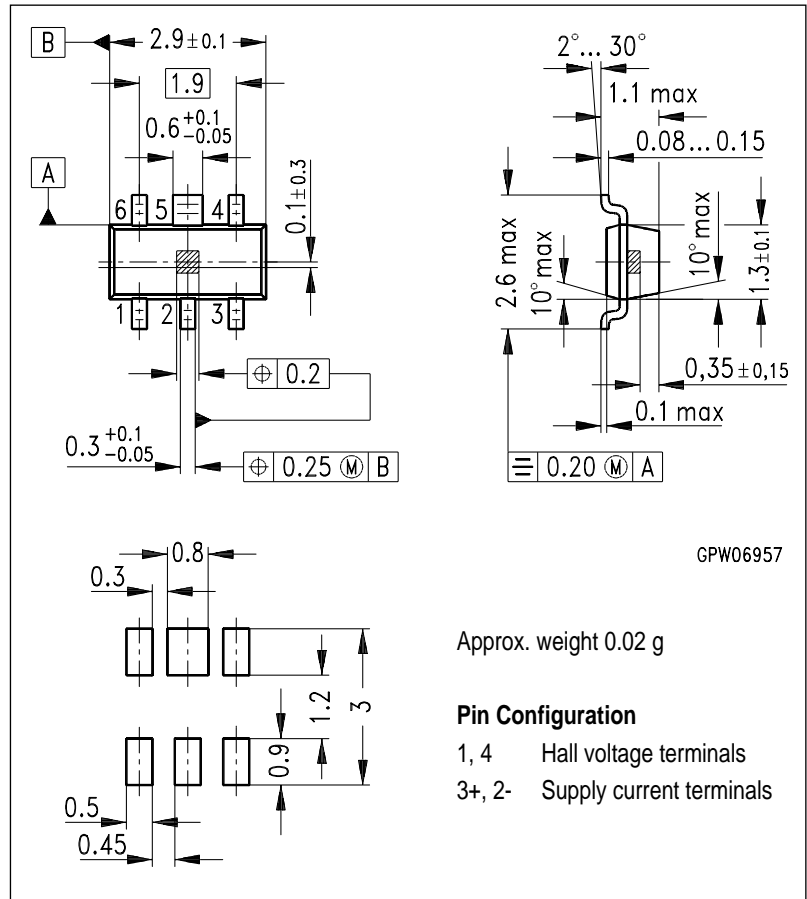


### Features

- Hall sensor on Cu-leadframe for SMT-technology, MW-6 package
- High sensitivity
- High temperature range
- Small linearity error
- Low offset voltage
- Low TC of sensitivity resistances
- This Hall sensor combines the advantages of non-magnetic leadframe and SMT capability

### Typical applications

- Rotation and position sensing
- Current and power measurement
- Magnetic field measurement
- Control of brushless DC motors



Type	Marking	Ordering Code
KSY 16	s16	on request

The KSY 16 is an ion-implanted Hall sensor in a monocrystalline GaAs-material, built into an SMT package (MW-6). It is outstanding for a high magnetic sensitivity and low temperature coefficients. The  $0.35 \times 0.35$  mm<sup>2</sup> chip is mounted onto a non-magnetic leadframe. The active area is placed approx. 0.45 mm below the surface of the package.

## Maximum ratings

Parameter	Symbol	Value	Unit
Operating temperature	$T_A$	- 40...+ 150	°C
Storage temperature	$T_{stg}$	- 50...+ 160	°C
Supply current	$I_1$	7	mA
Thermal conductivity <sup>1)</sup>	$G_{thC}$	$\geq 2.2$	mW/K

## Characteristics ( $T_A = 25\text{ °C}$ )

Nominal supply current	$I_{1N}$	5	mA
Open-circuit sensitivity	$K_{B0}$	190...260	V/AT
Open-circuit Hall voltage $I = I_{1N}, B = 0.1\text{ T}$	$V_{20}$	95...130	mV
Ohmic offset voltage $I = I_{1N}, B = 0\text{ T}$	$V_{R20}$	$\leq \pm 20$	mV
Linearity of Hall voltage $B = 0...0.5\text{ T}$ $B = 0...1\text{ T}$	$F_L$ $F_L$	$\leq \pm 0.2$ $\leq \pm 0.7$	% %
Input resistance $B = 0\text{ T}$	$R_{10}$	900...1200	$\Omega$
Output resistance $B = 0\text{ T}$	$R_{20}$	900...1200	$\Omega$
Temperature coefficient of the open-circuit Hall voltage $I_1 = I_{1N}, B = 0.1\text{ T}$	$TC_{V20}$	$\sim - 0.03...- 0.07$	%/K
Temperature coefficient of the internal resistance $B = 0\text{ T}$	$TC_{R10, R20}$	$\sim 0.1...0.18$	%/K
Change of offset voltage within the temperature range <sup>2)</sup>	$ \Delta V_{R0} $	$\leq 2$	mV

## Connection of a Hall sensor with a power source

Since the voltage on the component must not exceed 10 V, the connection to the constant current supply should only be done via a short circuit by-pass. The by-pass circuit-breaker shall not be opened before turning on the power source. This is to avoid damage to the Hall sensor due to power peaks.

1) Thermal conductivity chip-ambient when mounted on alumina ceramic 15 mm × 17 mm × 0.7 mm

2) AQL: 0.65