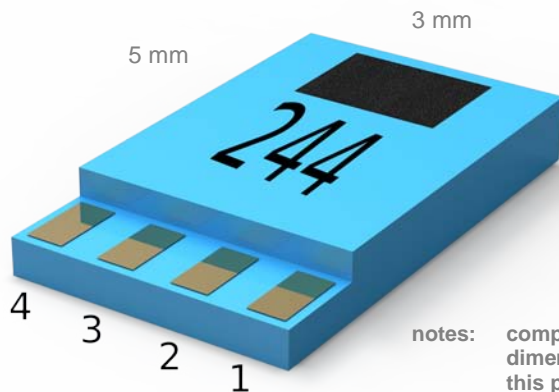


HE244 series Analog Hall sensor

moves you from the percent-range to the ppm-range



Very low offset
Very low zero drift
Very high range

1-, 2+ Supply current
3, 4 Hall voltage

notes: component laser marking '244', or user defined, with date code, dimensions in mm, thickness approximately 0.7 to 0.8 mm, this picture shows the shows solder pad version

Features

- Ultra low zero drift
- Very low offset voltage
- Large range, easily over **5 Tesla**
- Pin-out as Infineon® KSY14, KSY44
- Very small linearity error
- Low TC of sensitivity and drift
- Low noise
- Low EMC pickup
- High sensitivity
- Very low Planar Hall Effect Error (PHE)
- Wide operating temperature range
- Very flat miniature package
- Low inductive zero component
- No breakdown in strong fields
- Linearity and TC do not depend on sensor current

Typical applications

- Current and power measurement with high resolution
- Homogenous field measurement
- Magnetized and demagnetized cores
- Magnetic field measurement
- Rotation sensing
- Position sensing
- Measurement of distances
- Measurement of diaphragm
- 3D compass
- Movement sensing
- Measurement of pressure
- Control of motors
- NMR, MRI (nuclear spin)

The enclosure is pin-out compatible with the Infineon® KSY14 and KSY44 Hall sensors. These are "green" devices, RoHS, lead free, and compliant with Japanese demands.

Wired version

The HE244 is standard available in a version with fine twisted pair cables welded to the contacts. Due to the polyurethane isolation the maximum temperature is limited to 100 °C.



PTFE versions able to handle 150 °C can be delivered on demand (minimum order quantity of 100 pieces applies).

Pin	Function	Color
1	- supply current	Green
2	+ supply current	Red / Purple
3	hall voltage	Blue
4	hall voltage	Yellow / Gold

Pin version

The HE244 can also be delivered with pins welded to the contacts. Pin-out and function compatible with the Siemens / Infineon KSY14 and KSY44. Temperature limit 150 °C (minimum order quantity applies).

High temperature version

The HE244 can be delivered in high temperature versions on special demand (minimum order quantities apply).

Order codes

Version	Order code	More information
Solder pads	HE244S	standard
Twisted pair	HE244T	standard, length is 20 cm
Pin	HE244P	minimum order quantity of 5k pieces
High temperature	not defined yet	

Standard items are delivered from stock.

Electrical parameters

Absolute Maximum Ratings (limit values)

Parameter	Symbol	Value	Unit
Operating temperature range ¹	T_A	-40 to +150	°C
Storage temperature rate ¹	T_{stg}	-50 to +160	°C
Supply current ¹ , note: see Advised current	I_1	10	mA

Characteristics, ($T_A = 25^\circ\text{C}$), preliminary and subject to change

Thermal Conductivity in air	G_{thA}	≥ 1.5	mW/K
Thermal Conductivity soldered	G_{thC}	≥ 2.2	mW/K
Nominal Supply Current, note: see Advised current	I_{1N}	5	mA
Advised supply current (S/R optimal, range)	I_{1A}	0,1 to 3	mA
Open-circuit Sensitivity	K_{B0}	90..190	V/AT
Open-circuit Hall Voltage $I_1 = I_{1N}, B = 0.1 T$	V_{20}	45...95 typical 50	mV
Temperature coefficient of the open-circuit Hall voltage, $I_1 = I_{1N}, B = 0.2 T @ 25^\circ\text{C}$	TC_{V20}	0..- 0.03 typical -0.015	%/K
Ohmic Offset Voltage, $I_1 = 1 mA, B = 0 T$	V_{R0}	$\leq \pm 200$ typical $< \pm 100$	μV
Temperature coefficient of the Ohmic Offset Voltage, $I_1 = 1 mA, B = 0 T$	TC_{VR0}	± 10 typical $< \pm 2$	$\mu\text{T/K}$
			typical $< \pm 0,25$
Maximum change of the Ohmic Offset Voltage within the temperature range	$ \Delta V_{R0} $	typical 50 to 100	μV
Drift of Ohmic Offset Voltage 0.1 to 1.0 sec. after power up, $I_1 = I_{1N}, B = 0 T$	dV_0		mV

Drift of Ohmic Offset Voltage from 1.0 sec to 3 min. after power up, $I_1 = I_{1N}$, $B = 0 T$	ΔV_0		mV
Supply side internal resistance, $B = 0 T$	R_{10}	450...650 typical 500	Ω
Temperature coefficient of the Supply side internal resistance, $B = 0 T$	TC_{R10}	typical 0.35	%/K
Hall side internal resistance, $B = 0 T$	R_{20}	450...850 typical 500	Ω
Temperature coefficient of the Hall side internal resistance, $B = 0 T$	TC_{R20}	typical 0.35	%/K
Linearity of Hall voltage $B = 0...0.5 T$, $I_1 = 1 mA$	$\Delta V_{20-0.5}$ (or $F_{L-0.5}$)	$\leq \pm 0.2$ typical $\leq \pm 0.1$	%
Linearity of Hall voltage $B = 0...1.0 T$, $I_1 = 1 mA$	ΔV_{20-1} (or F_{L-1})	$\leq \pm 0.2$ typical $\leq \pm 0.1$	%
Linearity of Hall voltage $B = 0...2.4 T$, $I_1 = 1 mA$	ΔV_{20-2} (or F_{L-2})	limit not specified typical $\leq \pm 0.2$	%
Bandwidth (-3dB point)	B	not specified yet, guaranteed 100 kHz, typical much more, into several MHz	kHz
Rise time (to <>%)		not specified yet	
Noise figure ^{III}	F	≤ 10	dB

^I In fact capable of a much lower temperatures, contact us for more information

^{II} Allowed and advised to be much smaller

^{III} At advised current, contact us for advise

All data is subject to change without prior notice, future versions may be improved



Manufacturer

The Netherlands
Tel: +31 65 159 0081
Fax: +31 84 741 3475
Email: info@hoeben.com
www.hoeben.com



Distributor

Germany
Tel: +49 7243 71578 10
Fax: +49 7243 71578 55
Email: info@clevertrade.biz
www.clevertrade.biz