

## 阅读申明

- 1.本站收集的数据手册和产品资料都来自互联网，版权归原作者所有。如读者和版权方有任何异议请及时告之，我们将妥善解决。
- 2.本站提供的中文数据手册是英文数据手册的中文翻译，其目的是协助用户阅读，该译文无法自动跟随原稿更新，同时也可能存在翻译上的不当。建议读者以英文原稿为参考以便获得更精准的信息。
- 3.本站提供的产品资料，来自厂商的技术支持或者使用者的心得体会等，其内容可能存在描述上的差异，建议读者做出适当判断。
- 4.如需与我们联系，请发邮件到marketing@iczoom.com，主题请标有“数据手册”字样。

## Read Statement

1. The datasheets and other product information on the site are all from network reference or other public materials, and the copyright belongs to the original author and original published source. If readers and copyright owners have any objections, please contact us and we will deal with it in a timely manner.
2. The Chinese datasheets provided on the website is a Chinese translation of the English datasheets. Its purpose is for reader's learning exchange only and do not involve commercial purposes. The translation cannot be automatically updated with the original manuscript, and there may also be improper translations. Readers are advised to use the English manuscript as a reference for more accurate information.
3. All product information provided on the website refer to solutions from manufacturers' technical support or users the contents may have differences in description, and readers are advised to take the original article as the standard.
4. If you have any questions, please contact us at marketing@iczoom.com and mark the subject with "Datasheets" .

### Features:

- 3-60 V Operating Voltage Range
- Integrated 10-bit ADC
- 3 wire serial interface
- Microcontroller Compatible
- Low Power
- Minimum External Components
- TSOT-23 RoHS Compliant Package

### Applications:

- Lighting Management
- Current Shunt Measurement
- Remote Sensing
- Battery Monitoring
- Microprocessor Controlled Power Management

### Ordering Information

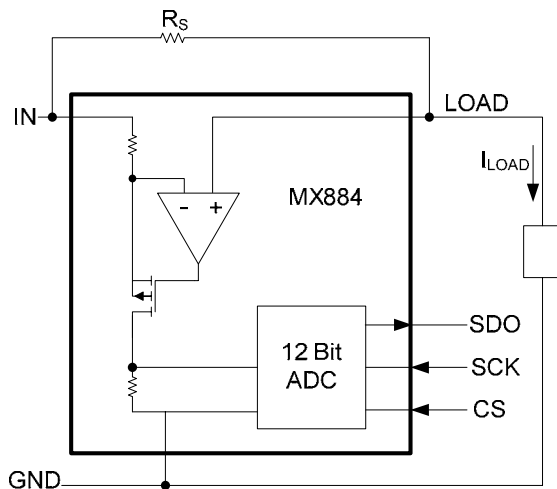
Part No.	Description	Qty
MX884HTTR	6L TSOT23 Tape & Reel	3,000

### General Description

The MX884 targets power management applications where high noise immunity and low cost are primary requirements. Its integrated 10-bit ADC provides high resolution, making it ideal for current monitoring systems. The MX884 enables digital power management, in which a microcontroller can readily monitor the current in a system and perform other control functions in power systems and motion control products.

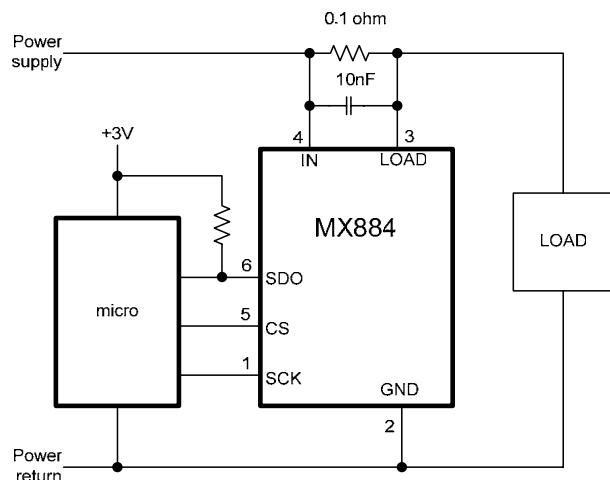
The MX884 converts a small voltage developed across an external “current” sense resistor to a 10-bit digital output. It features a wide common mode input supply voltage range of 3V to 60V and easily interfaces to most microcontrollers. The design is simple yet cost-effective, requiring very few external components, making it especially suitable for high volume applications.

### Functional Block Diagram



### Typical Application Circuit

(1 Amp full scale)



**Absolute Maximum Ratings**

T<sub>A</sub> = +25°C unless otherwise noted, Voltages with respect to GND = 0V

Parameter	Symbol	Min	Max	Unit
IN Supply Voltage			70	V
LOAD			70	V
SCK, CS Input Voltage			6	V
SDO Open Drain Pull Up Voltage			6	V
Operating Temperature Range	T <sub>A</sub>	-40	+85	°C
Storage Temperature Range	T <sub>STG</sub>	-55	+150	°C

*Absolute Maximum Ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of this data sheet is not implied. Exposure of the device to the absolute maximum ratings for an extended period may degrade the device and affect its reliability.*

**Pin Description and Configuration**

Pin No.	Name	Description
1	SCK	Serial Clock
2	GND	Ground
3	LOAD	Load-Side Connection to the External Sense Resistor
4	IN	Positive Supply Terminal and Power Connection for the External Sense Resistor
5	CS	Chip Select (Active Low)
6	SDO	Serial Data Output (Open Drain)

**DC Electrical Characteristics**

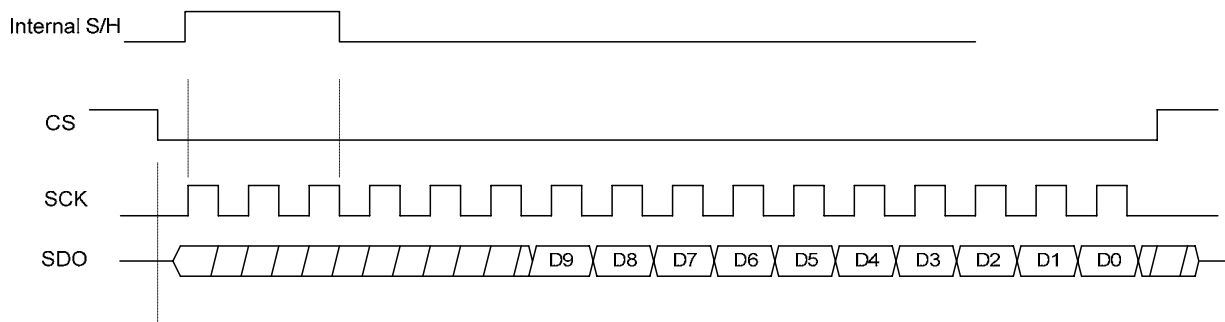
V<sub>IN</sub> = 5 V, T = +25°C

Parameter	Condition	Min	Typ	Max	Unit
Operating Voltage Range (V <sub>IN</sub> )		3		60	V
Supply Current	I <sub>LOAD</sub> =0		0.25		mA
Average A/D Reading	10 mV Sense Voltage	90	100	110	LSB
Average A/D Reading	100 mV Sense Voltage	992	1000	1008	LSB
Output Noise	C <sub>S</sub> 10nF parallel R <sub>S</sub> =10 ohm		1.5		RMS LSB
SCK pulse period		5			µS
SCK pulse width	high or low	200			nS
CS pulse period		100			µS
CS falling to first SCK rising		200			nS
Last SCK falling to CS rising		100			nS
SCK falling to SDO valid	SDO falling			80	nS
	SDO rising	Depends on SDO R, C			

## Functional Description

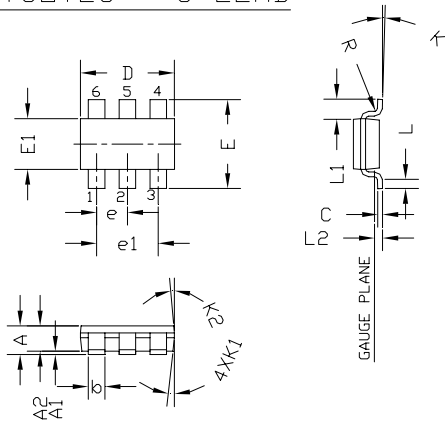
The MX884 converts a small voltage developed across an external sense resistor ( $R_s$ ) to a 10-bit digital output. Pin IN connects to the 3V to 60V power input. The external current sense resistor connects between pins IN and LOAD. The nominal A/D range is  $100 \text{ mV } V(\text{IN}) - V(\text{LOAD})$  across  $R_s$ . The A/D least significant bit typically equals  $0.1 \text{ mV}$  across  $R_s$ . Inputs CS and SCK are TTL-level compatible, 5.5V maximum input voltage. Inputs can be driven from CMOS microcontrollers operating at supply voltages of 2.4 to 5.5V. Serial data output pin SDO is configured as open drain, maximum 5.5V external pull-up. SCK is used internally to clock the successive approximation register of the A/D.

## Serial Timing Diagram



**TSOT-23 6 Lead**

TSOT23 - 6 LEAD



DIM.	DIMENSIONS					
	INCH			MILLIMETER		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	0.030	-	0.035	0.75	-	0.90
A1	0.000	-	0.004	0.00	-	0.10
A2	0.028	0.030	0.031	0.70	0.75	0.80
b	0.014	-	0.020	0.35	-	0.51
c	0.004	-	0.010	0.10	-	0.25
D	0.110	0.114	0.118	2.80	2.90	3.00
E	0.102	0.110	0.118	2.60	2.80	3.00
E1	0.059	0.063	0.067	1.50	1.60	1.70
e	0.0374 BSC			0.95 BSC		
e1	0.0748 BSC			1.90 BSC		
L	0.015	-	-	0.37	-	-
L1	0.0236 REF			0.60 REF		
L2	0.0098 BSC			0.25 BSC		
y	-	-	0.004	-	-	0.10
R	0.004	-	-	0.10	-	-
K	0°	-	8°	0°	-	8°
K1	7° NDM			7° NDM		
K2	5° NDM			5° NDM		

1. DIMENSION "D" DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS. MOLD FLASH, PROTRUSIONS AND GATE BURRS SHALL NOT EXCEED .004 IN. (0.10MM) PER SIDE.
2. DIMENSION "E" DOES NOT INCLUDE INTER-LEAD FLASH OR PROTRUSIONS. INTER-LEAD FLASH AND PROTRUSION SHALL NOT EXCEED .006" (0.15MM) PER SIDE.
3. PACKAGE TOP MAY BE SMALLER THAN PACKAGE BOTTOM. DIMENSIONS D AND E1 ARE DETERMINED AT THE OUTERMOST EXTREME OF THE PLASTIC BODY EXCLUDING MOLD FLASH, TIE BAR BURRS, GATE BURRS AND INTERLEAD FLASH, BUT INCLUDING ANY MISMATCH BETWEEN TOP AND BOTTOM OF THE PLASTIC BODY.

NOTES: (UNLESS OTHERWISE SPECIFIED)

IXYS Corporation makes no representations or warranties with respect to the accuracy or completeness of the contents of this publication and reserves the right to make changes to specifications and product descriptions at any time without notice. Neither circuit patent licenses nor indemnity are expressed or implied. Except as set forth in IXYS' Standard Terms and Conditions of Sale, IXYS Corporation assumes no liability whatsoever, and disclaims any expressed or implied warranty, relating to its products including, but not limited to, the implied warranty of merchantability, fitness for a particular purpose, or infringement of any intellectual property right.

**IXYS Corporation**

3540 Bassett Street  
Santa Clara, CA 925054  
Tel: 1-408-982-0700  
Fax: 1-408-496-0670  
e-mail:sales@ixys.net

**Micronix****An IXYS Company**

145 Columbia  
Aliso Viejo, CA 92656-1490  
Tel: 1-949-831-4622  
Fax: 1-949-831-4628

**SALES OFFICES AMERICAS****Eastern Region**

[Eastern North America, Mexico, South America]  
IXYS Corporation  
Beverly, MA  
Tel: 508-528-6883  
Fax: 508-528-4562  
wgh@ixys.net

**Central Region**

[Central North America]  
IXYS Corporation  
Greensburg, PA  
Tel: 724-836-8530  
Fax: 724-836-8540  
neil.lejeune@westcode.com

**Western Region**

[Western North America]  
IXYS Corporation  
Solana Beach, CA  
Tel: 858-792-1101  
slodor@ix.netcom.com

**SALES OFFICES EUROPE****European Headquarters**

IXYS Semiconductor GMBH  
Edisonstrasse 15  
D- 68623 Lampertheim  
Germany  
Tel : 49-6206-503203  
Fax: 49-6206-503286  
marcom@ixys.de

**United Kingdom**

IXYS Semiconductor Limited  
Langley Park Way  
Langley Park  
Chippenham  
Wiltshire SN 15 1GE - England  
Tel: 44-1249-444524  
Fax: 44-1249-659448  
sales@ixys.co.uk

**SALES OFFICES ASIA / PACIFIC****Asian Headquarters**

IXYS  
Room 1016, Chia-Hsin, Bldg II,  
10F, No. 96, Sec. 2  
Chung Shan North Road  
Taipei, Taiwan R.O.C.  
Tel: 886-2-2523-6368  
Fax: 886-2-2523-6368  
bradley.green@ixys.co.uk  
Jhong@clare.com

<http://www.claremicronix.com>

---

IXYS cannot assume responsibility for use of any circuitry other than circuitry entirely embodied in this IXYS product. No circuit patent licenses nor indemnity are expressed or implied. IXYS reserves the right to change the specification and circuitry, without notice at any time. The products described in this document are not intended for use in medical implantation or other direct life support applications where malfunction may result in direct physical harm, injury or death to a person.

---

Specification: MX884  
©Copyright 2006, IXYS Corporation  
All rights reserved. Printed in USA.