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■ General Description

OCH19625 current sensor IC is an economical and precise solution for AC or DC current sensing in industrial, commercial, and communication systems. The small package is ideal for space-constrained applications while also saving costs due to reduced board area. Typical applications include motor control, load detection and management, switched-mode power supplies, and overcurrent fault protection. The device consists of a precise, low-offset, linear Hall sensor circuit with a copper conduction path located near the surface of the die. Applied current flowing through this copper conduction path generates a magnetic field which is sensed by the integrated Hall IC and converted into a proportional voltage. The current is sensed differentially in order to reject common-mode fields, improving accuracy in magnetically noisy environments. The internal resistance of this conductive path is 0.85 mΩ typical, providing low power loss. The terminals of the conductive path are electrically isolated from the sensor leads (pins 9 through 16). This allows the OCH19625 current sensor IC to be used in high-side current sense applications without the use of high-side differential amplifiers or other costly isolation techniques. Two logic gain selection pins can be used to configure the device to one of four defined sensitivities and corresponding current ranges. A fast overcurrent fault output provides shortcircuit detection for system protection with a fault threshold that is proportional to the current range and can be set with an analog input.

The OCH19625 is provided in a low-profile surface-mount SOP-16L(W) package. The leadframe is plated with 100% matte tin, which is compatible with standard lead (Pb) free printed circuit board assembly processes. Internally, the device is Pb-free. The device is fully calibrated prior to shipment from the factory.

■ Features

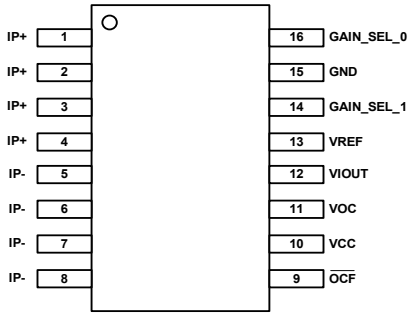
- Differential Hall sensing rejects common-mode fields
- Dielectric Strength Voltage =5.5 kV_{RMS}
- 320 kHz bandwidth, step response time 1.1 us
- 1.5% maximum sensitivity error over temperature
- 10 mV maximum offset voltage over temperature
- 0.85 mΩ primary conductor resistance for low power loss and high inrush current withstand capability
- OCF with 2us response time
- Pin adjustable OCF threshold
- Externally configurable gain settings using two logic pins
- Low-profile SOP-16L(W) package suitable for space-constrained applications
- 5V single supply operation
- Output voltage proportional to AC or DC current
- Factory-trimmed sensitivity and quiescent output voltage for improved accuracy
- No magnetic hysteresis
- Non-ratiometric operation with V_{REF} output
- Wide operating temperature, –40°C to 150°C

■ Applications

- AC and DC Chargers
- Electric Drives
- DCDC Converters
- Solar
- Power Supplies
- Demand/Load Control
- Overcurrent Fault Protection

UL Solutions
Certificate number:
UL-US-2410838-1

■ Pin Configuration



SOP-16L(W)
Figure 1: Pin Assignments of OCH19625

Number	Name	Description
1,2,3,4	IP+	Terminals for current being sensed; fused internally
5,6,7,8	IP-	Terminals for current being sensed; fused internally
9	$\overline{OCF}$	Overcurrent fault, open-drain
10	VCC	Power supply terminal
11	VOC	Overcurrent fault operation point input
12	VIOUT	Analog output signal
13	VREF	Reference Voltage
14	GAIN_SEL_1	Gain selection bit 1
15	GND	Signal ground terminal
16	GAIN_SEL_0	Gain selection bit 0

■ Typical Application Circuit

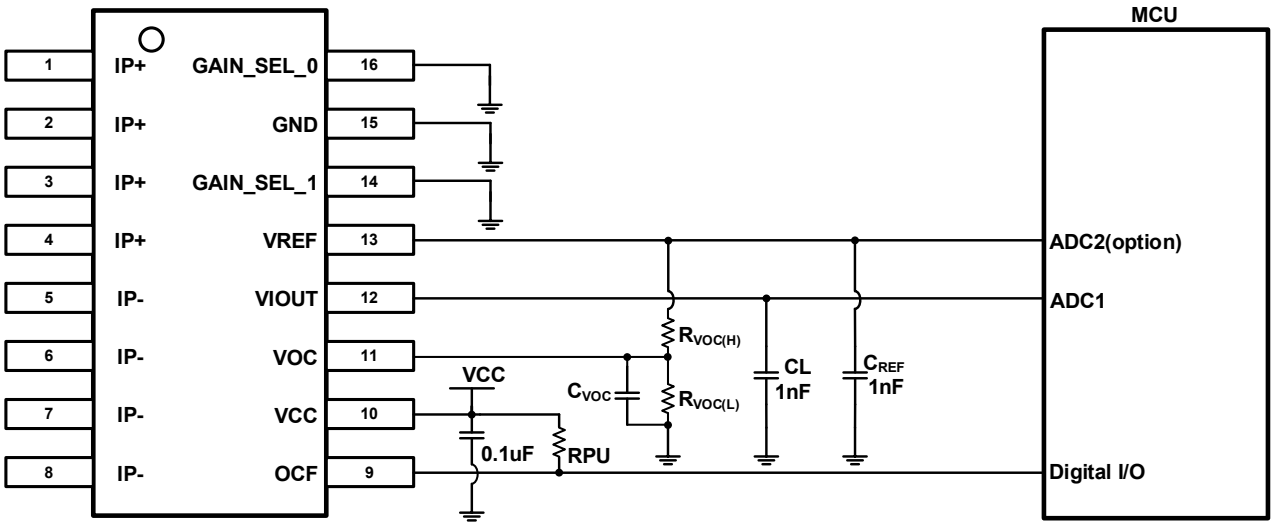


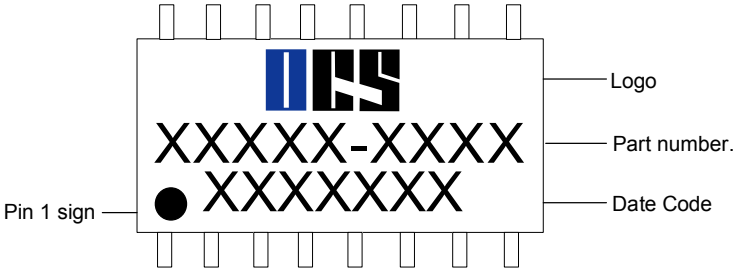
Figure 2: Typical Application of OCH19625

■ Ordering Information

Part Number	I_P(A)	Sensitivity (mV/A)	Nominal V_{CC} (V)	Temperature (℃)	Packing
OCH19625 -10AB	±10A, ±12A, ±15A, ±20A	200, 166.6, 133.3, 100	5	-40～150	Tape and Reel，1500 pieces per reel
OCH19625 -30AB	±30A, ±36A, ±45A, ±60A	66.6, 55.5, 44.4, 33.3			
OCH19625 -66AB	±66A, ±80A, ±100A, ±133A	30, 25, 20, 15			

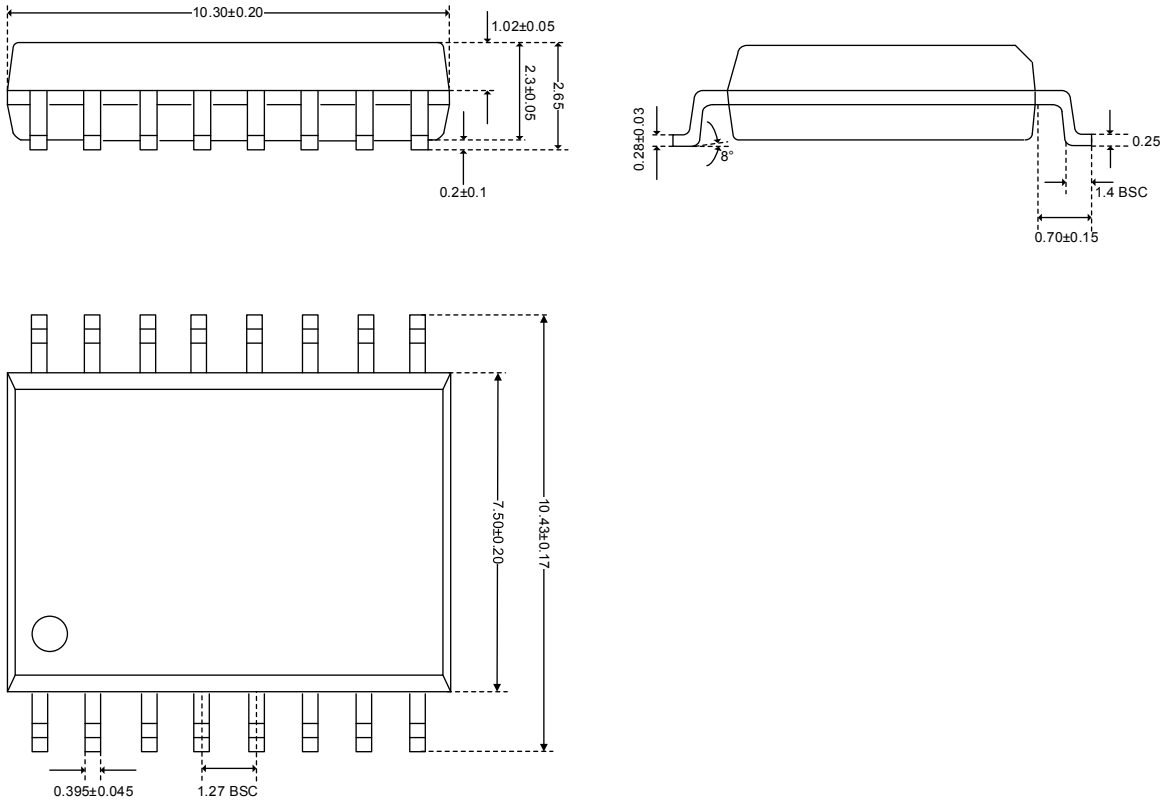
■ Marking Information

SOP-16L(W)



■ Package Information

SOP-16L(W)



Note: All dimensions are in millimeters.