

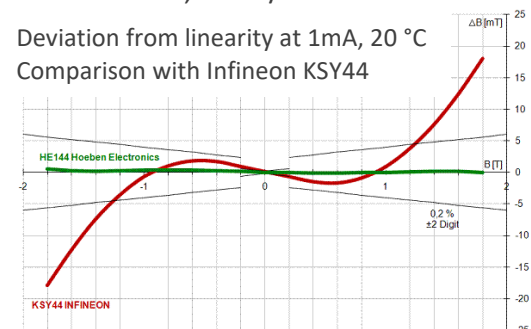


## Advanced Sensor Technology

# Linear High Precision Analog Hall Sensor HE144

## Features

- Large magnetic field range - below milli-Tesla to over 10 Tesla
- Very small linearity error - typically 0,1 % up to 1,5 T
- Optimized for low Hall sensor current - typical 1000 Ohm and 0,2 Volt/Tesla at 1 mA
- Very high sensitivity
- Low noise
- Low drift
- Low inductive zero component, low EMC pickup
- Low temperature coefficients
- Very wide operating temperature range
- Very low PHE, Planar Hall Effect Error
- Very flat miniature package
- Pin compatible with Siemens®/Infineon® KSY14 and KSY44



Our products are lead free devices, compliant with RoHS, REACH and 'Japan green' demands.

## Typical applications

- Magnetic field measurements
- Oil drill measurement
- Position and rotation sensing
- Distance and thickness measurements
- Aerospace
- Current and power measurement
- Multi-sensor and differential usage
- Control of motor flux strength
- Windmills
- Movement sensing



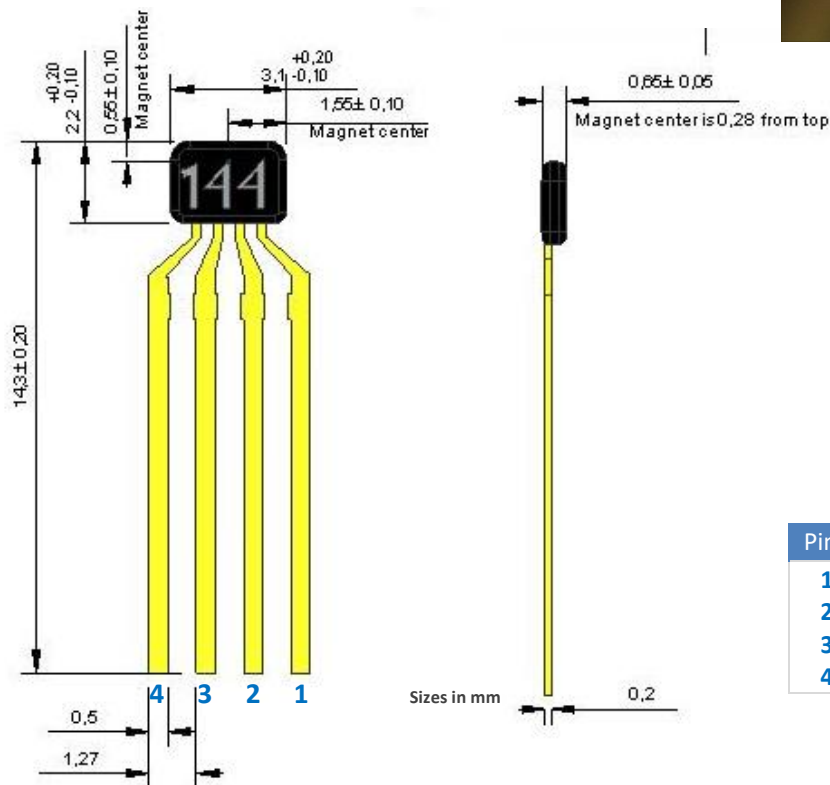
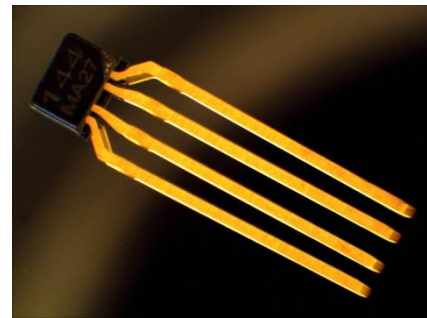
# Different packages HE144

## HE144P – Pin version

Standard component on lead frame.

Total length 14,3 mm, pitch 1,27 mm.

Body size 2,2 x 3,1 mm, max. thickness 0,70 mm.



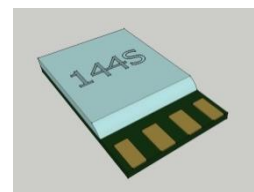
Pin	Function
1	- supply current
2	+ supply current
3	Hall voltage
4	Hall voltage

## HE144S – Solder pad version

Not a standard component. Only available on request.

Minimum order quantity applies.

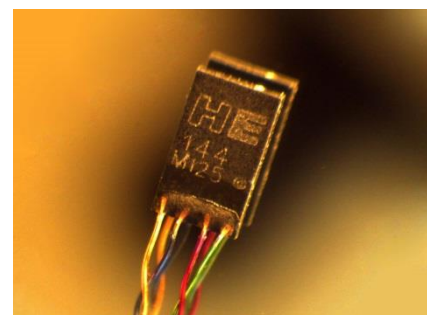
Size 3,0 x 5,0 mm, max. thickness 0,50 mm

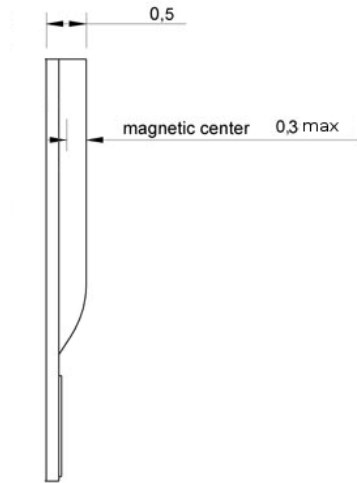
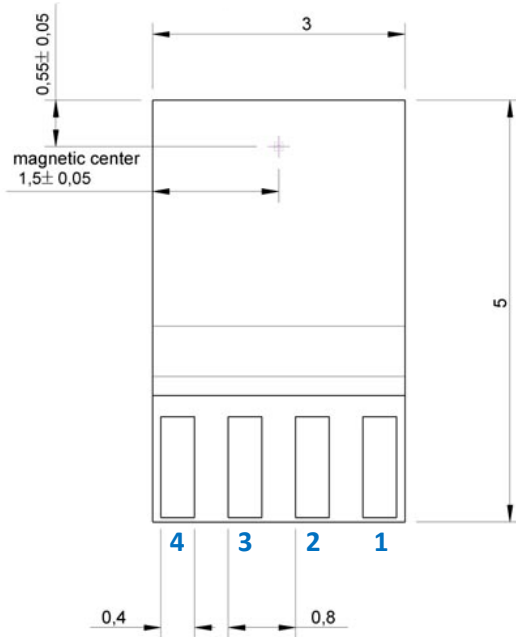


## HE144T – Wired version

Standard component. As the HE144S, but with fine pair twisted wires welded to the contacts. The standard version, HE144T, has a maximum temperature of 125 °C. Wire length is 20 cm, other lengths deliverable on request.

A version with high temperature wires, HE144HT, temperatures up to 200 °C, is available upon request.





Pin	Function	Wire color HE144T 125°C	Wire color HE144HT 200°C
1	- supply current	Green	Green
2	+ supply current	Red	Red
3	Hall voltage	Blue	Black
4	Hall voltage	Gold	Gold

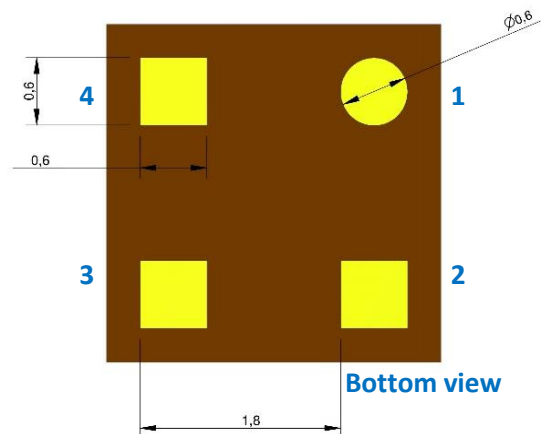
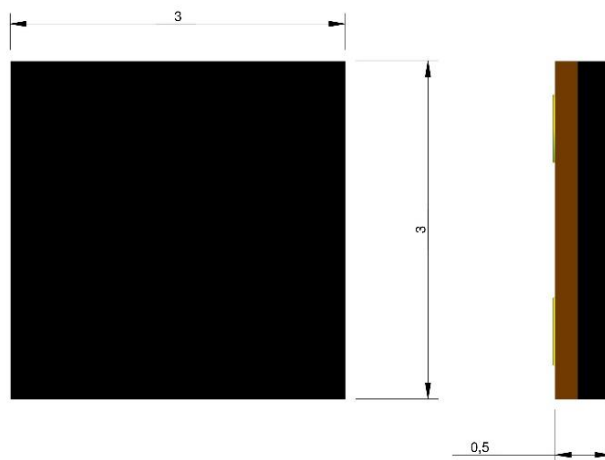
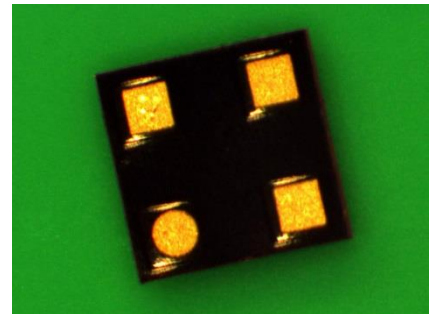
## HE144SH – SMD version

Standard component.

Size 3.0 x 3.0 mm, max. thickness 0,50 mm.

The pads are gold plated. Use normal soldering methods.

Pin 1 is the – supply current, pin 2 is the + supply current, pin 3 and 4 are the Hall outputs.



# Specifications HE144

Electrical specifications		Values
<b>Advised supply current</b>		0,1 to 2,0 mA recommended 1 mA*
<b>Open-circuit Hall voltage</b> B=1 T		typical 200 mV at I=1 mA min 180 to max 360
<b>Temperature coefficient of open-circuit Hall voltage</b> B=1 T, at 25°C		typical -0,015 %/K at I=1 mA min -0,02 to max 0,02
<b>Ohmic offset voltage</b> B=0 T		≤± 12 mV at I=1 mA typical 10 mV **
<b>Temperature coefficient of ohmic offset voltage</b> B=0 T		typical 40 ppm/K (6,7 μT/K) at I=1 mA
<b>Linearity of Hall voltage</b> at I=1 mA	B = ± 0 to 1 T	≤± 0,2 % typical ≤± 0,1 %
	B = ± 1 to 2,4 T	Limit not specified typical ≤± 0,2 %
<b>Supply side internal resistance</b> B=0 T		900 to 1250 Ω typical 1000 Ω
<b>Hall side internal resistance</b> B=0 T		900 to 1700 Ω typical 1000 Ω
<b>Thermal conductivity in air</b>		≥ 1,5 mW/K
<b>Thermal conductivity soldered</b>		≥ 2,2 mW/K
<b>Bandwidth</b>		Not specified (contact us)

\* Optimal signal to noise ratio and low power consumption

\*\* Variations within the same production batch are very small.

Absolute maximum ratings		Values
<b>Supply current</b>		5 mA
<b>Operating temperature</b>	<b>P-version</b>	-40 to +170 °C
	<b>SH-version</b>	-40 to +125 °C
	<b>T-version</b>	-40 to +125 °C
	<b>HT-version</b>	-40 to +200 °C

For very low (cryogenic down to a few Kelvin) or very high (over 200 °C) temperature applications, contact us for more information.