

The MH482IVK is a magnetic field sensor for accurate measurements in harsh environments. It combines an integrated Hall-effect sensor with on-chip signal conditioning electronics to achieve an unsurpassed accuracy and dynamic range.

In a CMOS integrated Hall IC sensitivity varies with processing parameters of silicon. For an accurate sensitivity this parameter needs to be trimmed and coarse and fine trim bits are available. The temperature coefficient of the sensitivity needs to be trimmed as well to achieve 200ppm/°C

The on-chip memory is EEPROM that allows up to 1,000 write/erase cycles at factory trimming or in a customer application. Programming can be done using a normal 5V supply; high programming voltage is generated on-chip.

Features and Benefits

- Fully integrated Hall-effect based Magnetic Field sensor
- No internal magnetic concentrator
- User gain and gain tc trimming possible
- Internal Vcc/2 reference
- Fast response time
- RoHS compliant 2011/65/EU and Halogen Free

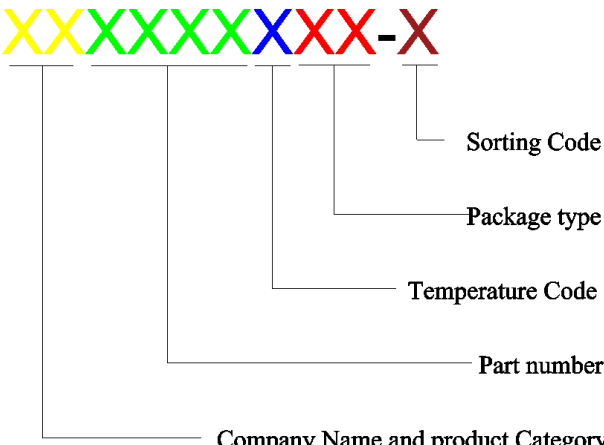
Applications

- BLDC Motor Current Sensing
- Over-current protection
- Ground-Fault detection
- Joystick
- Rotary Controls
- Linear / Rotary Position Sensors
- Solar / Wind power junction boxes
- DC/AC Current Sensor Application domain

Major markets

- Industrial / agricultural motor controllers
- Electric vehicles (including forklifts, golf carts, trains, IC process is automotive. Assembly, FT, standards, etc...)
- Power conversion / battery charging Current sensor photos

Ordering Information

	<p>Company Name and Product Category MH:MST Hall Effect/MP:MST Power IC</p> <p>Part number 181,182,183,184,185,248,249,276,477,381,381F,381R,382..... If part # is just 3 digits, the fourth digit will be omitted.</p> <p>Temperature range E: 85 °C, I: 105 °C, K: 125 °C, L: 150 °C</p> <p>Package type UA:TO-92S,VK:TO-92S(4pin),VF:TO-92S(5pin),SO:SOT-23, SQ:QFN-3,ST:TSOT-23,SN:SOT-553,SF:SOT-89(5pin), SS:TSOT-26,SD:DFN-6</p> <p>Sorting α, β, Blank.....</p>
---	---

Part No.
MH482IVK

Temperature Suffix
I (-40°C to + 105°C)

Package Type
VK (TO-92S 4PIN)

Absolute Maximum Ratings

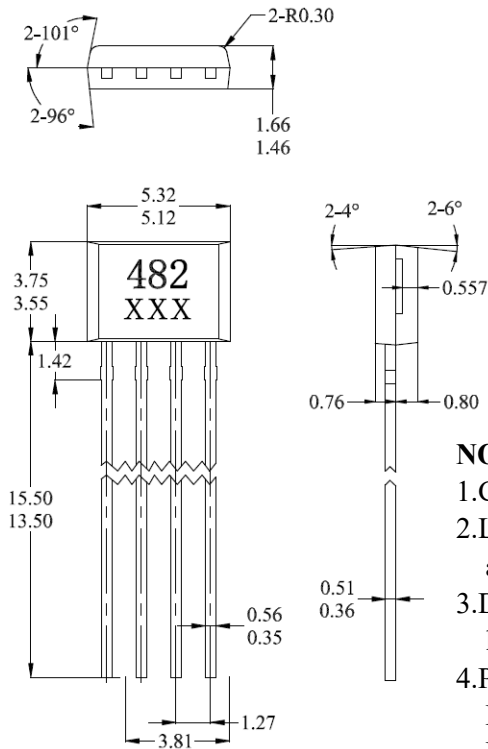
PARAMETER	Symbol	Test Conditions	MH482IVK
Junction temperature	TJ		<165 °C
Supply voltage(5V mode, operation)	V _{cc_5V}		8V
Supply voltage(5V mode, programming method 1)	V _{ccprog1_5V}		5.5 V
Supply voltage(5V mode, programming method 2)	V _{ccprog2_5V}		11.0V
Electrostatic discharge		JESD22-A114	4 kV
Latch up		JESD78A	

Electrical Specifications (5V operation)

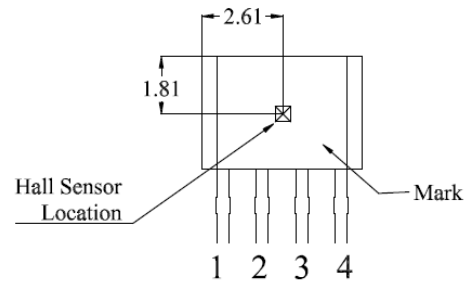
PARAMETER	Symbol	Test Conditions	Specification			unit
			Min	Typ	Max	
Storage temperature	T_S		-40		125	°C
Operating temperature	T_O	IC functional range 5V	-40		105	°C
Supply voltage	V_{CC}	IC functional range	4.5	5	5.5	V
Supply current	I_{CC}	$V_{CC} = 5.0\text{ V}$, $R_L = 10\text{ k}\Omega$	10	13	15	mA
Sensitivity program range	S	Over full range of B, $T_A = 25\text{ }^\circ\text{C}$. Program range.	9		250	V/T
Rise time	t_{RISE}	$T_A = 25\text{ }^\circ\text{C}$, $di/dt = F.S./\mu\text{s}$, input signal rise time $< 1\text{ }\mu\text{s}$. Measured 10%-90% levels.		6		μs
Frequency bandwidth	BW	-3 dB, $T_A = 25\text{ }^\circ\text{C}$		60		kHz
Temperature coefficient	TC_{VO}	At $25\text{ }^\circ\text{C}$. calibrated IC, without TC_{OF} . Program options	-250, 0, 250, 500, 750, 1000			ppm/°C
Temperature coefficient variation of Sensitivity	δTC_{VO}	Over full range of B_M and T_A , calibrated IC, without TC_{OF} .	-200		200	ppm/°C
Noise-high gain	$V_{NOISE-highgain}$	$T_A = 25\text{ }^\circ\text{C}$, $S = 125\text{ V/T}$ 1 kHz-100k Hz		10		mV_{rms}
Nonlinearity error	E_{LIN}	Over full range of B_M , $T_A = 25\text{ }^\circ\text{C}$	-0.5		0.5	%
Saturation voltage	V_{OMAX}	$V_{CC} = 5\text{ V}$, $R_L = 10\text{ k}\Omega$	$V_{CC} - 0.15$			V
	V_{OMIN}				0.15	V
Electrical offset voltage	V_{OF}	$B_M = 0\text{ }\mu\text{T}$, $S = 125\text{ V/T}$, $V_{OUT} - V_{CC}/2$	-10		10	mV
Offset Temperature characteristic	TC_{VOF}	$B_M = 0\text{ }\mu\text{T}$, $S = 125\text{ V/T}$, $V_{OUT} - V_{CC}/2$	-0.075		0.075	mV/°C
Total output error (including all offsets)	E_{TOT}	Over full range of B_M , $T_A = 25\text{ }^\circ\text{C}$, calibrated IC.	-0.5		0.5	%
		Over full range of B_M and T_A , calibrated IC.	-1.5		1.5	%
Output current	I_o	Maximum output current	5			mA
Output load resistance	R_L	Minimum load resistance	2			k Ω
Capacitive load	C_L	Maximum load capacitance			100	nF

Sensor Location, Package Dimension and Marking

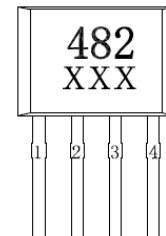
VK Package (To-94 pins)



Hall Chip location



Output Pin Assignment

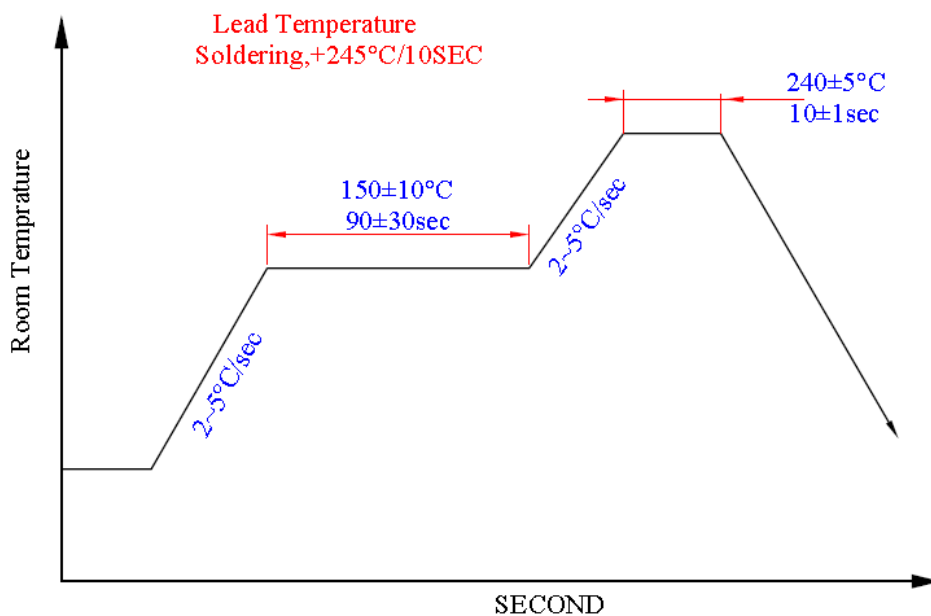


NOTES:

1. Controlling dimension: mm
2. Leads must be free of flash and plating voids
3. Do not bend leads within 1 mm of lead to package interface.
4. PINOUT:

Pin 1	V _{OUT}
Pin 2	GND/Prog
Pin 3	GND/Prog
Pin 4	V _{CC}

IR reflow curve



VK Soldering Condition

Packing specification:

TO-94	Weight
1000pcs/Bag	0.16kg
10 Bags/Box	1.82kg
10 Boxes/Carton	18.98kg
5 Boxes/Carton	9.63kg
4 Boxes/Carton	7.79kg

VK Package Inner box label : Size: 5cm*8cm



VK Carton label : Size: 6 cm * 9cm



Combine:

When combine lot, one bag could have two D/C and no more than two DC. One carton could have two devices, no more than two;