Datasheet

EGHSM01Q01

Sensor specifications

The EGHSM01Q01 graphene Hall sensor takes advantage of graphene's electronic potential to enable a Hall sensor with high sensitivity and a strongly linear response to magnetic fields and temperature.

Absolute maximum ratings.

Parameter	Min	Max	Units
Supply voltage	-24	+24	V
Supply current	-5	+5	mA
Operating temperature *	-40	80	°C
Extended temperature	-55	125	°C
Storage temperature	-55	80	°C

*Operational testing up to 80°C, please contact us for details.

Recommended operating conditions

Parameter	Min	Typical	Max	Units
Supply current *		200	5000	µA

* A higher current supply will give a larger voltage output for a given sensitivity and field, based on V/AT sensitivity.

Performance characteristics

Ambient temperature = 300 K / 27°C, unless otherwise specified. I_N = 200 µA.

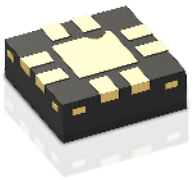
Parameter	Test conditions/notes	Min	Typical	Max	Units
Measurable field range		±2 (20)			T (kG)
Magnetic equivalent noise density	1 T field at 1 Hz, I = I_N		50	315	µT/√Hz
Spectral noise density	at 1 Hz, I = I_N		10	50	µV/√Hz
Magnetic equivalent thermal noise floor	Freq > Corner frequency		0.06		µT/√Hz
Sensitivity	at ambient temperature		800 (80)		V/A.T (mV/A.G)
		0.15	0.16		V/V.T
Linearity of Hall voltage	I = I_N, at ambient temperature, ± 1 T		0.2		%
Internal resistance	Between pin 1/2 and 5/6, and between pin 3/4 and 7/8, at field B = 0 T		5	8	kΩ
Ohmic Offset	B = 0 T		30	50	Ω
Temperature coefficient of offset	I = I_N		0.1		Ω/°C
Temperature coefficient of sensitivity	I = I_N, at ambient temperature		0.2		%/°C

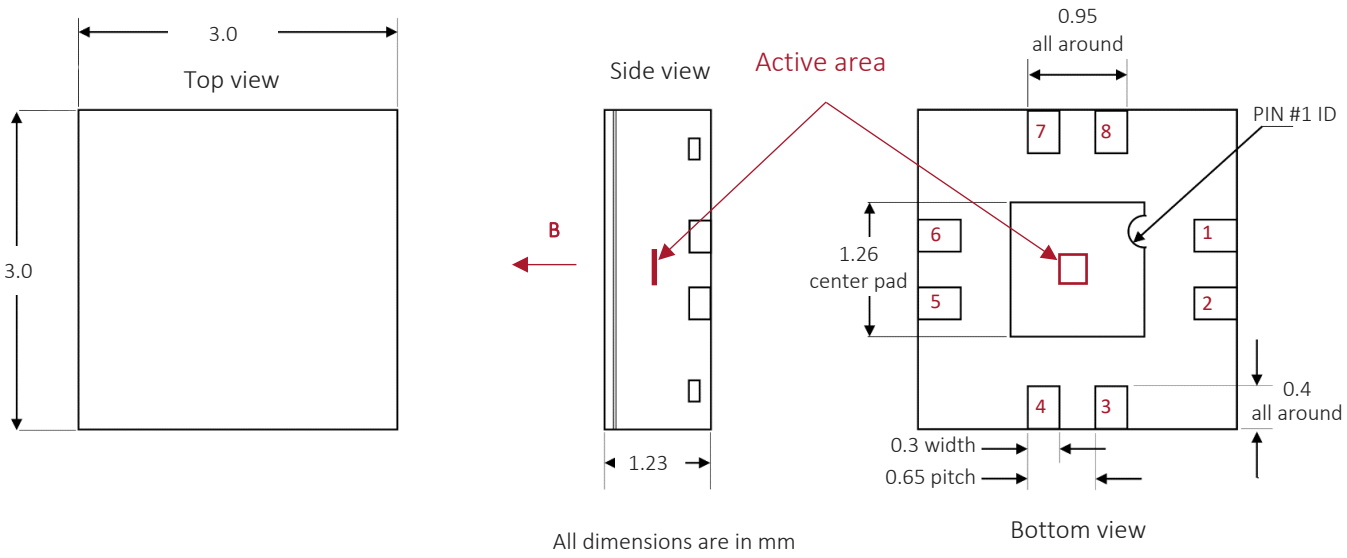
Packaging information

Package type: 8-pin QFN, Plastic, Ni-free, surface mount.

Recommended soldering method: reflow soldering with maximum peak temperature of 150-175°C and 40-80s maximum for temperature >138°C.

Active area: <100 µm x 100 µm located at the centre of the package and 450 µm from the top of the package.





All dimensions are in mm

Pin	Signal
1/2 or 5/6	A+
5/6 or 1/2	A-
3/4 or 7/8	B+
7/8 or 3/4	B-

Note 1: Pin 1 and 2, pin 3 and 4, 5 and 6, 7 and 8 are connected to each other within the package.

Note 2: Input voltage can be supplied with either polarity. Hall voltage polarity will depend on V_{IN} polarity and field polarity.

- A and B can be used as V_{IN} (input) or V_H (output) interchangeably.
- Polarity of each pair can also be flipped interchangeably.

For further information, please contact us:

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