

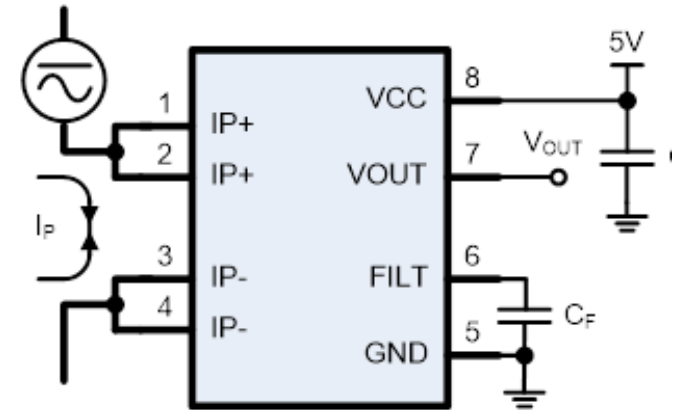
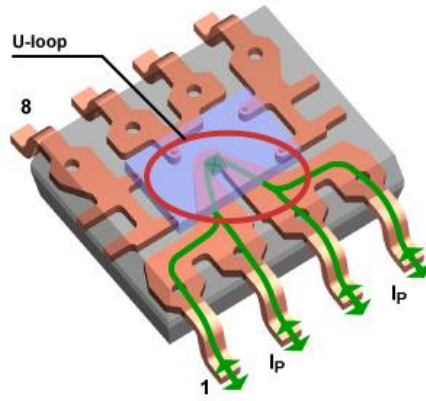
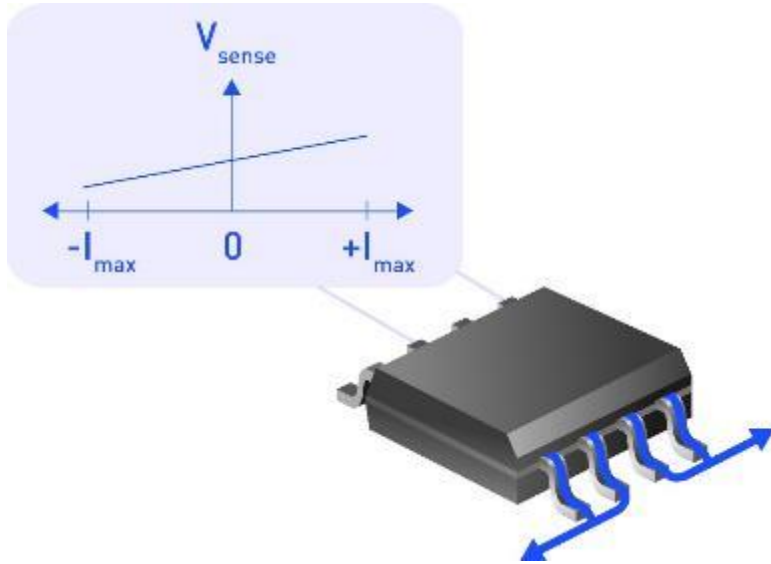
MPS Current Sensor Introduction

MCS18xx

Q2-2019

MPS MCS180x Hall Effect Current Sensors

- Current flows in and out of the IC package via the leadframe
- This current creates a magnetic field (Hall Effect), which is sensed by the IC
- The sensed field creates a voltage, which is amplified, scaled and filtered to the output pin



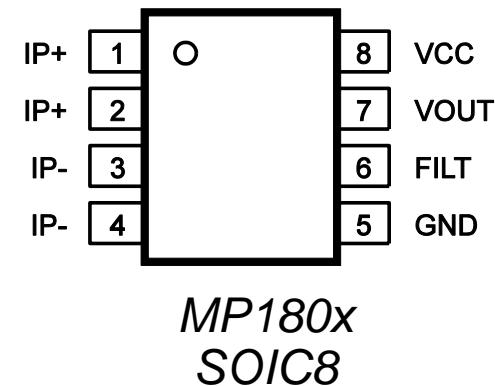
- The IC output voltage is galvanically isolated from, and linearly proportional to the sensed current
- Bi-directional AC or DC current sensing is supported
- Highly efficient measurement due to sub-m Ω internal IC resistance in the current path
- Simple, accurate, and easy to use in a variety of isolated or non-isolated applications
- Differential Sensing for immunity to stray magnetic fields

MCS1800 / 1801 Low Isolation Versions

Sampling now

- Isolated bi-directional current sensing
- Differential sensing for magnetic noise immunity
- Factory calibrated accuracy from -40C to 125C
- <math><1.2\text{m}\Omega</math> current sensing resistance
- 200V_{RMS} minimum isolation voltage
- Low and stable output offset voltage, with high light load accuracy
- Fast 3.5 μs output response time
- 2 IC versions for +/-12.5A and +/-25A
- 100kHz bandwidth
- Output voltage proportional to input current - AC or DC current
- Two Vcc bias options: 3.3V or 5V
- Output voltage zero to Vcc corresponds to full negative to positive current range
- Linear output voltage Vs. current
- Near zero magnetic hysteresis
- Cost effective solution for consumer applications

Part Number	VCC (V)	Current Range (A)	accuracy	Isolation Voltage (V)
MCS1800	3.3	$\pm 12.5, \pm 25$	5%	200
MCS1801	5	$\pm 12.5, \pm 25$	5%	200

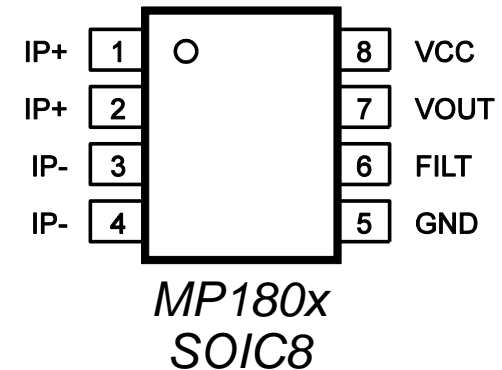


MCS1801 / 1802 2.4kV_{RMS} Isolated

Sampling now

- Isolated bi-directional current sensing
- Differential sensing for magnetic noise immunity
- Factory calibrated accuracy from -40C to 125C
- <0.8mΩ current sensing resistance
- 2.4kVRMS minimum isolation voltage
- Low and stable output offset voltage, with high light load accuracy
- Fast 3.5μs output response time
- 6 IC versions to detect full range of +/-5A to +/-50A for best accuracy
- 100kHz bandwidth
- Output voltage proportional to input current - AC or DC current
- Two Vcc bias options: 3.3V or 5V
- Output voltage zero to Vcc corresponds to full negative to positive current range
- Linear output voltage Vs. current
- Near zero magnetic hysteresis

Part Number	VCC (V)	Current Range (A)	accuracy	Isolation Voltage (V)
MCS1802	3.3	±5, ±10, ±20, ±30, ±40, ±50	4%	2400
MCS1803	5	±5, ±10, ±20, ±30, ±40, ±50	4%	2400



MP180x Current Sensor Family Highlights

Part Number	Description	type	VCC (V)	Current Range (A)	accuracy	Temp. Ranges	Bandwidth (kHz)	Isolation Voltage (V)	Conductor Resistance (mOhm)	Package
MCS1800	< 200 V isolation application	bidirectional	3.3	±12.5, ±25	5%	-40°C to 125°C	100	200	1.2	SOIC8
MCS1801	< 200 V isolation application	bidirectional	5	±12.5, ±25	5%	-40°C to 125°C	100	200	1.2	SOIC8
MCS1802	< 2400 Vrms isolation applications	bidirectional	3.3	±5, ±10, ±20, ±30, ±40, ±50	4%	-40°C to 150°C	100	2400	0.8	SOIC8
MCS1803	< 2400 Vrms isolation applications	bidirectional	5	±5, ±10, ±20, ±30, ±40, ±50	4%	-40°C to 150°C	100	2400	0.8	SOIC8