

Product Overview Hall Sensors HE444 / HE244 / HE144

3D Hall Sensor HE444: High End Measuring Technology, Test Engineering, Quality Control, NMR, MRI, MQR, ESR, Military



The 3D Hall Sensor HE444 was developed for military- and high end industry applications.

No matter if you need field strength measurements in micro Tesla range, or want to measure field strengths of 5 Tesla, the sensor covers the complete measurement range at highest temperature stability with one single sensor. The cubical body is made of ceramics and has a side length of 3.3 mm.

The solder contacts are designed in QFN style to make the soldering points accessible. The contacts can also be bonded. Our technology leads to the worldwide best results regarding temperature and drift behaviour.

Our Hall sensors (1 dimensional) HE244 and (3 dimensional) HE444 reach new, until now unreached dimensions regarding precision and range.

Measurements by CERN Switzerland:

The PHE Error (Planar Hall Effect Error) is about $2 \times E-5 = 20 \text{ PPM} = 0.002\%$. This means we have 3 axes available, x, y and z, which are nearly 100% independent of each other. The measurements have been done by CERN Switzerland.

For qualitative validation of the 3D Hall sensors HE444, you can also use the datasheet and the diagrams of the HE244 sensor. The internal connections and the data are identical, in the 3D Hall sensor HE444 the same element is 3 times present. This means you can also indirectly test the 3D Hall sensor HE444 1 dimensional with the HE244.

Availability:

The 1D sensor HE244 is in SMD and twisted pair version ex stock available. The 3D Hall Sensor HE444 will be available in January 2012 in SMD and twisted pair version.



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1D Hall Sensor HE244: High End Measuring Technology, Test Engineering, Quality Control, Sensor Technology, Military



The 1D Hall sensor HE244 was developed for military- and industrial high end applications. The sensor has a very low offset and a very small offset drift.

See this link with measurements: [diagrams HE244 Hall sensor](#). This document contains graphic charts for linearity, temperature coefficient, offset drift, offset voltage and frequency response. These measurements have been done by Projekt Elektronik in Berlin.

As you can easily see on the diagrams, nearly all important parameters of the HE244 are much better than the values of all other on the market available Hall sensors.

Here are the most important parameters from the measurement diagrams HE244 (also valid for HE444)

Linearity Error: 0,1 – 0,2 x E-2	Temperature Coefficient: 0,15 x E-3 / Kelvin	Frequency Response: 0 till 100 kHz guaranteed!
Offset-Drift: 0,25 x E-6 Volt / Kelvin	Offset-Voltage 1 mA: 10 x E-6 Volt	

Availability:



The HE244 sensor is in SMD and twisted pair version ex stock available. It is possible to develop a PIN-version on customer request, but for that is a minimum order quantity of 5000 pieces necessary!



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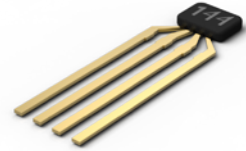


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1D Hall Sensor HE144: ROHS replacement for the obsolete Siemens, Infineon Hall Sensors KSY14 and KSY44



The HE144 was developed as high end replacement for obsolete Hall sensors KSY14 and KSY44 from Infineon. The HE144 sensor has a very low noise and a very high linearity, also at magnetic fields of for example 2.4 tesla. See this link with measurements: [more informations HE144 Hall sensor](#).

The frequency range is guaranteed till 100 kHz. Presumably the frequency range reaches till to MHz range, though this was not measured yet.

At a sensor current of 1 mA, there is 0.2 volt / Tesla available at the output of the sensor.

Availability:

The HE144 sensor is available in the identical enclosure version as the KSY14 and KSY44 from Infineon ex stock available. Starting May 2012 the development of a SMD version is planned.

Integration of current source, amplifier etc. on customer demand

At the moment, other circuits (current source, amplifier etc.) are not integrated in the chip. However, this can be done in cooperation with the customer anytime, on project base. We can easily reach a temperature range of around -200 °C up to +240 °C where the chip still functions well.

When using other chips (for example to integrate current source and amplifier), the temperature range will probably be restricted from -40 °C to max. +240 °C. We have access to precise high-temperature technologies for the current source and amplifier. On demand, the integration of current source, amplifier etc., on project base, is possible with all Hall sensors anytime.



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References:

- ASML Netherlands
- Projekt Elektronik Berlin
- Siemens Nuremberg
- TQ-Systems
- Kuka Robotics
- RoboDrive GmbH
- MEAS GmbH
- Jewon Security Ltd South Korea
- Pilz GmbH
- IFW Leibnitz-Institut Dresden
- Roland Electronic GmbH
- IFT Ing. Ges. f. Triebwerkstechnik
- STS Spezial-Transformatoren Stockach
- Kontronik
- Roland Elektronik
- Fraunhofer Institut Stuttgart
- Universität Augsburg
- Universität der Bundeswehr München
- Technische Universität Darmstadt
- Technische Universität Dresden
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