

GENERAL DESCRIPTION

The SGM8188 series is a nano-power, high precision, high-side current-sense amplifier. The device consumes only 1.2µA (MAX) quiescent current. It features a 60µV (MAX) low offset voltage, which allows for 12-bit resolution at a very low 50mV full-scale current measurement. The device can sense the voltage across a current-sense resistor in a common mode voltage range from 1.6V to 28V. The SGM8188 series provides four fixed gains: 25V/V, 50V/V, 100V/V and 200V/V, which allows flexible selection of the external current-sense resistor.

The SGM8188 is available in a Green WLCSP-1×1-4B-A package. The tiny package makes the device an excellent choice for portable and battery-powered applications with limited size. The SGM8188 is rated over the -40°C to +125°C temperature range.

FEATURES

- **Ultra-Low Quiescent Current: 1.2µA (MAX)**
- **Input Common Mode Range: 1.6V to 28V**
- **Low Input Offset Voltage: 60µV (MAX)**
- **Choice of Gains:**
 - ◆ **SGM8188A0 Gain: 25V/V**
 - ◆ **SGM8188A1 Gain: 50V/V**
 - ◆ **SGM8188A2 Gain: 100V/V**
 - ◆ **SGM8188A3 Gain: 200V/V**
- **Low Gain Error: ±0.4% (MAX)**
- **Voltage Output**
- **-40°C to +125°C Operating Temperature Range**
- **Available in a Green WLCSP-1×1-4B-A Package**

APPLICATIONS

- Portable Equipment
- Battery-Powered Equipment
- Mobile Phones
- Laptops
- Personal Digital Assistants
- Power Management

TYPICAL APPLICATION

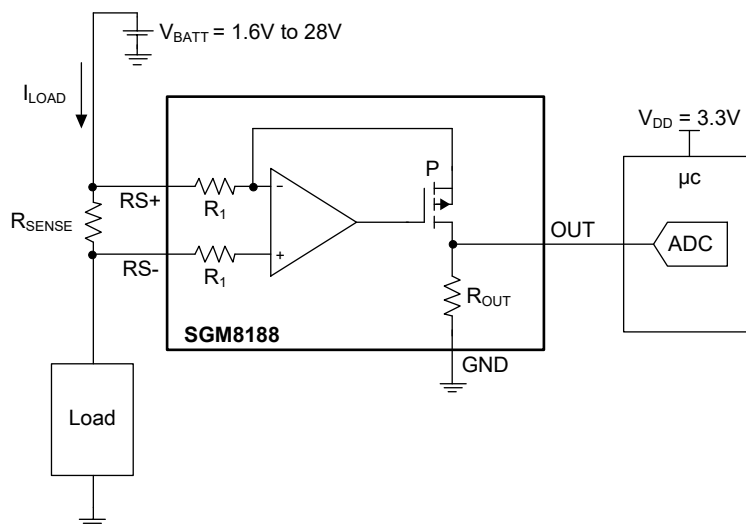
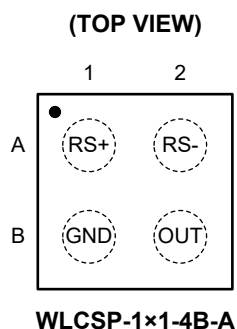


Figure 1. Typical Application Circuit

PIN CONFIGURATION

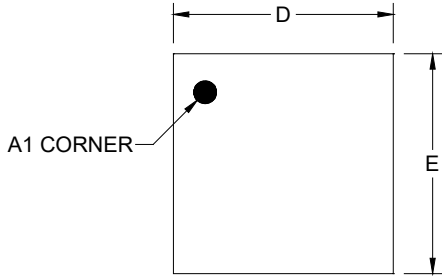


PIN DESCRIPTION

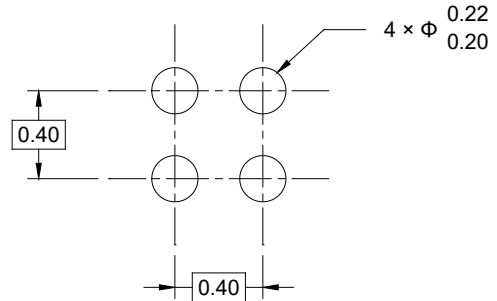
PIN	NAME	FUNCTION
A1	RS+	Power-Side Pin for the Sense Resistor.
A2	RS-	Load-Side Pin for the Sense Resistor.
B1	GND	Ground.
B2	OUT	Output Voltage. V_{OUT} and $V_{SENSE} = V_{RS+} - V_{RS-}$ are in direct proportion.

PACKAGE OUTLINE DIMENSIONS

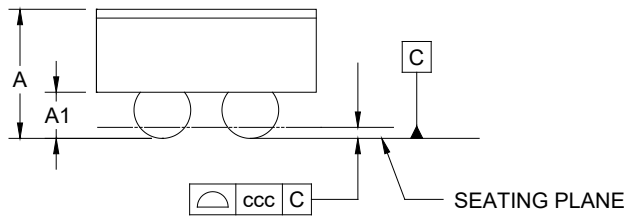
WLCSP-1×1-4B-A



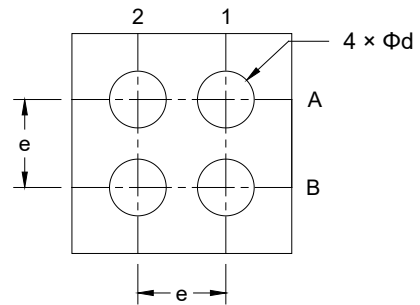
TOP VIEW



RECOMMENDED LAND PATTERN (Unit: mm)



SIDE VIEW



BOTTOM VIEW

Symbol	Dimensions In Millimeters		
	MIN	MOD	MAX
A	-	-	0.625
A1	0.190	-	0.230
D	0.975	-	1.035
E	0.975	-	1.035
d	0.228	-	0.288
e	0.400 BSC		
ccc	0.050		

NOTE: This drawing is subject to change without notice.

PACKAGE INFORMATION

TAPE AND REEL INFORMATION

REEL DIMENSIONS



TAPE DIMENSIONS



NOTE: The picture is only for reference. Please make the object as the standard.

KEY PARAMETER LIST OF TAPE AND REEL

Package Type	Reel Diameter	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P0 (mm)	P1 (mm)	P2 (mm)	W (mm)	Pin1 Quadrant
WLCSP-1×1-4B-A	7"	9.5	1.07	1.07	0.72	4.0	4.0	2.0	8.0	Q1

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PACKAGE INFORMATION

CARTON BOX DIMENSIONS



NOTE: The picture is only for reference. Please make the object as the standard.

KEY PARAMETER LIST OF CARTON BOX

Reel Type	Length (mm)	Width (mm)	Height (mm)	Pizza/Carton
7" (Option)	368	227	224	8
7"	442	410	224	18

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