



General Description

The MAX809 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.

Features

- Low power consumption
- Low temperature coefficient
- Built-in delay circuit: 200ms
- High input voltage (up to 8V)
- Output voltage accuracy: tolerance $\pm 2\%$
- SOT23 ,SOT23-3 and SOT89 package

Applications

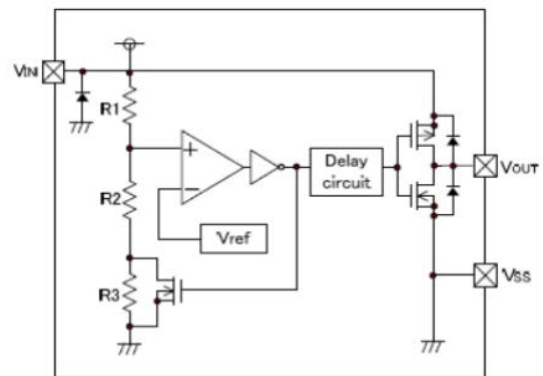
- Microprocessor reset circuitry
- Memory battery back-up circuits
- Power on reset circuits
- System battery life and charge voltage monitors
- Delay circuitry
- Power failure detection

Pin Assignment



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

Block Diagram

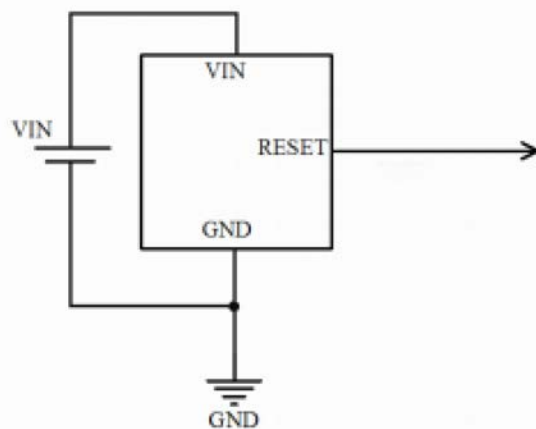


Selection Table

Part No	Detectable Voltage	Marking	Delay Time	Tolerance	Package
MAX809S-438	4.38V	ABAA	200ms	$\pm 2\%$	SOT-23 SOT-23-3L
MAX809S-400	4.00V	CWAA		$\pm 2\%$	
MAX809S-308	3.08V	ACAA		$\pm 2\%$	
MAX809S-293	2.93V	ADAA		$\pm 2\%$	
MAX809S-263	2.63V	AFAA		$\pm 2\%$	



Application Circuits



Absolute Maximum Ratings

Input Voltage-0.3V to 8.0V Storage Temperature-40°C to 125°C

Operating Temperature-30°C to 80°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
θ_{JA}	Thermal Resistance (Junction to Ambient) (Assume no ambient airflow, no heat sink)	250	°C/W
P_D	Power Dissipation	0.20	W

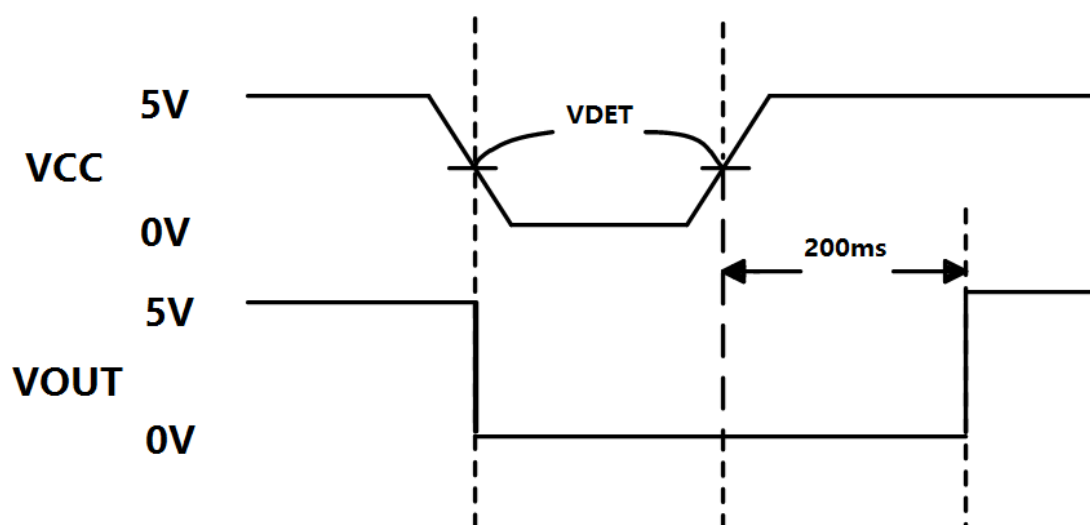
Note: P_D is measured at $T_a = 25^\circ\text{C}$



Electrical Characteristics

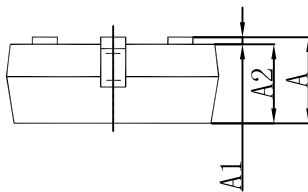
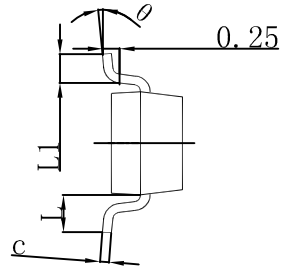
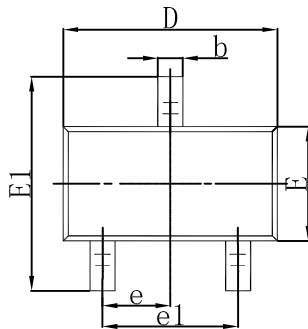
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_{CC}	Input Voltage (V_{CC}) Range	25°C	1.2		7.5	V
I_{SS}	Supply Current	$V_{IN}=6V$, $V_{DET}=2.63V$	1	1.8	2.5	μA
V_{DET}	Reset Threshold	$T_A=25^{\circ}C$	4.56	4.63	4.70	V
		$T_A=25^{\circ}C$	4.31	4.38	4.45	
		$T_A=25^{\circ}C$	3.93	4.00	4.06	
		$T_A=25^{\circ}C$	3.04	3.08	3.11	
		$T_A=25^{\circ}C$	2.89	2.93	2.96	
		$T_A=25^{\circ}C$	2.59	2.63	2.66	
	Reset Threshold Stability			30		Ppm/ °C
	V_{CC} to Reset Delay	$V_{CC}=V_{TH}$ to $V_{TH}-100mV$		20		μs
V_{OL}	Reset Active Timeout Period		100	200	300	ms

Timing Chart



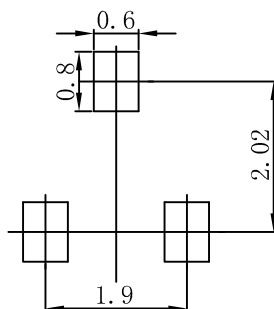


SOT-23 Package Outline Dimensions



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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