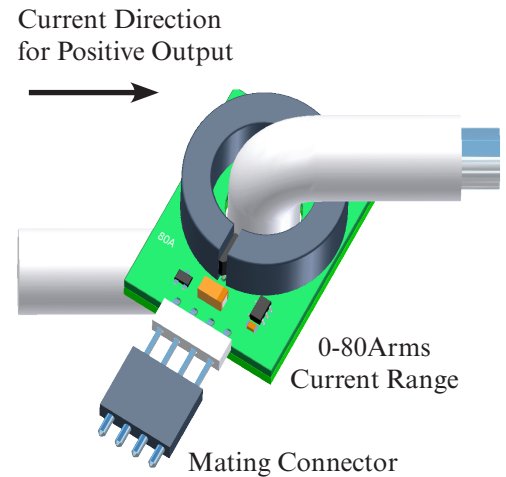
The AN_136KIT provides an easy method of evaluating the Asahi EQ-713L Linear Hall sensor IC in a “gapped core” current sensor application. The AN_136KIT includes the Asahi EQ-713L linear IC mounted in the nominal 1.25mm wide gap cut into a 22mm x 14 mm x 7mm Ferrite core. This configuration produces a nominal output sensitivity of 18mV/A. The full scale current range is 80A_{rms} or 115A 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 18mV/A will be equal to 11mV/A.

The Asahi EQ-713L has a very fast response time, < 5μS, thereby making it very useful for over current applications. The Asahi EQ-713L broadband output noise characteristic is low, < 5mV_{pp}, to give an operating range of about 2000mV/2.5mV or about 800:1.

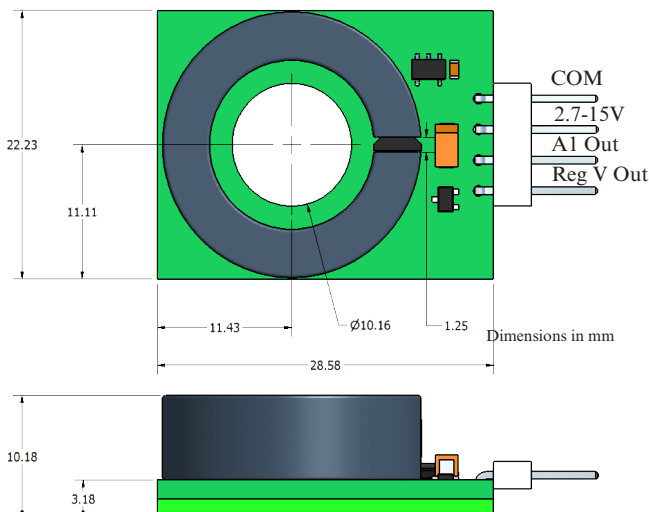
Features

- Measures AC or DC currents in wires up to 4AWG
- Nominal Sensitivity: 18 ±6 mV/A for 5V Supply and 11 ±3.5mV/A for 3V Supply (EQ-713L Magnetic Sensitivity of 20 ±5mV/mT)
- Nominal Quiescent Output Voltage: 2.5V ±0.10V at I_{primary} = 0A
- Fast response time: <5μS
- Wide bandwidth: DC to 100kHz (-3dB)
- Low noise:< 5mV_{pp}
- 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-713L 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)

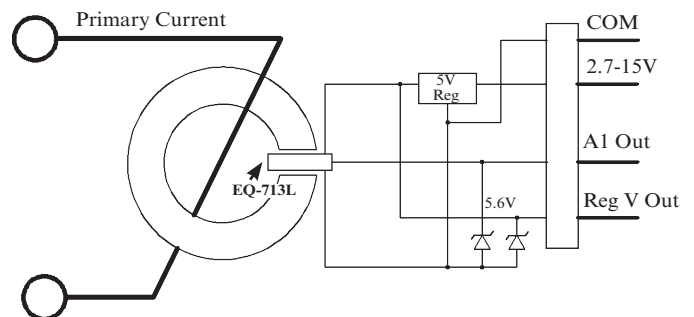
AN_136KIT with mating connector



Outline Drawings



Electrical Block Diagrams



References:

Hall IC Specification EQ-713L

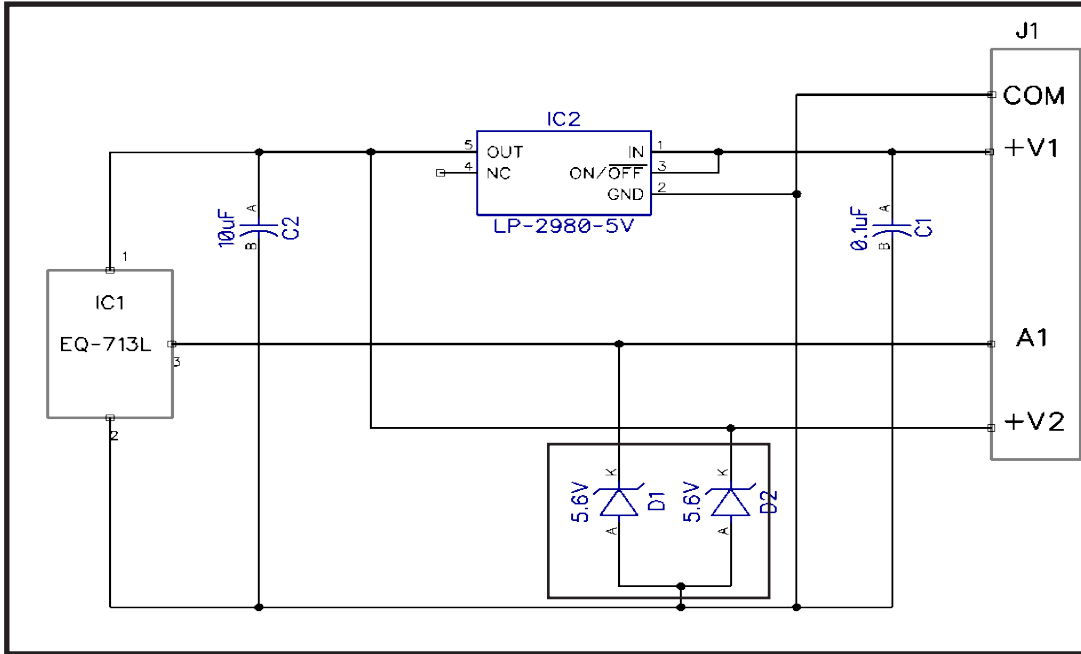
Ferrite Core Specification T 22G 22 14 07-05

Revision Date: 12 APR 2013

North American Distributor:

GMW Associates • 955 Industrial Road • San Carlos, CA 94070 • USA
Tel +1 (650) 802-8292 • Fax +1 (650) 802-8298 • sales@gmw.com • www.gmw.com

AN_136 Schematic



Parts List

Item	Qty	Title	Reference(m)	Vendor	Vendor P/N
1	1	IC, Linear Hall Effect, +/- 20mV/mT, EQ-713L	IC1	GMW Associates	EQ-713L
2	1	IC REG LDO MICROPOWER SOT23-5	IC2	Digi-Key Corporation	LP2980IM5-5.0CT-ND
3	1	CAP .1UF 50V CERAMIC X7R 0805	C1	Digi-Key Corporation	PCC1840TR-ND
4	1	Diode, Zener, 5.6V, SMD	D1/D2	Digi-Key Corporation	AZ23C5V6-FDITR-ND
5	1	CAP TANTALUM 10UF 6.3V 10% SMD	C2	Digi-Key Corporation	495-2180-1-ND
6	1	Conn Header 4POS 0.100 R/A Tin	J1	Digi-Key Corporation	WM6004-ND
7	1	Core, Ferite, 22mm x 14 mm x 7mm 1.25mm Gap	T1	Ceramic Magnetics, Inc.	T 22G 22 14 07-02

Revision Date: 12 APR 2013