General Description

The MAX811 is low-power microprocessor (µP) supervisory circuits used to monitor power sup-plies in µP and digital systems.
They provide excellent circuit reliability and low cost by eliminating external components and adjustments when used with 5V-powered or 3V-powered circuits.
The MAX811 also provide a debounced manual reset input.
The only difference between the two devices is that the MAX811 has an active-low RESET output (which is guaranteed to be in the correct state for VCC down to 1V).
Reset thresholds are available for operation with a variety of supply voltages.

Features

- Precision Monitoring of 3V, 3.3V, and 5V Power-Supply Voltages
- 140ms Min Power-On Reset Pulse Width
- Guaranteed Over Temperature
- Guaranteed RESET Valid to VCC = 1V
- SOT-143 package

Pin Assignment

Pin 1
SOT-143

PIN NO	PIN NAME	FUNCTION
1	GND	Ground
2	RESET	Active-Low Reset Output
3	MR	Manual Reset Input
4	VCC	Supply Voltage

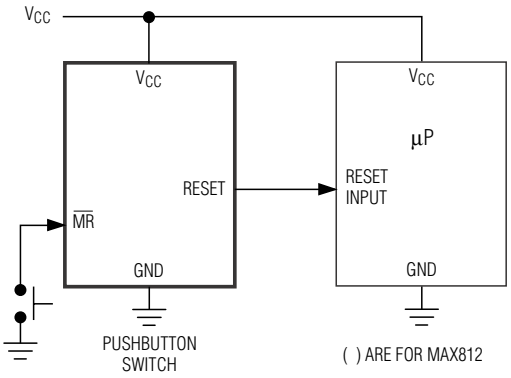
Applications

- Computers
- Controllers
- Intelligent Instruments
- Portable/Battery-Powered Equipment

Selection Table

Part No	Detectable Voltage	Package
MAX810L	4.63V	SOT-143
MAX810M	4.38V	
MAX810T	3.08V	
MAX810S	2.93V	
MAX810R	2.63V	

Application Circuits



Absolute Maximum Ratings

Input Voltage .....-0.3V to 6.0V Storage Temperature .....-40℃ to 125℃

Operating Temperature .....-40℃ to 85℃

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

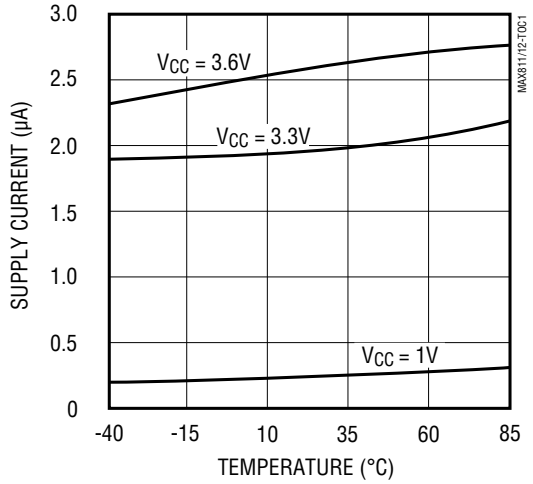
Symbol	Parameter	Max.	Unit
θ_{JA}	Thermal Resistance (Junction to Ambient) (Assume no ambient airflow, no heat sink)	260	℃/W
P_D	Power Dissipation	0.32	W

Note: P_D is measured at Ta= 25℃

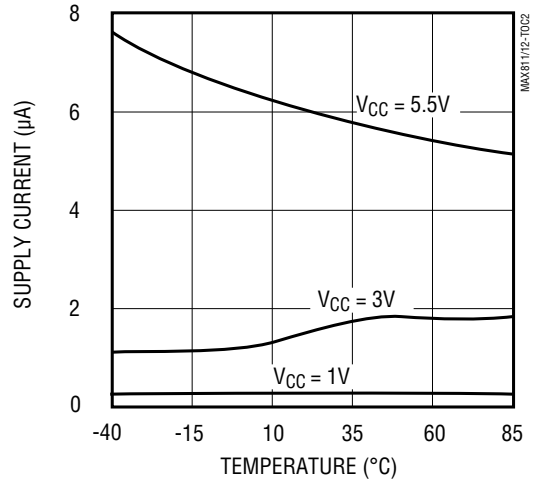
Electrical Characteristics

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_{CC}	Input Voltage (V_{CC}) Range	TA=25℃	1.2		5.5	V
I_{SS}	Supply Current	MAX811L/M:VCC＜5.5V MAX811R/S/T:VCC＜3.6V		6 2.7	15 10	μA
V_{DET}	Reset Threshold	MAX811L:TA=25℃	4.54	4.63	4.72	V
		MAX811MTA=25℃	4.30	4.38	4.46	
		MAX811T:TA=25℃	3.03	3.08	3.14	
		MAX811S:TA=25℃	2.88	2.93	2.98	
		MAX811R:TA=25℃	2.58	2.63	2.68	
	Reset Threshold Stability			30		Ppm/℃
	V_{CC} to Reset Delay	VOD=125mV,MAX811L/M: VOD=125mV,MAX811R/S/T:		40 20		us
t_{RP}	Reset Threshold Tempco	VCC=VTH(MAX)	140		560	ms
t_{MR}	MR Minimum Pulse Width Tempco		10			us
	MR Glitch Immunity			100		ns
t_{MD}	MR to Reset Propagation Delay			0.5		us
V_{IH}	MR Input Threshold	VCC＞VTH(MAX),MAX811L/M	2.3			V
V_{IL}					0.8	
V_{IH}		VCC＞VTH(MAX),MAX811R/S/T	0.7xVCC			
V_{IL}					0.25xVCC	
t_{MD}	MR Pull-Up Resistance		10	20	30	kΩ
V_{OL}	RESET Output Voltage Low	MAX811L/M:VCC=VTH min,ISINK=1.2mA MAX811R/S/T:VCC=VTH min,ISINK=3.2mA ISINK=50uA,VCC＞1.0V			0.4 0.3	V
V_{OH}	RESET Output Voltage High	MAX811L/M only,ISOURCE=150uA MAX811R/S/T only,ISOURCE=150uA VCC＞VTH(MAX)	0.8 VCC VCC-1.5			V

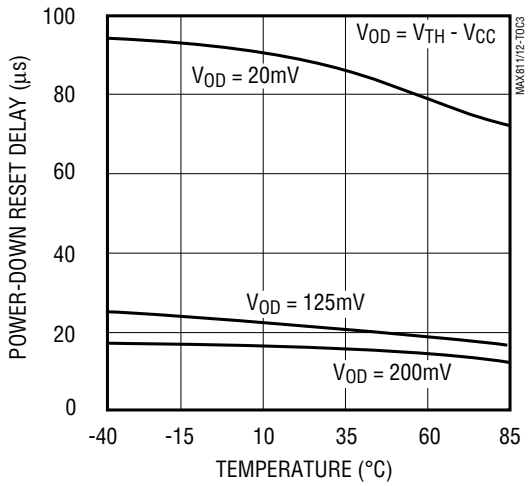
Typical Characteristics



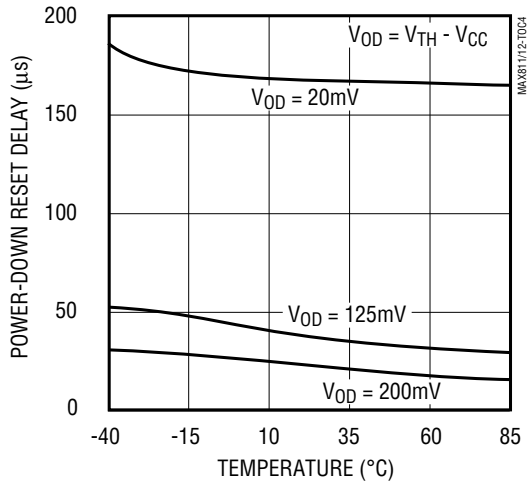
Supply Current vs Temperature (No Load, MAX811R/S/T)



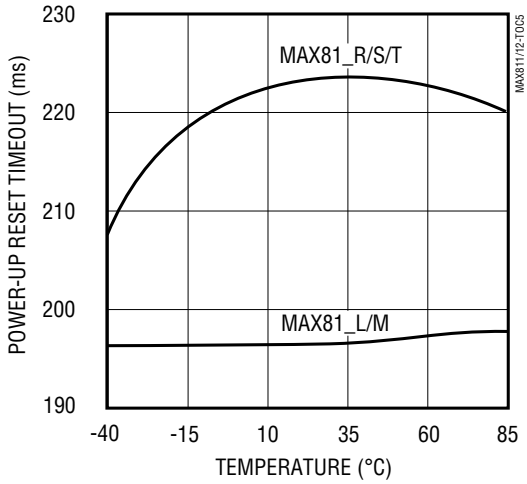
Supply Current vs Temperature (No Load,MAX811L/M/)



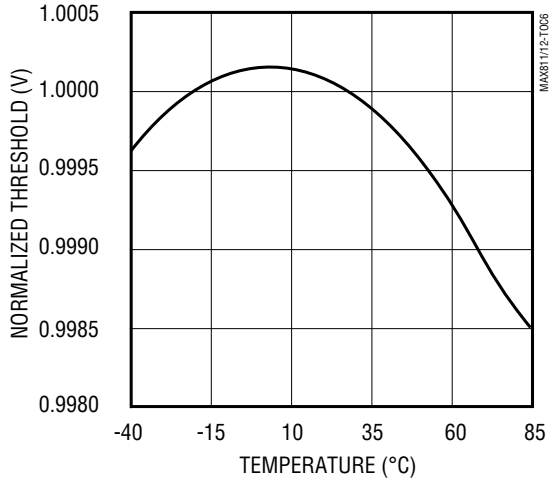
Power–Down Reset Delay vs Temperature and (MAX811R/S/T)



Power–Down Reset Delay vs Temperature and (MAX811L/M)

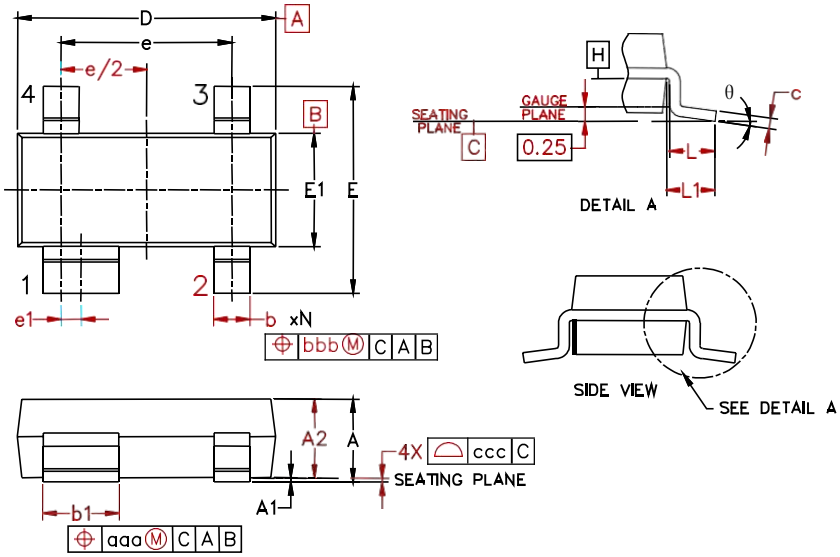


Power–Up Reset Timeout vs Temperature



Normalized Reset Threshold vs Temperature

SOT-143 Package Outline Dimensions



Symbol	Inches			Millimeters		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.031	-	0.048	0.80	-	1.22
A1	0.000	-	0.008	0.013	-	0.15
A2	0.020	0.035	0.042	0.75	0.90	1.07
b	0.011	-	0.020	0.30	-	0.51
b1	0.029	-	0.037	0.76	-	0.94
c	0.003	-	0.008	0.08	-	0.20
D	0.110	0.114	0.120	2.80	2.90	3.04
E	0.082	0.093	0.104	2.10	2.37	2.64
E1	0.047	0.051	0.055	1.20	1.30	1.40
e	0.075			1.92 BSC		
e1	0.008			0.20 BSC		
L	0.015	0.020	0.024	0.40	0.50	0.60
L1	(0.021)			(0.54)		
N	4			4		
θ	0°	-	8°	0°	-	8°
aaa	0.006			0.15		
bbb	0.008			0.20		
ccc	0.004			0.10		

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