



## General Description

The MAX810 series are highly accurate, low power consumption voltage detectors, manufactured using CMOS and laser trimming technologies.

A delay circuit is built-in to each detectors.

Detect voltage is extremely accurate with minimal temperature drift.

Since the delay circuit is built-in, peripherals are unnecessary and high density mounting is possible.

## Pin Assignment



SOT-23

PIN NO.	PIN NAME	FUNCTION
1	GND	GND pin
2	VCC	Input voltage pin
3	Reset	Reset pin

## Features

- Low power consumption
- Low temperature coefficient
- Built-in delay circuit: 200ms
- High input voltage (up to 6V)
- Output voltage accuracy: tolerance  $\pm 2\%$
- SOT-23 package

## Applications

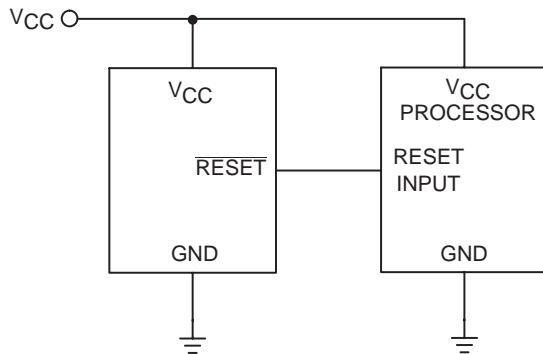
- Computers
- Embedded Systems
- Power on reset circuits
- Battery Powered Equipment
- Critical uP Power Supply Monitoring

## Selection Table

Part No	Detectable Voltage	Delay Time	Tolerance	Package
MAX810L	4.63V	200ms	$\pm 2\%$	SOT-23
MAX810M	4.38V		$\pm 2\%$	
MAX810J	4.00V		$\pm 2\%$	
MAX810T	3.08V		$\pm 2\%$	
MAX810S	2.93V		$\pm 2\%$	
MAX810R	2.63V		$\pm 2\%$	



## Application Circuits



## Absolute Maximum Ratings

Input Voltage .....-0.3V to VCC+0.3V Storage Temperature .....-40°C to 125°C  
Operating Temperature .....-40°C to 85°C

Note: These are stress ratings only. Stresses exceeding the range specified under “Absolute Maximum Ratings” may cause substantial damage to the device. Functional operation of this device at other conditions beyond those listed in the specification is not implied and prolonged exposure to extreme conditions may affect device reliability.

## Thermal Information

Symbol	Parameter	Max.	Unit
$\theta_{JA}$	Thermal Resistance (Junction to Ambient) (Assume no ambient airflow, no heat sink)	260	°C/W
$P_D$	Power Dissipation	0.23	W

Note:  $P_D$  is measured at  $T_a = 25^\circ\text{C}$

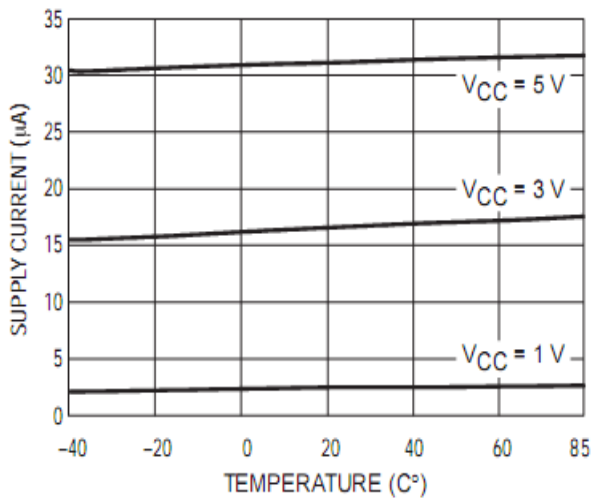


### Electrical Characteristics

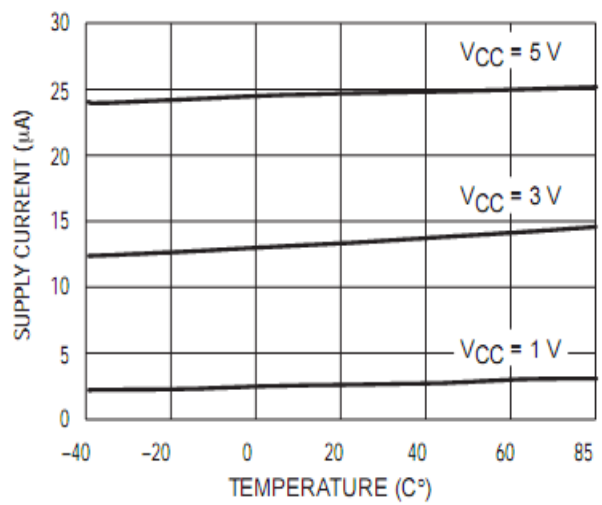
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V <sub>CC</sub>	Input Voltage (V <sub>CC</sub> ) Range	TA=25°C	1.2		5.5	V
I <sub>SS</sub>	Supply Current	MAX810L/M/J:VCC < 5.5V MAX810R/S/T:VCC < 3.6V		24 17	60 50	μA
V <sub>DET</sub>	Reset Threshold	MAX810L:TA=25°C	4.56	4.63	4.70	V
		MAX810M:TA=25°C	4.31	4.38	4.45	
		MAX810J:TA=25°C	3.93	4.00	4.06	
		MAX810T:TA=25°C	3.04	3.08	3.11	
		MAX810S:TA=25°C	2.89	2.93	2.96	
		MAX810R:TA=25°C	2.59	2.63	2.66	
	Reset Threshold Stability			30		Ppm/ °C
	V <sub>CC</sub> to Reset Delay	V <sub>CC</sub> = V <sub>TH</sub> to V <sub>TH</sub> -100mV		20		us
V <sub>OL</sub>	RESET Output Voltage Low	MAX810L/M/J:VCC=V <sub>TH</sub> min, I <sub>SINK</sub> =1.2mA MAX810R/S/T:VCC=V <sub>TH</sub> min, I <sub>SINK</sub> =3.2mA			0.4 0.3	V
V <sub>OH</sub>	RESET Output Voltage High	1.8 < V <sub>CC</sub> < V <sub>TH</sub> min, I <sub>SOURCE</sub> =150uA	0.8 V <sub>CC</sub>			V



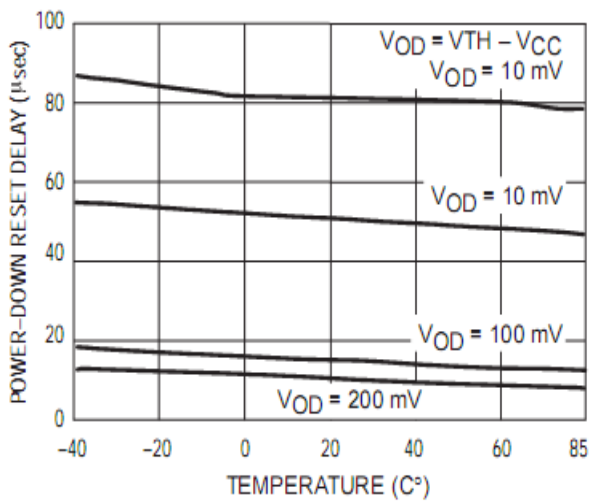
### Typical Characteristics



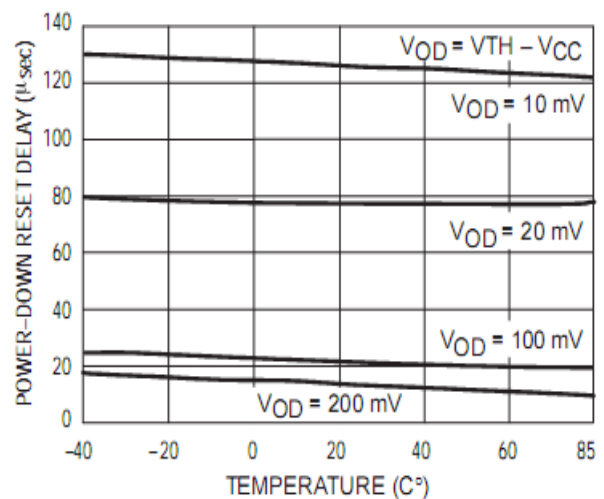
Supply Current vs Temperature  
(No Load, MAX810R/S/T)



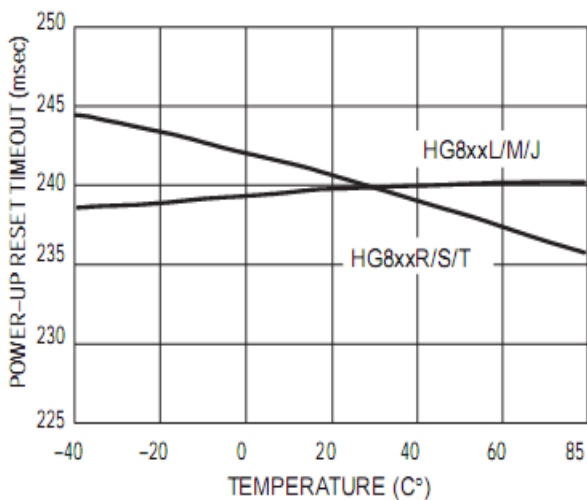
Supply Current vs Temperature  
(No Load, MAX810L/M/J)



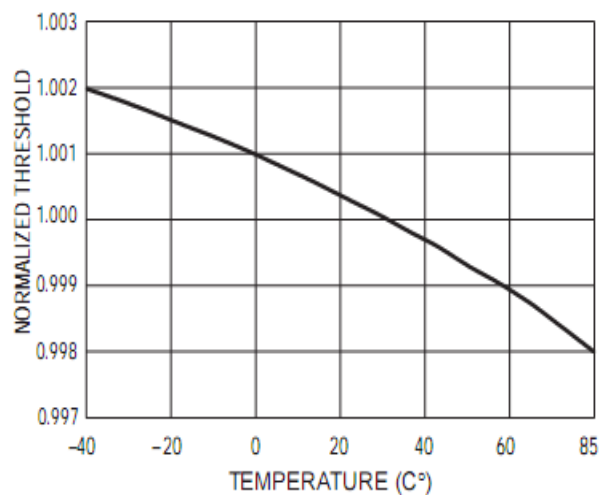
Power-Down Reset Delay vs  
Temperature and Overdrive (MAX810R/S/T)



Power-Down Reset Delay vs  
Temperature and Overdrive (MAX810L/M/J)



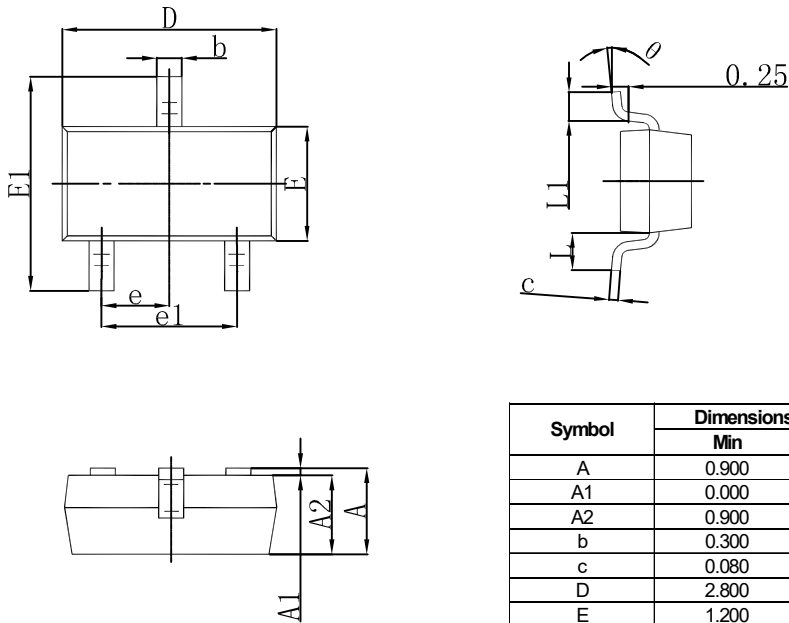
Power-Up Reset Timeout vs  
Temperature



Normalized Reset Threshold vs  
Temperature

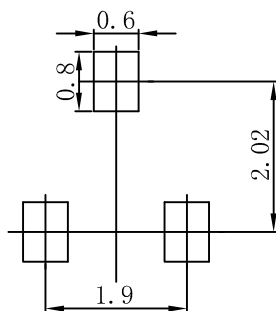


### SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

### SOT-23 Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance:  $\pm 0.05\text{mm}$ .
  3. The pad layout is for reference purposes only.



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