

### Sensor specifications

The EGHSM01Q03 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		5	V
Supply current		2	mA
Operating temperature	-40	125	°C
Storage temperature	-55	150	°C

### Recommended operating conditions

Parameter	Min	Typical	Max	Units
Supply current *		1.2		mA
Supply voltage		3		V

\* 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.  $I_N = 200 \mu A$ .

Parameter	Test conditions/notes	Min	Typical	Max	Units
Measurable field range		$\pm 2$ (20)			T (kG)
Magnetic equivalent noise density	1 T field at 1 Hz, $I = I_N$			25	$\mu T/\sqrt{Hz}$
Spectral noise density	at 1 Hz, $I = I_N$			10	$\mu V/\sqrt{Hz}$
Magnetic equivalent thermal noise floor	Freq > Corner frequency		0.016		$\mu T/\sqrt{Hz}$
Sensitivity	At ambient temperature	400 (40)			V/A.T (mV/A.G)
		0.16			V/V.T
Linearity of Hall voltage	$I = I_N$ , at ambient temperature, $\pm 1$ 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			2.5	k $\Omega$
Offset	$B = 0$ T, $V_{in} = 3$ V	-10	$< \pm 6$	10	mV
Temperature coefficient of sensitivity	$I = I_N$		0.1		%/°C

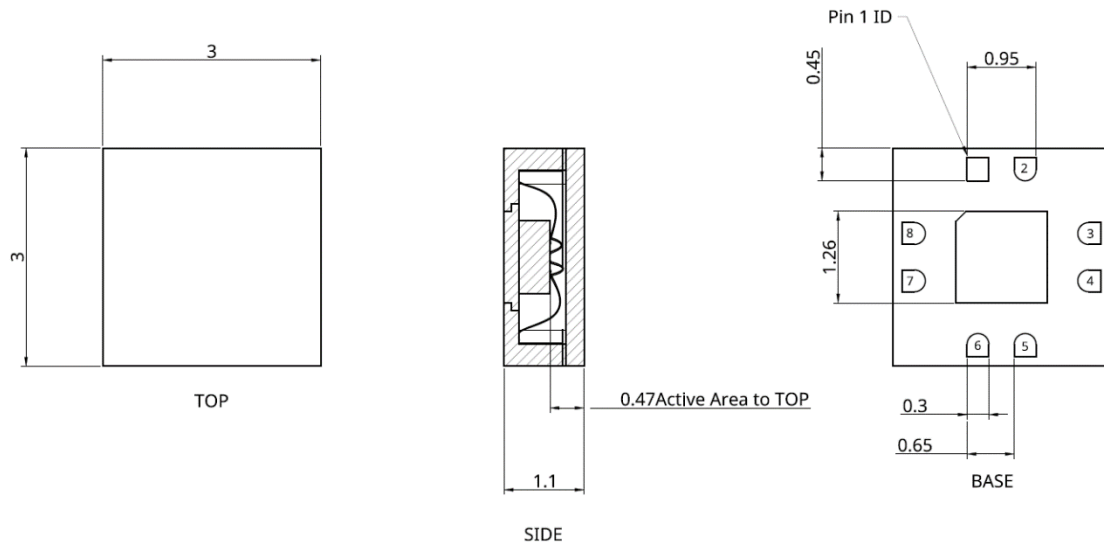
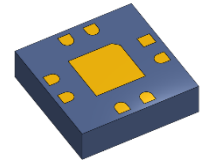


## Packaging information

**Package type:** 8-pin QFN, ceramic, 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:** <550 µm x 550 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:



[www.paragraf.com](http://www.paragraf.com)



[sales@paragraf.com](mailto:sales@paragraf.com)

