

Power Supply Supervisor

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. Both CMOS and N-ch open drain output configurations are available. 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 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

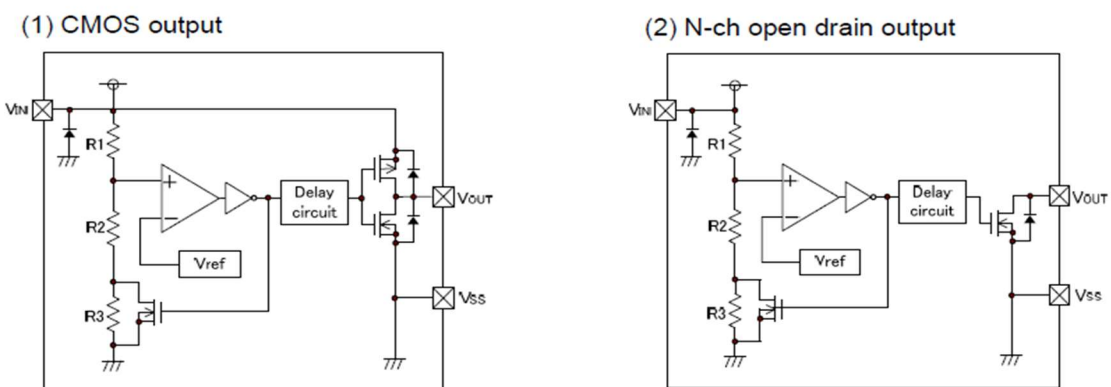
Order Information

| Part No | Mark | Detectable Voltage | Package | Devices per reel |
|------------|------|--------------------|---------|------------------|
| MAX809C263 | AFAA | 2.63V | SOT23 | 3000PCS |
| MAX809C293 | ADAA | 2.93V | | |
| MAX809C308 | ACAA | 3.08V | | |
| MAX809C400 | CWAA | 4.00V | | |
| MAX809C438 | ABAA | 4.38V | | |
| MAX809N263 | BFAA | 2.63V | | |
| MAX809N293 | BDAA | 2.93V | | |
| MAX809N308 | BCAA | 3.08V | | |
| MAX809N400 | BWAA | 4.00V | | |
| MAX809N438 | BBAA | 4.38V | | |

Note:MAX809①②③④

| Designator | Symbol | Description |
|------------|--------|----------------|
| ① | C | CMOS output |
| | N | NMOS output |
| ② | XXX | Detect voltage |
| ③ | N | Package:SOT23 |
| ④ | R | RoHS/PbFree |
| | G | Halogen Free |

Block Diagram



Pin Assignment

SOT23 (TOP VIEW)

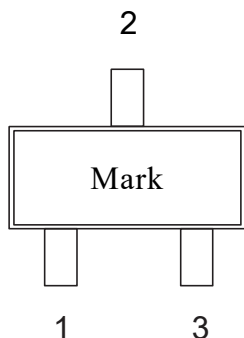


Table1 MAX809C/MAX809N series (SOT23 PKG)

| Pin No. | Pin Name | Function |
|---------|------------|-------------------|
| 1 | GND | GND pin |
| 2 | VIN | Input voltage pin |
| 3 | Vout/Reset | Vout/Reset pin |

Functional 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.

Absolute Maximum Ratings

| Parameter | Symbol | Value | Unit |
|-----------------------|--------|----------|------|
| Input Voltage | VIN | -0.3~8.0 | V |
| Operating Temperature | Tamb | -30~80 | °C |
| Storage Temperature | Tstg | -40~125 | °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.

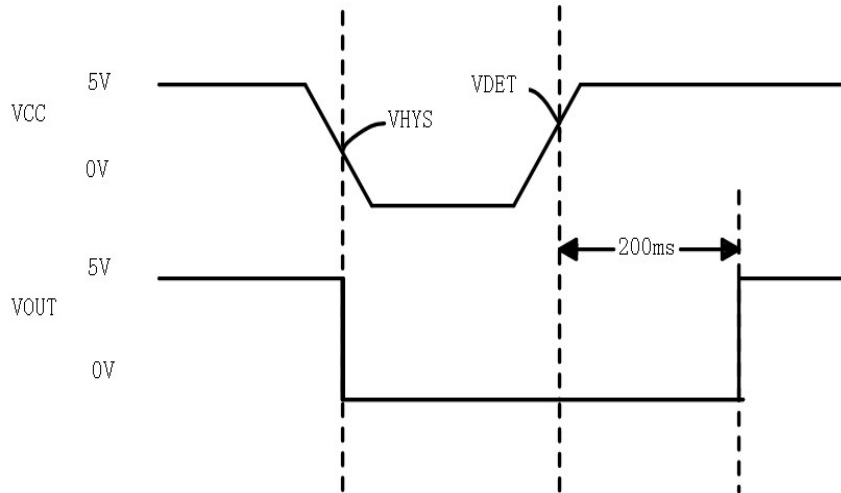
Thermal Information

| Parameter | Symbol | Max. | Unit |
|--|----------------|------|------|
| Thermal Resistance (Junction to Ambient) (Assume no ambient airflow, no heat sink) | θ_{JA} | 250 | °C/W |
| Power Dissipation | P _D | 0.20 | W |

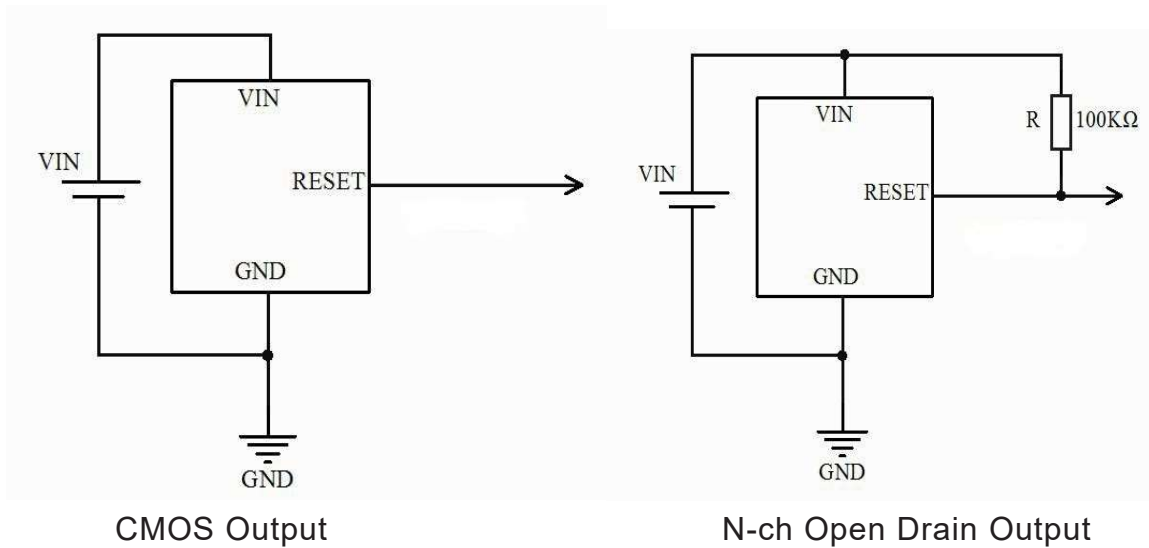
Electrical Characteristics

| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|----------------------------------|--------|------------------------|------|------|------|------------|
| Input Voltage (VCC) Range | VCC | 25°C | 1.2 | | 7.5 | V |
| Supply Current | ISS | VIN=6V, Vdet=2.63V | 1 | 1.8 | 2.5 | μ A |
| Vout/Reset Threshold | VDET | TA=25°C | 4.56 | 4.63 | 4.70 | V |
| | | TA=25°C | 4.31 | 4.38 | 4.45 | |
| | | TA=25°C | 3.93 | 4.00 | 4.06 | |
| | | TA=25°C | 3.04 | 3.08 | 3.11 | |
| | | TA=25°C | 2.89 | 2.93 | 2.96 | |
| | | TA=25°C | 2.59 | 2.63 | 2.66 | |
| Vout/Reset Threshold Stability | | | | 30 | | Ppm/ °C |
| VCC to Vout/Reset Delay | | VCC=VTH to VTH - 100mV | | 20 | | us |
| Vout/Reset Active Timeout Period | VOL | | | 200 | | ms |

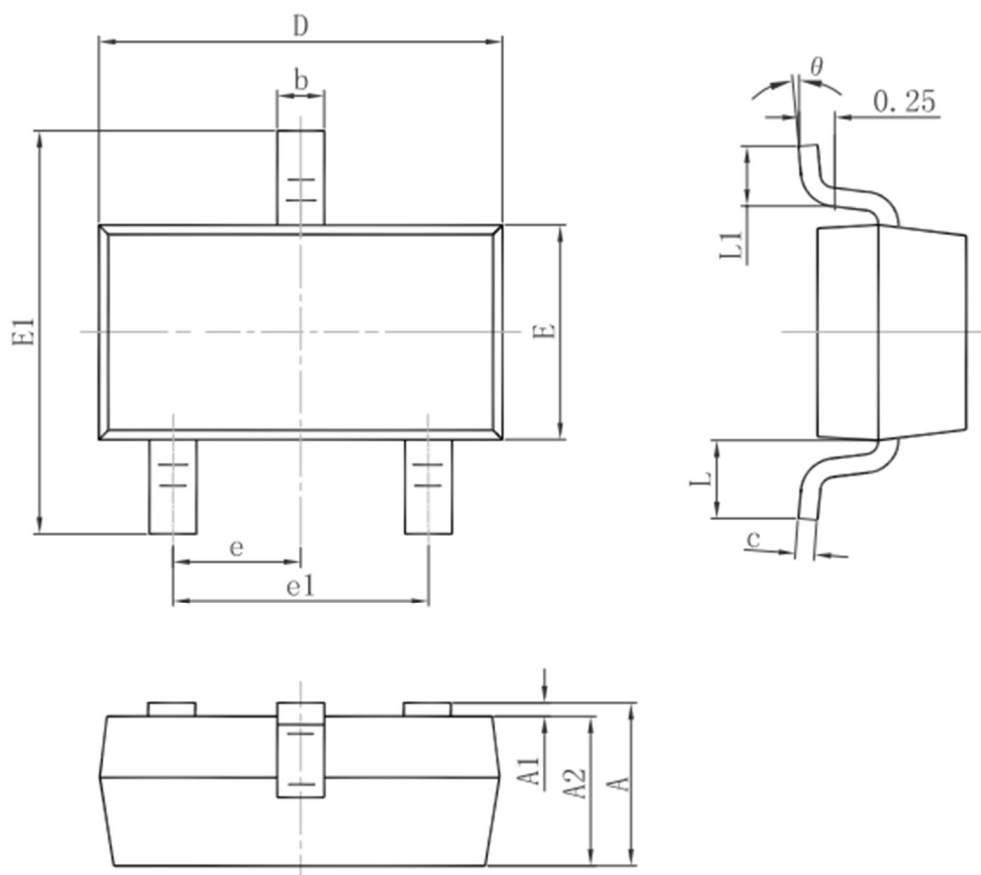
Timing Chart



Application Circuits



Package Information (SOT23)



| 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 | 0.950TYP. | | 0.037TYP. | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550REF. | | 0.022REF. | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 8° |

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