

Micro-Power Voltage Detectors

General Description

The **Ac 908** is a micro-power voltage detector supervising the power supply voltage level for microprocessors (μP) or digital systems. It provides internally fixed threshold levels with 0.1V per step ranging from 1.5V to 5V, which covers most digital applications. It features low supply current of $3\mu\text{A}$.

The **Ac 908** performs supervisory function by sending out a reset signal whenever the V_{DD} voltage falls below a preset threshold level. This reset signal will last the whole period before V_{DD} recovering. Once V_{DD} recovered up-crossing the threshold level, the reset signal will be released if V_{DD} is above threshold and last for the whole period of reset active time out.

Ac 908 is N-Channel, open-drain output.

Ordering Information

Ac 908 -□□□□	
	Package Type V : SOT-23-3
	Operating Temperature Range
	P : Pb Free with Commercial Standard
	Reset Threshold
	15 : 1.5V
	16 : 1.6V
	⋮
	49 : 4.9V
	50 : 5.0V

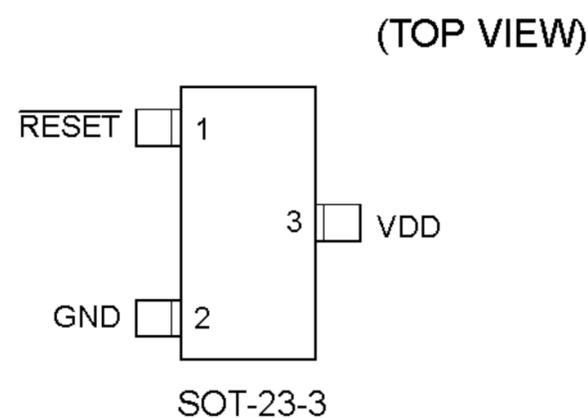
Features

- Internally Fixed Threshold 1.5V to 5V in 0.1V Step
- $\pm 2\%$ Accuracy
- Low Supply Current $3\mu\text{A}$
- Quick Reset within $20\mu\text{s}$
- Built-in Recovery Delay 200ms
- Low Functional Supply Voltage 0.9V
- N-Channel Open Drain Output
- Small 3-Pin SOT-23-3/SOT89 and 5-Pin SOT-23-5 Packages
- RoHS Compliant and 100% Lead (Pb)-Free

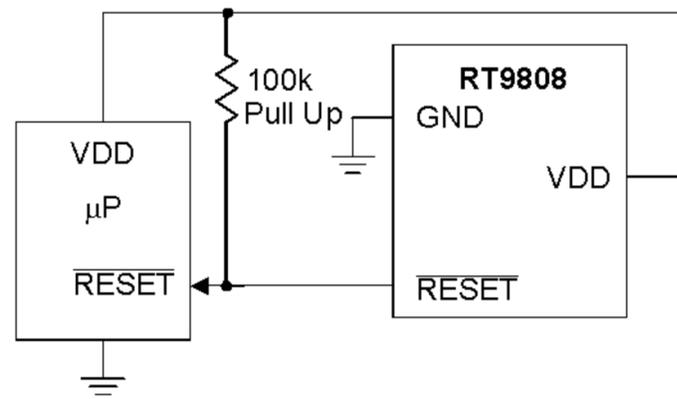
Applications

- Computers
- Controllers
- Intelligent Instruments
- Critical mP and mC Power Monitoring
- Portable/Battery-Powered Equipment

Pin Configurations



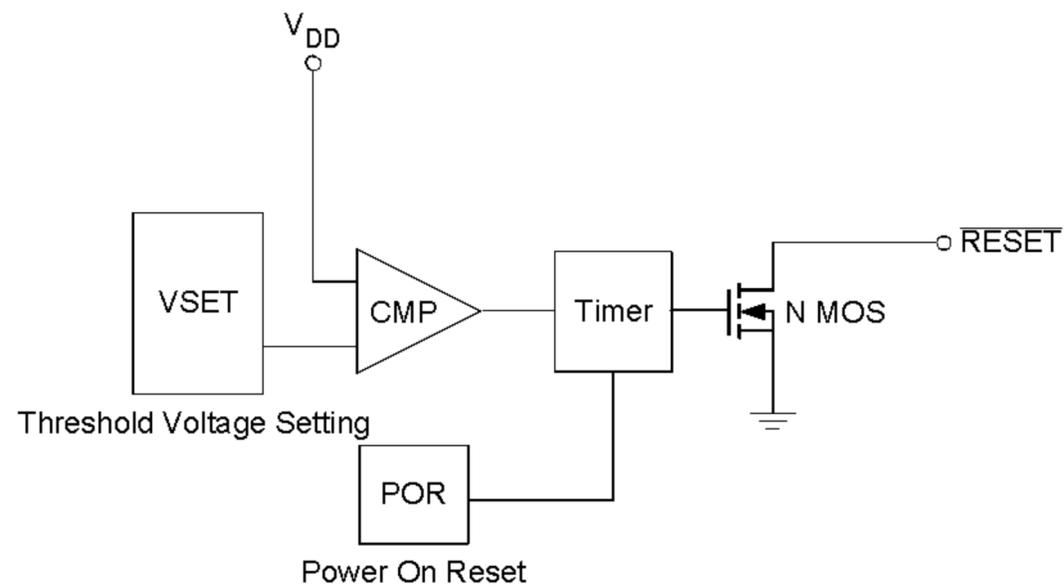
Typical Application Circuit



Functional Pin Description

Pin Name	Pin Function
GND	Ground Pin
$\overline{\text{RESET}}$	Reset Pulse Output, Negative Pulse
VDD	Power Pin
NC	No Connected

Function Block Diagram



Absolute Maximum Ratings

- Terminal Voltage (with Respect to GND)
 - V_{DD} ----- -0.3V to 6.0V
 - All Other Inputs ----- -0.3V to $V_{DD}+0.3V$
- Input Current, V_{DD} ----- 20mA
- Output Current, RESET ----- 20mA
- Power Dissipation, $P_D @ T_A = 25^\circ C$
 - SOT-23-3 ----- 0.25W

- Operating Junction Temperature Range ----- $-40^\circ C$ to $125^\circ C$
- Storage Temperature Range ----- $-65^\circ C$ to $125^\circ C$
- Package Thermal Resistance
 - SOT-23-3, θ_{JA} ----- $250^\circ C/W$

- Lead Temperature (Soldering, 10 sec.) ----- $260^\circ C$

Electrical Characteristics

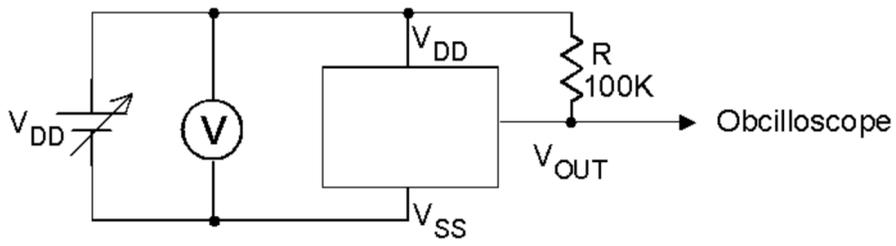
($V_{DD} = 3.0$, unless specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Operating VDD (V_{OUT}) Range	V_{DD}		0.9	--	6	V
Supply Current	I_{DD}	$V_{DD} = 1.5V \sim 5V, I_{OUT} = 0$	--	3	--	μA
Reset Threshold	V_{TH}	$T_A = 27^\circ C$	--	Note1	--	V
Threshold Voltage Accuracy	ΔV_{TH}	$T_A = 27^\circ C$	--	--	2	%
V_{CC} Drop to Reset Delay	t_{RD}	Drop = -125mV	--	--	20	μS
Reset Active Time Out Period	t_{RP}	$V_{DD} \geq 1.02 \times V_{TH}$	--	200	--	mS
RESET Output Voltage	V_{OL}	$V_{DD} < V_{TH}, I_{SINK} > 3.5mA$	--	0.4	--	V

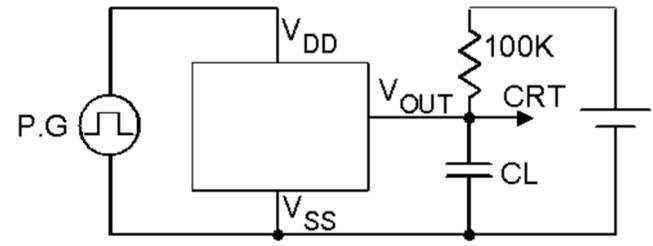
Note1: 1.5V to 5V, step 0.1V

Measuring Circuit

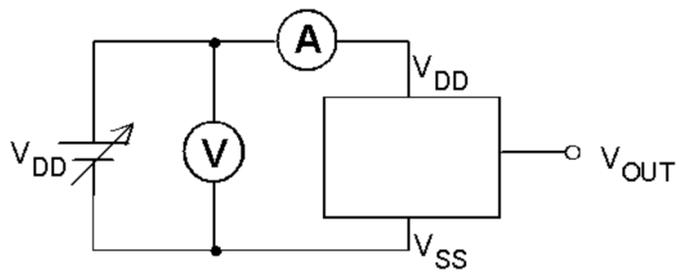
(1) Detection Voltage



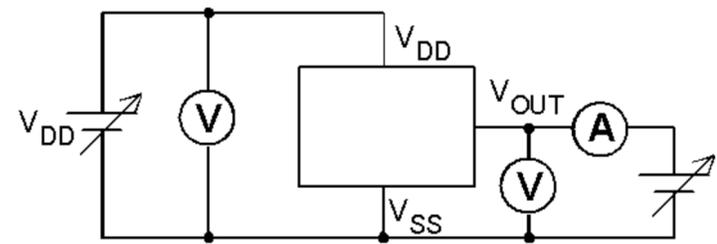
(3) Output Transistor Current



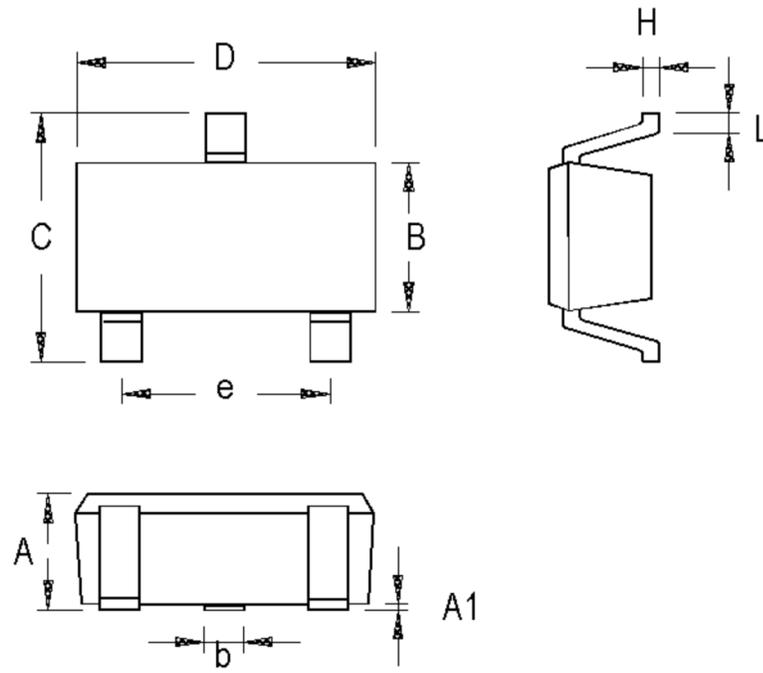
(2) Current Consumption



(4) Dynamic Response



Outline Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.889	1.295	0.035	0.051
A1	0.000	0.152	0.000	0.006
B	1.397	1.803	0.055	0.071
b	0.356	0.508	0.014	0.020
C	2.591	2.997	0.102	0.118
D	2.692	3.099	0.106	0.122
e	1.803	2.007	0.071	0.079
H	0.080	0.254	0.003	0.010
L	0.300	0.610	0.012	0.024

SOT-23-3 Surface Mount Package