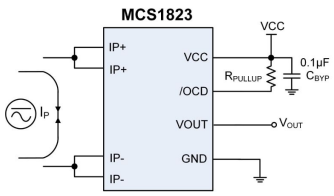
MCS1823

Ultra-Small Package, Linear Hall-Effect Current Sensor with Over-Current Detection | **Pre-Release** | Datasheet



Description

The MCS1823 is a linear Hall-effect current sensor IC for AC or DC current sensing. The Hall array is differential to cancel out any stray magnetic field.

A low-resistance (0.6mΩ) primary conductor allows a large current to flow within close proximity to the integrated circuit containing high-accuracy Hall sensors. This current generates a magnetic field, which is sensed at two different points by the integrated Hall transducers. The magnetic field difference between these two points is then converted into a voltage proportional to the applied current. A spinning current technique is used for a low, stable offset.

The MCS1823 integrates over-current detection (OCD) to easily monitor the system for over-current events.

The small footprint saves board area and makes this device ideal for space-constrained applications. The MCS1823 is available in an ultra-small QFN-12 (3mmx3mm) package.

Show less

Features & Benefits

- 3.3V or 5V Single Supply Options
- Immune to All External Gradient Magnetic Fields via Differential Sensing
- 0.6mΩ Internal Conductor Resistance
- ±2.5% Total Accuracy
- 5A to 50A Range, Unidirectional or Bidirectional Current Options
- 120kHz Bandwidth
- Custom Over-Current Detection (OCD) from 50% to 240% of I_{PMAX}
- Fast OCD (1µs Response Time)
- Output Proportional to AC or DC Currents
- Ratiometric or Absolute Output Options
- Factory-Trimmed for Accuracy
- No Magnetic Hysteresis
- Available in a QFN-12 (3mmx3mm) Package

Show less

Active Part Numbers:

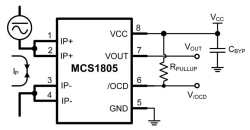
MCS1823 Ultra-Small Package, Linear Hall-Effect Current Pre-Release Datasheet

MCS1823GQTE-305BRN96-Z MCS1823GQTE-305BRN96-P MCS1823GQTE-305BRN23-Z MCS1823GQTE-305BRN23-P MCS1823GQTE-310BRN-Z MCS1823GQTE-310BRN-P MCS1823GQTE-320BRN-Z MCS1823GQTE-320BRN-P MCS1823GQTE-330BRN-Z MCS1823GQTE-330BRN-P MCS1823GQTE-330BRN-P MCS1823GQTE-540BRN-Z MCS1823GQTE-540BRN-P MCS1823GQTE-550BRN-Z MCS1823GQTE-550BRN-P MCS1823GQTE-330BAL-Z MCS1823GQTE-330BAL-P MCS1823GQTE-330BAN-Z MCS1823GQTE-330BAN-P MCS1823GQTE-335URN-Z MCS1823GQTE-335URN-P

Part numbers ending in P and Z are the same parts. P and Z only indicates reel size.

Meaning of P & Z

Related Products



MCS1805GS Linear Hall-Effect Current Sensor with OCD, 3kV$_{RMS}$ Isolation, and 580V$_{RMS}$ Working Voltage

The MCS1805 is a linear Hall-effect current sensor IC for AC or DC current sensing. The differential Hall array cancels out any stray magnetic field.

The primary conductor's low resistance allows large currents to flow within close proximity to the integrated circuit, which contains high-accuracy Hall sensors. This current generates a magnetic field, which is sensed at two different points by the integrated Hall transducers. The magnetic field difference between these two points is then converted into a voltage that is proportional to the applied current. A spinning current technique is used for a low, stable offset.

Learn more

MCS1823 Resources

Page 1 of 7

ULTRA-SMALL HALL-EFFECT CURRENT SENSO...

VIDEO

MPS's linear, Hall-effect current sensor with over-current detection is designed...

CURRENT SENSOR USE CASE: SMART LIGHT...

USE CASE

In this use case, we'll consider our highly integrated current sensors in smart lighting...

E-BIKES

APPLICATION

The worldwide demand for electric bikes (e-bikes) is growing as consumers see e...

INKJET & LASER PRINTERS

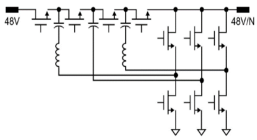
APPLICATION

Inkjet and laser printers are incorporating more and more features into new designs,...

POWER TOOLS

APPLICATION

Power tools offe variety of featur of customers fr



DESIGNING MULTIPLE INDEPENDENT AUXILIARY...

ARTICLE

In a DC/DC converter, the auxiliary power supply of multiple switching devices...

MCS1823

Ultra-Small Package, Linear Hall-Effect Current Sensor with Over-Current Detection

Pre-Release

Datasheet

Reference Materials

Type	Title
Video	**Ultra-Small Hall-Effect Current Sensor: MCS1823**

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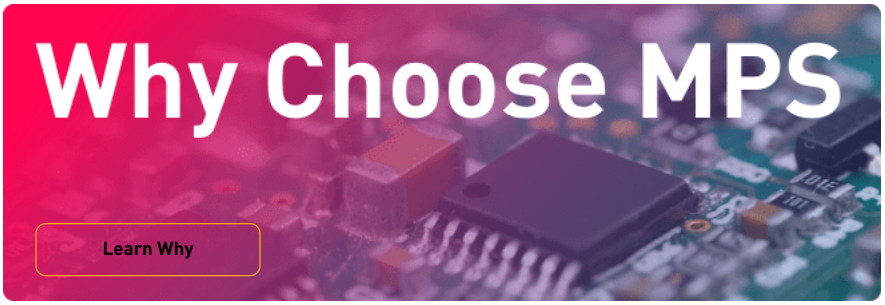

Technical Forum

Questions answered by MPS engineers in 24h

MCS1823 - overdrive capability

I want to use the 5A MCS1823 device for current measurement but i expect current peaks up to 25A. Can i use the 5A version or do...

MOTOR DRIVERS/SENSORS

Latest activity 9 months ago 2 Comments

MA600 E-PAD pin

Hello, I would like to know if the E-PAD pin #17 of the MA600 can be connected to GND ? Thanks

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