MH283 is an unipolar Hall effect sensor IC. It incorporates advanced chopper stabilization technology to provide accurate and stable magnetic switch points. The design, specifications and performance have been optimized for applications of solid state switches.

The output transistor will be switched on (BOP) in the presence of a sufficiently strong South pole magnetic field facing the marked side of the package. Similarly, the output will be switched off (BRP) in the presence of a weaker South field and remain off with "0" field.The Pull high resistor has been integrated.

The package type is in a Green version was verified by third party Lab.

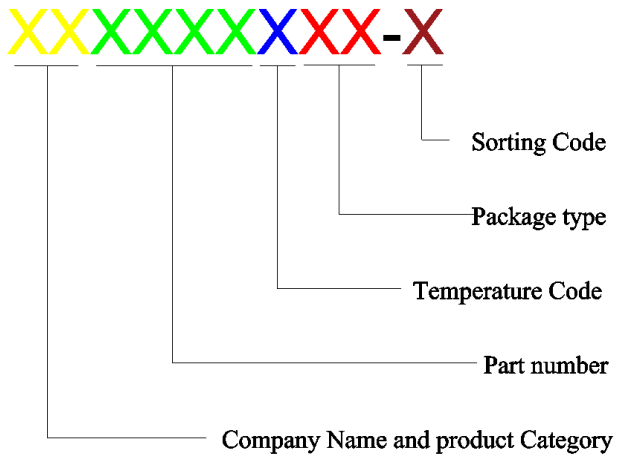
Features and Benefits

- DMOS Hall IC Technology.
- Reverse bias protection on power supply pin.
- Solid-State Reliability.
- Chopper stabilized amplifier stage.
- Unipolar, output switches with absolute value of South pole from magnet.
- Operation down to 3.0V.
- High Sensitivity for direct reed switch replacement applications.
- 100% tested at 125℃for K Spec.
- Custom sensitivity / Temperature selection are available.
- Good ESD Protection.
- RoHS compliant 2011/65/EU and Halogen Free

Applications

- Solid state switch
- Limit switch
- Current limit
- Interrupter
- Current sensing
- Magnet proximity sensor for reed switch replacement

Ordering Information



Company Name and Product Category

MH:MST Hall Effect/MP:MST Power IC

Part number

181,182,183,184,185,248,249,276,477,381,381F,381R,382…..

If part # is just 3 digits, the forth digit will be omitted.

Temperature range

E: 85 ℃, I: 105 ℃, K: 125 ℃, L: 150 ℃

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

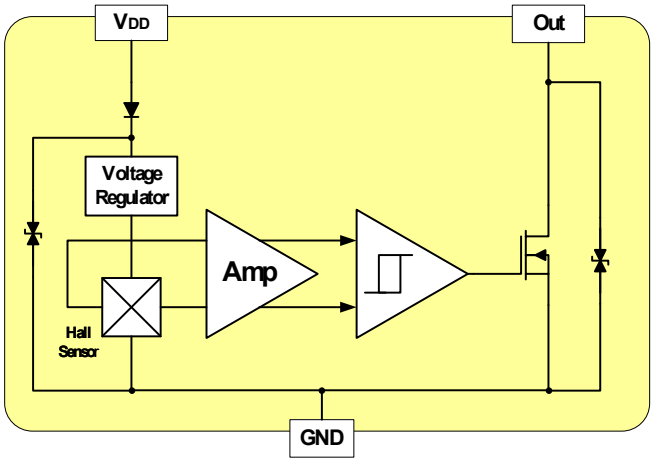
Sorting

α,β,Blank…..

Part No.	Temperature Suffix	Package Type
MH283KUA	K (-40℃ to + 125℃)	UA (TO-92S)
MH283KSO	K (-40℃ to + 125℃)	SO (SOT-23)
MH283EUA	E (-40℃ to + 85℃)	UA (TO-92S)
MH283ESO	E (-40℃ to + 85℃)	SO (SOT-23)

KUA spec is using in industrial and automotive application. Special Hot Testing is utilized.

Functional Diagram



***Note**: Static sensitive device; please observe ESD precautions. Reverse V_{DD} protection is not included. For reverse voltage protection, a 11KΩ resistor in series with V_{DD} is recommended.*

Absolute Maximum Ratings *At (Ta=25℃)*

Characteristics		Values	Unit
Supply voltage, (V_{DD})		28	V
Output Voltage, (V_{OUT})		28	V
Reverse Voltage, (V_{DD})		-27	V
Magnetic flux density		Unlimited	Gauss
Output current, (I_{OUT})		50	mA
Operating Temperature Range, (Ta)	"E" version	-40 to +85	℃
	"K" version	-40 to +125	℃
Storage temperature range, (Ts)		-55 to +150	℃
Maximum Junction Temp,(Tj)		150	℃
Thermal Resistance	(θja) UA / SO	206 / 543	℃/W
	(θjc) UA / SO	148 / 410	℃/W
Package Power Dissipation, (P_D) UA / SO		606 / 230	mW

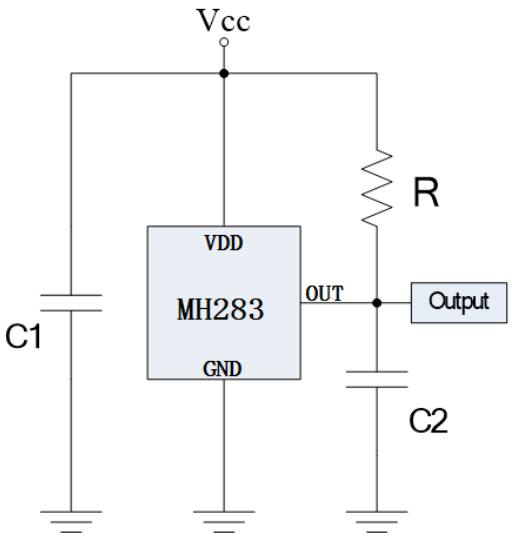
***Note**: Do not apply reverse voltage to V_{DD} and V_{OUT} Pin, It may be caused for Miss function or damaged device.*

Electrical Specifications

DC Operating Parameters TA=+25℃, VDD=12V (Unless otherwise specified)

Parameters	Test Conditions	Min	Typ	Max	Units
Supply Voltage,(*VDD*)	Operating	3.0		24.0	V
Supply Current,(*IDD*)	B<BOP		2.5	5.0	mA
Output Saturation Voltage, (*Vsat*)	Iout = 20 mA, B>BOP			500.0	mV
Output Leakage Current, (*Ioff*)	IOFF B<BRP, VOUT = 20V			10.0	uA
Output Rise Time, (*TR*)	RL=1kΩ, CL =20pF		0.04	0.45	uS
Output Fall Time, (*TF*)	RL=820Ω; CL =20pF		0.18	0.45	uS
Electro-Static Discharge	HBM	4			KV
Operate Point (B_{OP})		90		150	Gauss
Release Point (B_{RP})		40		100	Gauss
Hysteresis (B_{HYS})			50		Gauss

Typical application circuit



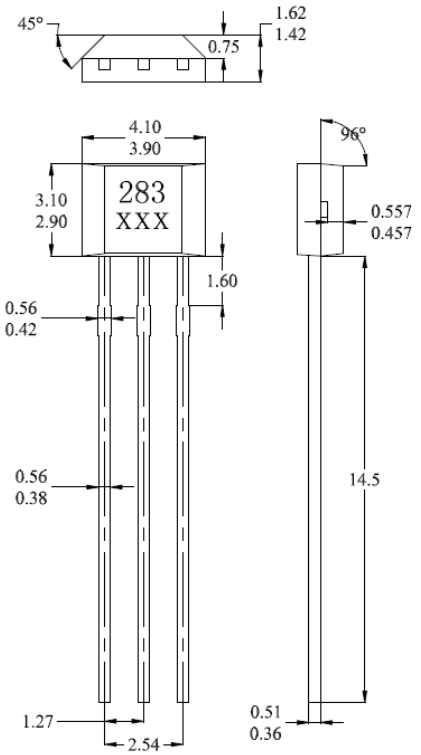
R：1KΩ

C1：10nF

C2：1nF

Sensor Location, Package Dimension and Marking

UA Package



NOTES:

1.Controlling dimension: mm

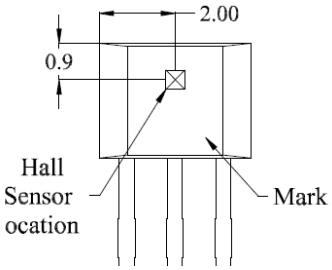
2.Leads must be free of flash and plating voids

3.Do not bend leads within 1 mm of lead to package interface.

4.PINOUT:

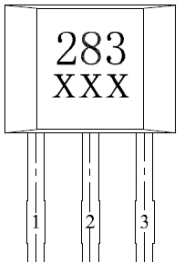
Pin 1	VCC
Pin 2	GND
Pin 3	Output

Hall Chip location



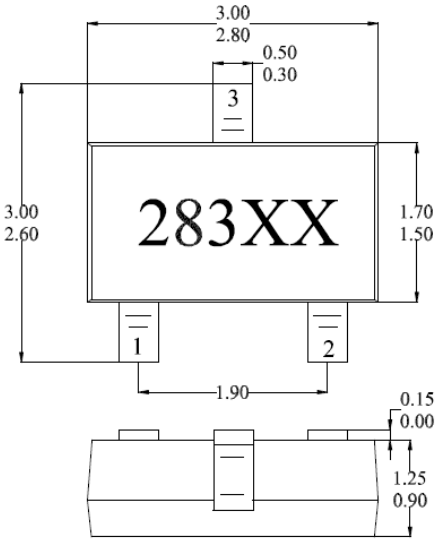
Output Pin Assignment

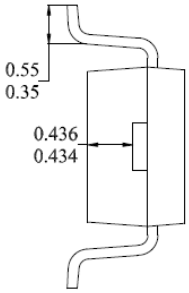
(Top view)



SO Package

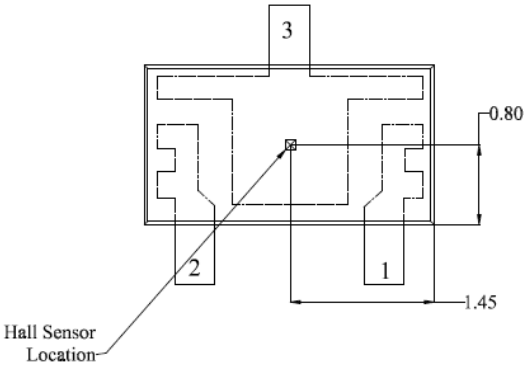
(Top View)





Hall Plate Chip Location

(Bottom view)



NOTES:

1.PINOUT (See Top View at left :)

Pin 1	V_{CC}
Pin 2	Output
Pin 3	GND

2.Controlling dimension: mm

3.Lead thickness after solder plating will be 0.254mm maximum

(For reference only)Land Pattern