

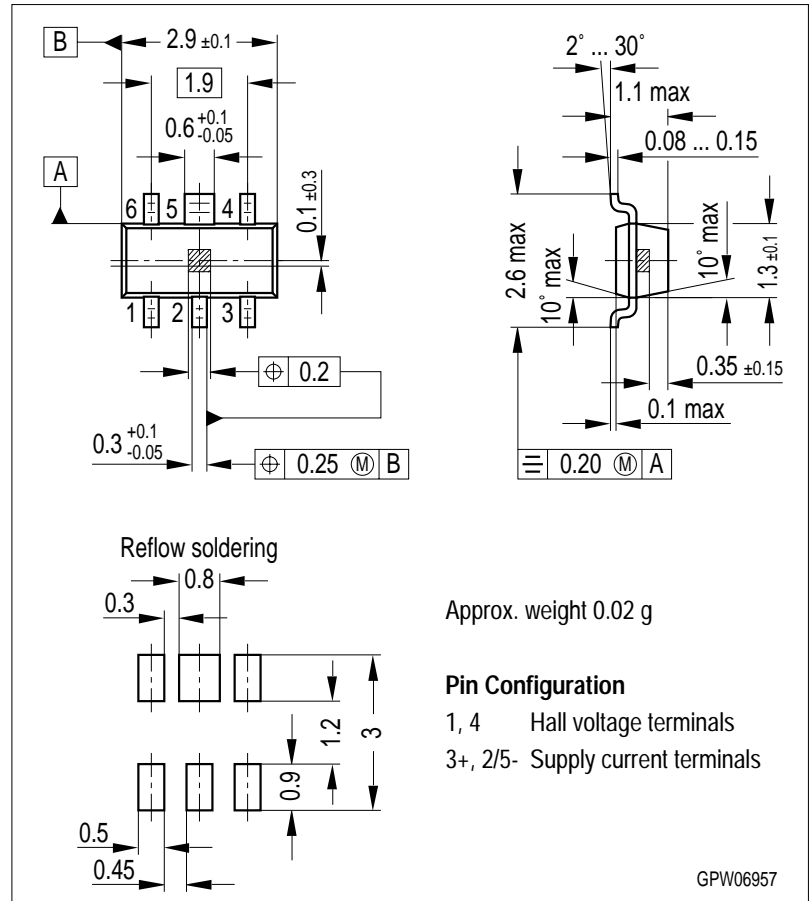
Version 2.0

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



Dimensions in mm

Type	Marking	Ordering Code
KSY 16	s16	Q62705-K338

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 $0.35 \times 0.35 \text{ mm}^2$ chip is mounted onto a non-magnetic leadframe. The active area is placed approx. 0.45 mm below the surface of the package.

Absolute Maximum Ratings

Parameter	Symbol	Limit Values	Unit
Operating temperature	T_A	- 40...+ 150	°C
Storage temperature	T_{stg}	- 50...+ 160	°C
Supply current	I_1	7	mA
Thermal conductivity ¹⁾	G_{thC}	≥ 2.2	mW/K

Electrical 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	Ω
Output resistance $B = 0\text{ T}$	R_{20}	900...1200	Ω
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 ²⁾	$ \Delta V_{R0} $	≤ 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