

LTC6810-1/LTC6810-2

ORDER INFORMATION

TUBE	TAPE AND REEL	PART MARKING	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE
LTC6810IG-1#3ZZPBF	LTC6810IG-1#3ZZTRPBF	LTC6810G-1	44-Lead Plastic SSOP	-40°C to 85°C
LTC6810HG-1#3ZZPBF	LTC6810HG-1#3ZZTRPBF	LTC6810G-1	44-Lead Plastic SSOP	-40°C to 125°C
LTC6810IG-2#3ZZPBF	LTC6810IG-2#3ZZTRPBF	LTC6810G-2	44-Lead Plastic SSOP	-40°C to 85°C
LTC6810HG-2#3ZZPBF	LTC6810HG-2#3ZZTRPBF	LTC6810G-2	44-Lead Plastic SSOP	-40°C to 125°C

*The temperature grade is identified by a label on the shipping container.
Parts ending with PBF are RoHS and WEEE compliant.

ELECTRICAL CHARACTERISTICS The ● denotes the specifications which apply over the full operating temperature range, otherwise specifications are at $T_A = 25^\circ\text{C}$. The test conditions are $V^+ = 19.8\text{V}$, $V_{\text{REG}} = 5.0\text{V}$ unless otherwise noted. The ISOMD pin is tied to the V^- pin, unless otherwise noted.

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
ADC DC Specifications						
	Measurement Resolution			0.1		mV/bit
	ADC Offset Voltage	(Note 2)		0.1		mV
	ADC Gain Error	(Note 2)		0.03		%
			●	0.06		%
	Total Measurement Error (TME) in Normal Mode (Note 3)	C(n) to C(n-1), S(n) to S(n-1), GPIO(n) to $V^- = 0$		±0.2		mV
		C(n) to C(n-1) = 2.0, GPIO(n) to $V^- = 2.0$		±0.1	±1.2	mV
		S(n) to S(n-1) = 2.0			±1.7	mV
		C(n) to C(n-1), GPIO(n) to $V^- = 2.0$	●		±1.6	mV
		S(n) to S(n-1) = 2.0	●		±2.2	mV
		C(n) to C(n-1), GPIO(n) to $V^- = 3.3$		±0.2	±1.8	mV
		S(n) to S(n-1) = 3.3			±2.5	mV
		C(n) to C(n-1), GPIO(n) to $V^- = 3.3$	●		±2.4	mV
		S(n) to S(n-1) = 3.3	●		±3.2	mV
		C(n) to C(n-1) = 4.2		±0.3	±2.3	mV
		S(n) to S(n-1) = 4.2			±3.2	mV
		C(n) to C(n-1), GPIO(n) to $V^- = 4.2$	●		±3.1	mV
		S(n) to S(n-1) = 4.2	●		±4.1	mV
	C(n) to C(n-1), S(n) to S(n-1), GPIO(n) to $V^- = 5.0$			±1	mV	
	Sum of Cells	●		±0.1	±0.25	%
	Internal Temperature, T = Maximum Specified Temperature			±5	0.6	°C
	V_{REG} Pin	●		±0.1	±0.25	%
	V_{REF2} Pin	●		±0.02	±0.1	%
	Digital Supply Voltage, V_{REGD}	●		±0.1	±1	%

ELECTRICAL CHARACTERISTICS The ● denotes the specifications which apply over the full operating temperature range, otherwise specifications are at $T_A = 25^\circ\text{C}$. The test conditions are $V^+ = 19.8\text{V}$, $V_{\text{REG}} = 5.0\text{V}$ unless otherwise noted. The ISOMD pin is tied to the V^- pin, unless otherwise noted.

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS	
	Total Measurement Error (TME) in Filtered Mode (Note 3)	C(n) to C(n-1), S(n) to S(n-1), GPIO(n) to $V^- = 0$		±0.1		mV	
		C(n) to C(n-1) = 2.0, GPIO(n) to $V^- = 2.0$		±0.1	±1.2	mV	
		S(n) to S(n-1) = 2.0			±1.7	mV	
		C(n) to C(n-1), GPIO(n) to $V^- = 2.0$	●		±1.6	mV	
		S(n) to S(n-1) = 2.0	●		±2.2	mV	
		C(n) to C(n-1) = 3.3		±0.2	±1.8	mV	
		S(n) to S(n-1) = 3.3			±2.5	mV	
		C(n) to C(n-1), GPIO(n) to $V^- = 3.3$	●		±2.4	mV	
		S(n) to S(n-1) = 3.3	●		±3.2	mV	
		C(n) to C(n-1) = 4.2		±0.3	±2.3	mV	
		S(n) to S(n-1) = 4.2			±3.2	mV	
		C(n) to C(n-1), GPIO(n) to $V^- = 4.2$	●		±3.1	mV	
		S(n) to S(n-1) = 4.2	●		±4.1	mV	
		C(n) to C(n-1), S(n) to S(n-1), GPIO(n) to $V^- = 5.0$			±1	mV	
Sum of Cells	●		±0.1	±0.25	%		
Internal Temperature, T = Maximum Specified Temperature			±5	0.6	°C		
V_{REG} Pin	●		±0.1	±0.25	%		
V_{REF2} Pin	●		±0.02	±0.1	%		
Digital Supply Voltage, V_{REGD}	●		±0.1	±1	%		
	Total Measurement Error (TME) in Fast Mode (Note 3)	C(n) to C(n-1), S(n) to S(n-1), GPIO(n) to $V^- = 0$		±2		mV	
		C(n) to C(n-1), GPIO(n) to $V^- = 2.0$	●		4	mV	
		S(n) to S(n-1) = 2.0	●		5	mV	
		C(n) to C(n-1), GPIO(n) to $V^- = 3.3$	●		5.5	mV	
		S(n) to S(n-1) = 3.3	●		6.5	mV	
		C(n) to C(n-1), GPIO(n) to $V^- = 4.2$	●		8	mV	
		S(n) to S(n-1) = 4.2	●		9	mV	
		C(n) to C(n-1), GPIO(n) to $V^- = 5.0$, S(n) to S(n-1) = 5.0			±10	mV	
		Sum of Cells	●		±0.15	±1	%
		Internal Temperature, T = Maximum Specified Temperature			±5		°C
		V_{REG} Pin	●		±0.3	±1	%
V_{REF2} Pin	●		±0.1	±0.25	%		
Digital Supply Voltage, V_{REGD}	●		±0.2	±2	%		
	Input Range	C(n) n = 1 to 6	●	C(n-1)	C(n-1) + 5	V	
		S(n) n = 1 to 6	●	C(n-1)	C(n+1)	V	
		CO/SO	●	0	5	V	
		GPIO(n) n = 1 to 4	●	0	5	V	
I_L	Input Leakage Current When Inputs Are Not Being Measured (State: Core = STANDBY)	C(n), S(n), n = 0 to 6	●	10	±250	nA	
		GPIO(n) n = 1 to 4	●	10	±250	nA	
	Input Current When Inputs Are Being Measured	C(n)/S(n) n = 0 to 6		±1		μA	
		GPIO(n) n = 1 to 4		±1		μA	
	Input Current During Open Wire Detection		●	70	110	140	μA