

The MH483IVK 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

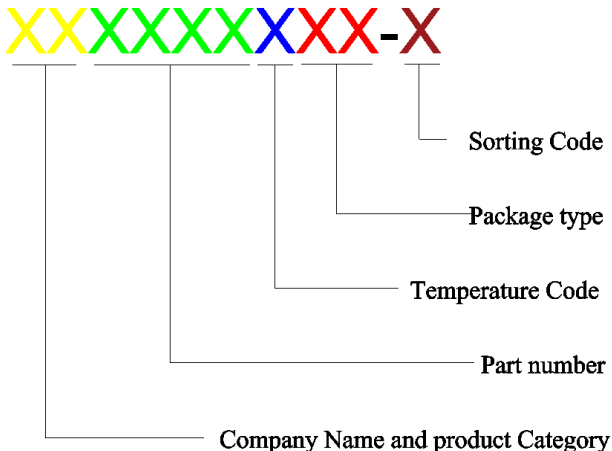
Applications

- 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</p> <p>MH:MST Hall Effect/MP:MST Power IC</p> <p>Part number</p> <p>181,D182,183,184,185,248,477,D381,D381F,381R,D382.....</p> <p>If part # is just 3 digits, the forth digit will be omitted.</p> <p>Temperature range</p> <p>E: 85 °C, I: 105 °C, K: 125 °C, L: 150 °C</p> <p>Package type</p> <p>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,SG:SOT-89(3pin)</p> <p>Sorting</p> <p>α, β, Blank.....</p>
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Part No. MH483IVK	Temperature Suffix I (-40°C to + 105°C)	Package Type VK (TO-92S 4PIN)
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Absolute Maximum Ratings

nr	PARAMETER	Symbol	Test Conditions	MH483IVK
Ar1	Junction temperature	T _J		<165 °C
Ar2	Supply voltage(5V mode, operation)	V _{cc_5V}		8V
Ar3	Supply voltage(5V mode, programming method 1)	V _{ccprog1_5V}		5.5 V
Ar4	Supply voltage(5V mode, programming method 2)	V _{ccprog2_5V}		11.0V
Ar5	Electrostatic discharge		JESD22-A114	4 kV
Ar6	Latch up		JESD78A	

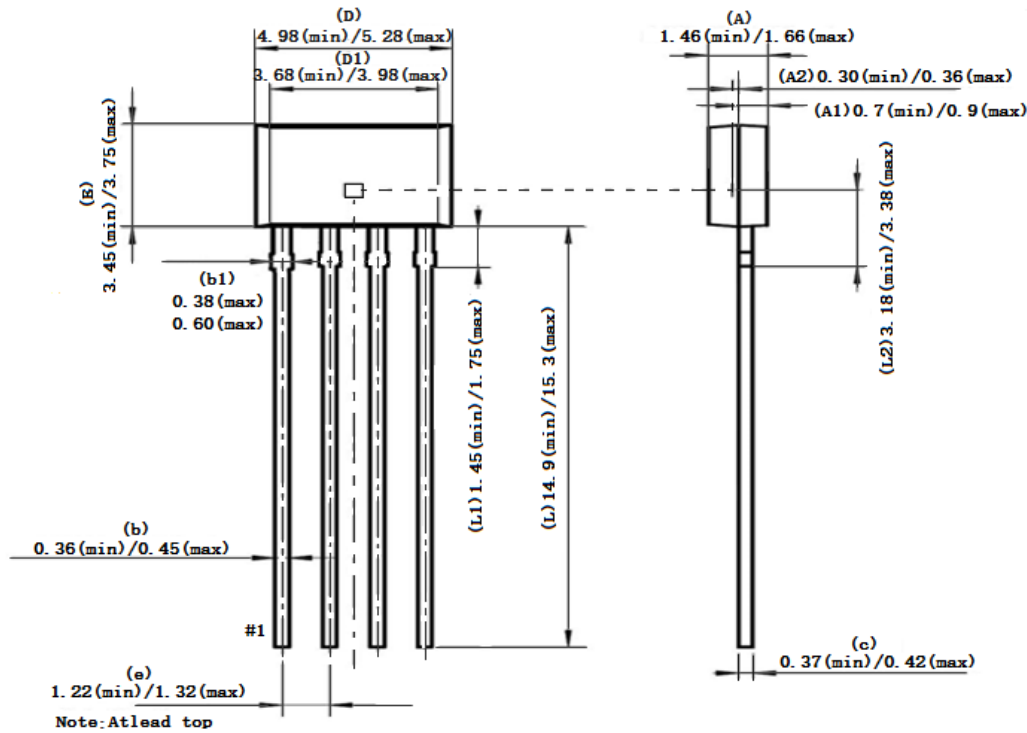
Pinout

PAD	Description	SIP 4 pin	Min	Max
			(V)	(V)
Prog	N.C /Program	1	-0.3	5.5
V _{OUT}	Analog output voltage/Program	2	-0.3	5.5
GND	Ground connection	3	0	
V _{CC}	Supply connection	4	-0.3	5.5

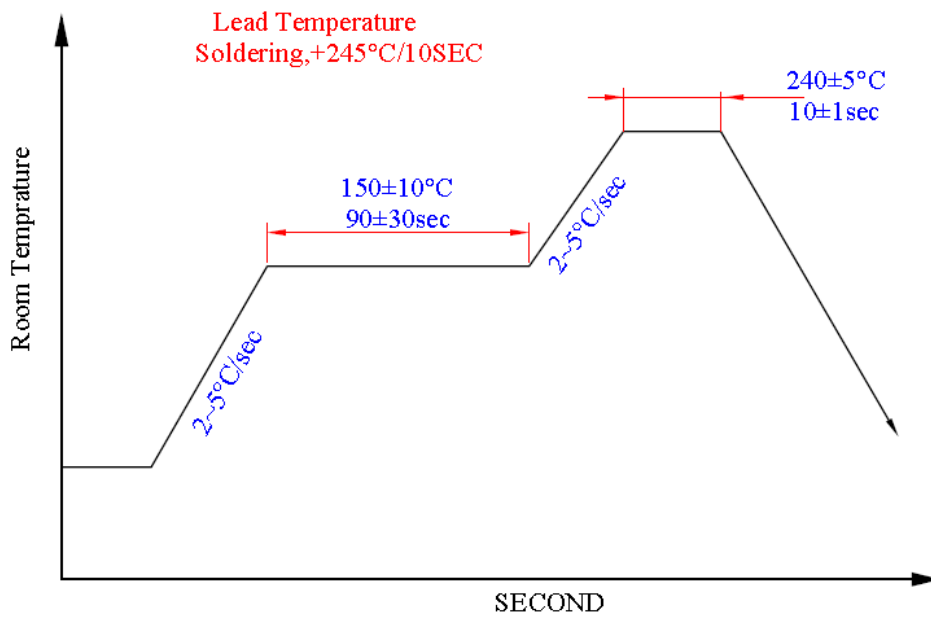
Electrical Specifications (5V operation)

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 V, R _L = 10 kΩ	10	13	15	mA
Sensitivity program range	S	Over full range of B, T _A = 25 °C. Program range.	9		250	V/T
Rise time	t _{RISE}	T _A = 25 °C, di/dt = F.S./μs, input signal rise time < 1 μs. Measured 10%-90% levels.		10		μs
Frequency bandwidth	BW	-3 dB, T _A = 25 °C		35		kHz
Temperature coefficient	TC _{VO}	At 25 °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-high gain}	T _A = 25 °C, S = 125 V/T 1 kHz-100k Hz		10		mV _{rms}
Nonlinearity error	E _{LIN}	Over full range of B _M , T _A = 25 °C	-0.5		0.5	%
Saturation voltage	V _{OMAX}	V _{CC} = 5 V, R _L = 10 kΩ	V _{CC}			V
	V _{OMIN}		-0.15		0.15	V
Electrical offset voltage	V _{OF}	B _M = 0 μT, S = 125 V/T, V _{OUT} - V _{CC} /2	-10		10	mV
Offset Temperature characteristic	TC _{VOF}	B _M = 0 μT, S = 125 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 °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			kΩ
Capacitive load	C _L	Maximum load capacitance			100	nF

Sensor Location, Package Dimension and Marking
VK Package



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 reel could have two D/C and no more than two DC. One carton could have two devices, no more than two;