

Hall Effect Linear Current Sensors for 5 to 50A Applications

The MCS180X family are isolated bi-directional Hall effect linear current sensors for AC or DC current sensing applications. They provide a cost effective way to replace shunt, transformer or optical isolated solutions for greater efficiency, and smaller form factor.

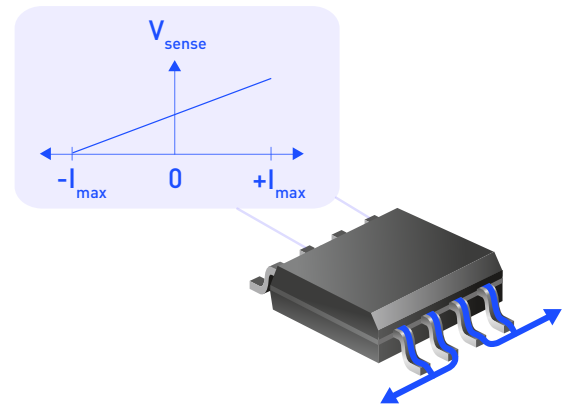
Up to 50A

Up to 1.5% Accuracy

3.3V & 5V Versions

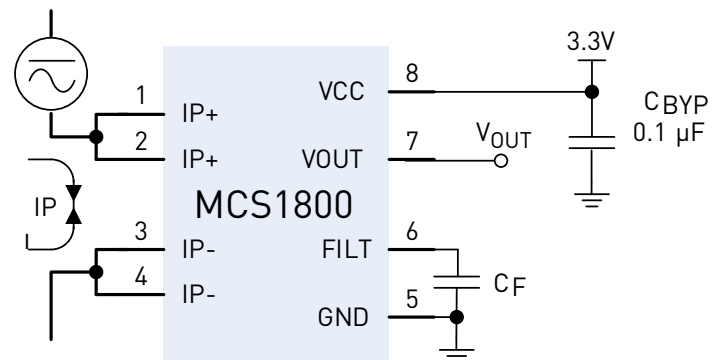
MCS180x Features

- Differential Hall Sensing for stray field immunity
- Factory calibrated accuracy from -40°C to 125°C
- $<0.8\text{m}\Omega$ current sensing resistance
- 200V or 2.4kVRMS isolation voltage versions
- Fast 3.5us output response time
- 10kHz bandwidth
- Linear output voltage vs. current
- SOIC-8 Package



Applications

- Load detection & management
- Over-current fault protection
- Motor control
- Switched-mode power supplies
- Solar inverters
- RF amplifiers



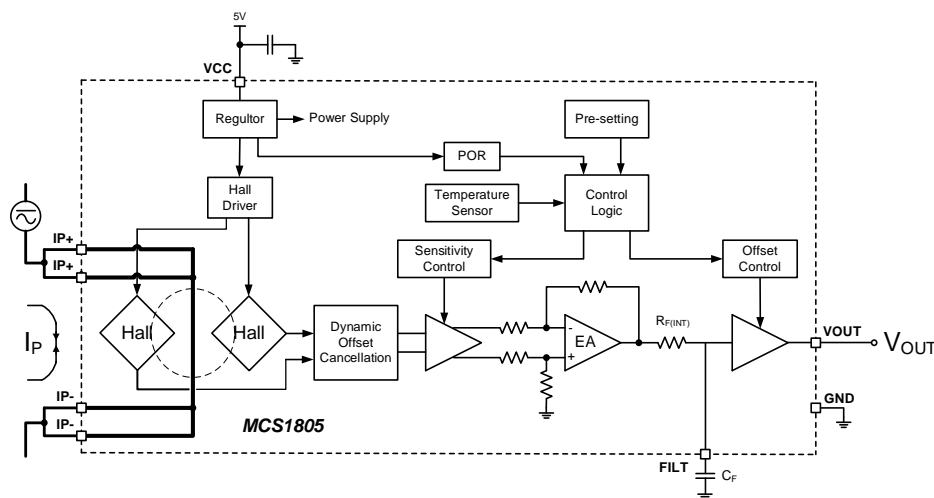
Advantages

Electrical isolation between primary and secondary allows for use in high or low side sensing applications, and a low conductive path resistance of less than $1\text{m}\Omega$ minimizes power loss. Hall sensing converts the magnetic field of the input current into an accurate proportional output voltage. The differential Hall sensing architecture eliminates the effects of stray magnetic fields.

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MCS180x Family

- 6 IC versions to detect full range of 5A to 50A for best accuracy
- Output voltage proportional to input current - AC or DC
- 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)
MCS1800	3.3	+12.5/25	5	200
MCS1801	5	+12.5/25	5	200
MCS1802	3.3	+5/10/20/30/40/50	3	2400
MCS1803	5	+5/10/20/30/40/50	3	2400
MCS1804	3.3	+5/10/20/30/40/50	1.50	2400
MCS1805	5	+5/10/20/30/40/50	1.50	2400

Additional Resources

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MonolithicPower.com

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