

Low-Voltage Analog Temperature Sensor in Tiny Package

Features

- $\pm 1.0^{\circ}\text{C}$ Temperature Accuracy
- Supply Voltage from 2.0V to 5.5V
- Operating Range: -55°C to 130°C
- Low, $18\mu\text{A}$ Supply Current
- SOT-553, TO-126F (Full Pack) and SC-70 Package

Applications

- Cellular Phones
- Computers
- Temperature Control
- Automotive
- Battery Management

General Description

The G711 is a low-power precision analog output CMOS temperature sensor. The output voltage of G711 is proportion to temperature. The voltage to temperature ratio is about $-11.6\text{mV}/^{\circ}\text{C}$. The G711 can operate over a range of -55°C to $+130^{\circ}\text{C}$ with a power supply voltage of $+2.5\text{V}$ to $+5.5\text{V}$. The transfer function of G711 is almost linear, and the accuracy is $\pm 1.5^{\circ}\text{C}$ at $+30^{\circ}\text{C}$.

The quiescent current of G711 is about $18\mu\text{A}$, so that the self-heating effects can be ignored.

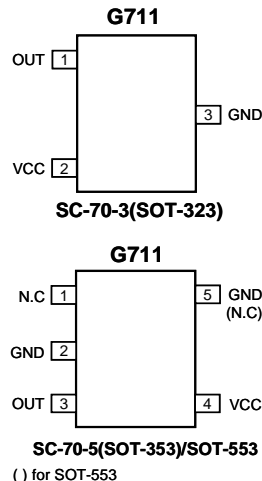
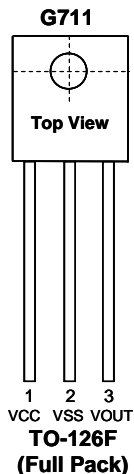
Because of the wide supply voltage range, the operating temperature range varies with the voltage supply. The G711 can be used over a range of -55°C to $+130^{\circ}\text{C}$ with a supply voltage of 2.5V to 5.5V . For lower supply voltage of 2.0V , the G711 can be used over a temperature range of 0°C to $+130^{\circ}\text{C}$.

Ordering Information

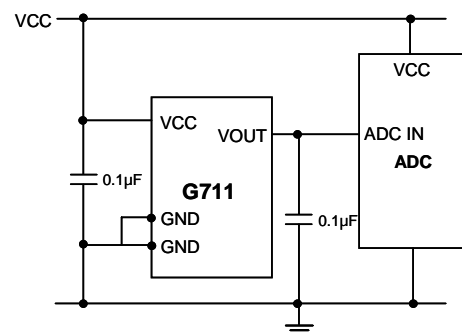
ORDER NUMBER	MARKING	TEMP. ACCURACY	TEMP. RANGE	PACKAGE (Pb free/Green)
G711BTN1B	G711B	$\pm 2.0^{\circ}\text{C}$	$-55^{\circ}\text{C} \sim +130^{\circ}\text{C}$	TO-126F
G711STN1B	G711S	$\pm 3.5^{\circ}\text{C}$	$-55^{\circ}\text{C} \sim +130^{\circ}\text{C}$	TO-126F
G711BTQ1U	7Bx	$\pm 2.0^{\circ}\text{C}$	$-55^{\circ}\text{C} \sim +130^{\circ}\text{C}$	SOT-553
G711STQ1U	7Sx	$\pm 3.5^{\circ}\text{C}$	$-55^{\circ}\text{C} \sim +130^{\circ}\text{C}$	SOT-553
G711BT9U	711Bx	$\pm 2.0^{\circ}\text{C}$	$-55^{\circ}\text{C} \sim +130^{\circ}\text{C}$	SC-70-3(SOT-323)
G711ST9U	711Sx	$\pm 3.5^{\circ}\text{C}$	$-55^{\circ}\text{C} \sim +130^{\circ}\text{C}$	SC-70-3(SOT-323)
G711BTAU	711Bx	$\pm 2.0^{\circ}\text{C}$	$-55^{\circ}\text{C} \sim +130^{\circ}\text{C}$	SC-70-5(SOT-353)
G711STAU	711Sx	$\pm 3.5^{\circ}\text{C}$	$-55^{\circ}\text{C} \sim +130^{\circ}\text{C}$	SC-70-5(SOT-353)

Note: TN: TO-126F T9: SC-70-3(SOT-323) TA: SC-70-5(SOT-353) TQ: SOT-553
 1: Bonding Code (only TO-126F, SOT-553)
 B: Bag U: Tape & Reel

Pin Configuration



Typical Application Circuit



$$\text{VOUT} = -3 \times 10^{-6} \times T^2 - 1.14 \times 10^{-2} \times T + 1.8675$$