

Surface plating

Standard RoHS Gold plating is used. Gold plating ensures good shelf lives, and prevents tin whiskers. Other plating possibilities, possible on demand but minimum order quantities apply:

- RoHS gold plated is the standard plating
- RoHS matte tin, electrochemical plated
- RoHS tin dipped, tin-silver-copper, giving a thick plating layer
- Leaded (non-RoHS), electro-chemical plated
- Leaded (non-RoHS), dipped, giving a thick plating layer

SMD version

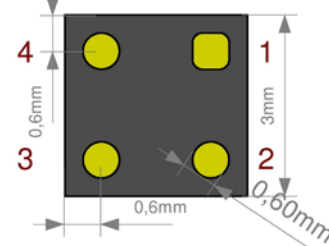
Top view



The Hall sensors are also available in a small BGA-like (ball-less) package. The thickness of the component is approximately 0.6 mm. Thickness can be adjusted to customer requirements, down to 0.4 mm. Thermal data (see below) does not apply here. Use BGA soldering methods.

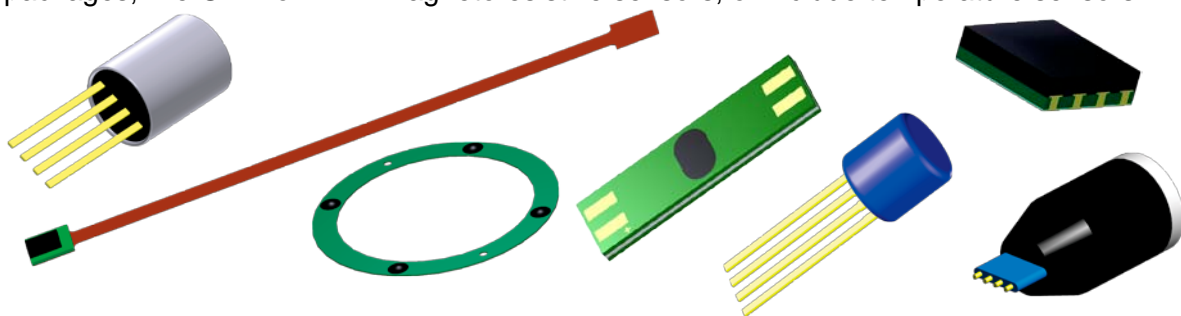
The pads are gold plated. The parts are RoHS. Use normal soldering methods. Pin1 is the – supply current, pin 2 is the + supply current, pin 3 and 4 are the Hall outputs.

Bottom view



Other packages and sensors

We can create any package you want, we can design and create packages, also specials and ceramics, even with 0.4 mm thickness. And we can use other chips (dice) in our non-magnetic packages, like GMR or AMR magnetoresistive sensors, or include temperature sensors.



Order codes

Version	Order code	More information
Pin	HE144	standard, cross to Siemens / Infineon KSY14 and K44
SMD	HE144S	BGA-like, ball-less, minimum order quantity of 1k applies
Pin	HE10	cross to Siemens / Infineon KSY10, minimum order quantity of 20k pieces applies

Standard items are delivered from stock.



Electrical parameters

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Operating temperature range ¹	T_A	-40 to +175	°C
Storage temperature rate ¹	T_{stg}	-50 to +180	°C
Supply current ^{II} , note: see Advised current	I_1	10	mA

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

Thermal Conductivity in air	G_{thA}	≥ 1.5 typical 1.8	mW/K
Thermal Conductivity soldered	G_{thC}	≥ 2.2 typical 3.4	mW/K
Nominal Supply Current, note: see Advised current	I_{1N}	5	mA
Advised supply current (S/R optimal, range)	I_{1A}	0 to 1	mA
Open-circuit Sensitivity ^{III}	K_{B0}	180..370	V/AT
Open-circuit Hall Voltage ^{IV} $I_1 = I_{1N}, B = 0.1 T$	V_{20}	90...185 typical 100	mV
Temperature coefficient of the open-circuit Hall voltage, $I_1 = I_{1N}, B = 0.2 T @ 25^\circ\text{C}$	TC_{V20}	± 0.02 typical -0.003	%/K
Ohmic Offset Voltage ^V , $I_1 = I_{1N}, B = 0 T$ <i>Note: temporary spec, to be changed to typical $\leq \pm 5 \text{ mV}$ in later versions</i>	V_{R0}	$\leq \pm 60$ typical 50 mV	mV
Temperature coefficient of the Ohmic Offset Voltage, $I_1 = I_{1N}, B = 0 T$	TC_{VR0}	± 0.2 typical $\sim -0.06 @ 25^\circ\text{C}$	%/K
Maximum change of the Ohmic Offset Voltage within the temperature range	$ \Delta V_{R0} $	± 2 typical $\pm 0.3 @ 0-50^\circ\text{C}$	mV
Drift of Ohmic Offset Voltage, $I_1 = I_{1N}, B = 0 T$	0.1 to 1.0 sec. after power up	dV_0	not specified
	1.0 sec to 3 min. after power up	ΔV_0	not specified
Supply side internal resistance ^{VI} , $B = 0 T$	R_{10}	900...1250 typical 1000	Ω
Temperature coefficient of the Supply side internal resistance, $B = 0 T$	TC_{R10}	typical 0.35	%/K
Hall side internal resistance ^{VII} , $B = 0 T$	R_{20}	900...1700 typical 1000	Ω
Temperature coefficient of the Hall side internal resistance, $B = 0 T$	TC_{R20}	typical 0.35	%/K
Linearity of Hall voltage	$B = 0 \dots 0.5 T$	$\Delta V_{20-0.5}$ (or $F_{L-0.5}$)	$< \pm 0.2$ typical $\leq \pm 0.1$
	$B = 0 \dots 1.0 T$	ΔV_{20-1} (or F_{L-1})	$\leq \pm 0.2$ typical $\leq \pm 0.1$
	$B = 0 \dots 2.4 T$, $I_1 = 1 \text{ mA}$	ΔV_{20-2} (or F_{L-2})	limit not specified typical $\leq \pm 0.2$
Bandwidth (-3dB point)	B	tested up to 100 kHz, range several MHz	kHz
Rise time		not specified yet	
Noise figure ^{VIII}	F	≤ 10	dB

¹ In fact capable of a much larger temperature range, contact us for more information

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- II Allowed and advised to be smaller than 5 mA, leads to better noise behaviour and less drift
 - III Data subject to change
 - IV Data subject to change
 - V Will be improved in later parts, first series are typical 10 mV@1mA, but with very low temperature drift
 - VI Tracking devices follow delivered values typically within ± 30 milliOhm
 - VII Tracking devices follow delivered values typically within ± 30 milliOhm
 - VIII At advised current, contact us for advise

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



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