



# 3-Pin Microprocessor Reset Monitor (Preliminary)

# CYT809

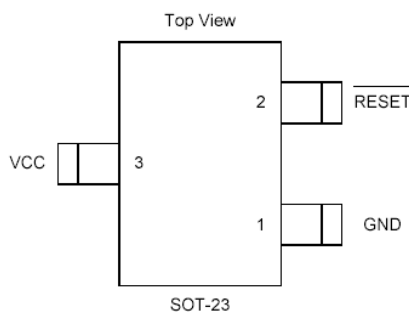
## Description

The CYT809 is a cost-effective system supervisor Integrated Circuit (IC) designed to monitor  $V_{CC}$  in digital and mixed signal systems and provide a warning signal when the system power supply is out of working range, and a reset signal to the host processor when necessary. No external components are required.

The reset output is driven active within 20 $\mu$ sec of  $V_{CC}$  falling through the reset voltage threshold. Reset is maintained active for a minimum of 140msec after  $V_{CC}$  rises above the reset threshold. The CYT809 has an active-low RESET output. The output of the CYT809 is guaranteed valid down to  $V_{CC}=1V$ . Both devices are available in a SOT-23 package.

The CYT809 is optimized to reject fast transient glitches on the  $V_{CC}$  line. Low supply current of 18 $\mu$ A ( $V_{CC}=3.3V$ ) makes these devices suitable for battery powered applications.

## Pin Configuration



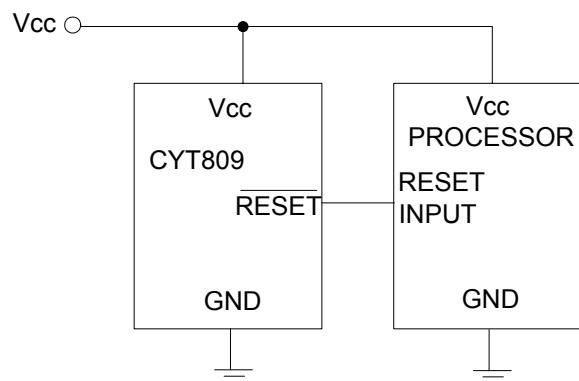
## Features

- Precision  $V_{CC}$  Monitor for 2.8V, 3.0V, 3.3V, and 5.0V Supplies
- 140msec Guaranteed Minimum  $\overline{\text{RESET}}$  Output Duration
- $\overline{\text{RESET}}$  Output Guaranteed to  $V_{CC}=1.0V$
- Low 18 $\mu$ A Supply Current
- $V_{CC}$  Transient Immunity
- Small SOT-23 Package
- No External Components
- Wide Operating Temperature: 0°C to 85°C

## Application

- Computers
- Embedded systems
- Battery powered equipment
- Critical  $\mu$ P power supply monitoring

## Application Diagram





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## Ordering/Marking Information

Ordering Information	Marking Information	
CYT809xS	C $\bar{8}$ 09xa $\cdot$	<p>Starting with 8, a bar on top of 8 is for production year 2003, and underlined 1 is for year 2004. The next character is marked on top for 2005, and underlined for 2006. The naming pattern continues with consecutive characters for later years. The "x" denotes a suffix for <math>V_{CC}</math> threshold. The last character is the week code. (A-Z: 1-26, a-z: 27-52)</p> <p>A dot on top right corner is for lead-free process.</p>
Suffix	Reset $V_{CC}$ threshold(V)	
L	4.63	
M	4.38	
J	4.00	
T	3.08	
S	2.93	
R	2.63	

## Absolute Maximum Ratings<sup>(1)</sup>

Parameter	Symbol	Value	Units
Input Voltage	$V_{CC}$	5.5	V
Output Voltage	RESET	-0.3 to ( $V_{CC} + 0.3$ )	V
Input Current	--	20	mA
Output Current	$I_{OUT}$	20	mA
Power Dissipation	$P_D$	Internally Limited <sup>(3)</sup>	
Output Short Circuit Duration		Infinite	
Thermal Resistance, Junction-to-Ambient	$\Theta_{JA}$	230	$^{\circ}C/W$
Operating Temperature Range	$T_A$	0 ~ 85	$^{\circ}C$
Lead Temperature (Soldering, 10 sec.)		260	$^{\circ}C$
Junction Temperature	$T_J$	0 to +125	$^{\circ}C$
Storage Temperature	$T_S$	-60 to +150	$^{\circ}C$

## Operating Rating<sup>(2)</sup>

Parameter	Symbol	Value	Units
Supply Input Voltage	$V_{CC}$	+2.0V to +5.5	V
Junction Temperature	$T_J$	0 to +125	$^{\circ}C$



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## Electrical Characteristics

V<sub>CC</sub>=5V for L/M/J ;3.3V for T/S ;3.0V for R ,T<sub>A</sub> = 25°C, unless otherwise specified.

Symbol	Parameter	Condition	Min	Typ	Max	Unit
V <sub>CC</sub>	Input Voltage		2.0		5.5	V
I <sub>CC</sub>	Supply Current		--	18	25	μA
V <sub>TH</sub>	Reset Threshold	CYT809Lxx : CYT809Mxx : CYT809Jxx : CYT809Txx : CYT809Sxx : CYT809Rxx :	4.54 4.29 3.92 3.02 2.87 2.58	4.63 4.38 4.00 3.08 2.93 2.63	4.72 4.47 4.08 3.14 2.99 2.68	V
	Reset Threshold Temperature Coefficient <sup>(4)</sup>		--	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	--	μsec
	Reset Active Timeout Period		140	240	600	msec
V <sub>OL</sub>	RESET Output Voltage Low	I <sub>SINK</sub> = 3mA	--	--	0.4	V
V <sub>OH</sub>	RESET Output Voltage High	I <sub>SOURCE</sub> = 800μA	0.8V <sub>CC</sub>	--	--	V

## PIN DESCRIPTION:

Pin No.	Symbol	Description
1	GND	Ground
2	RESET	RESET output remains low while V <sub>CC</sub> is below the reset voltage threshold and for 240msec(typ) after V <sub>CC</sub> rises above reset threshold
3	V <sub>CC</sub>	Supply Voltage (typ.)

**Note 1:** Exceeding the absolute maximum rating may damage the device.

**Note 2:** The device is not guaranteed to function outside its operating rating.

**Note 3:** The maximum allowable power dissipation at any T<sub>A</sub> (ambient temperature) is calculated using: P<sub>D(MAX)</sub> = (T<sub>J(MAX)</sub> – T<sub>A</sub>)/θ<sub>JA</sub>. Exceeding the maximum allowable power dissipation will result in excessive die temperature, and the regulator will go into thermal shutdown. See “Thermal Consideration” section for details

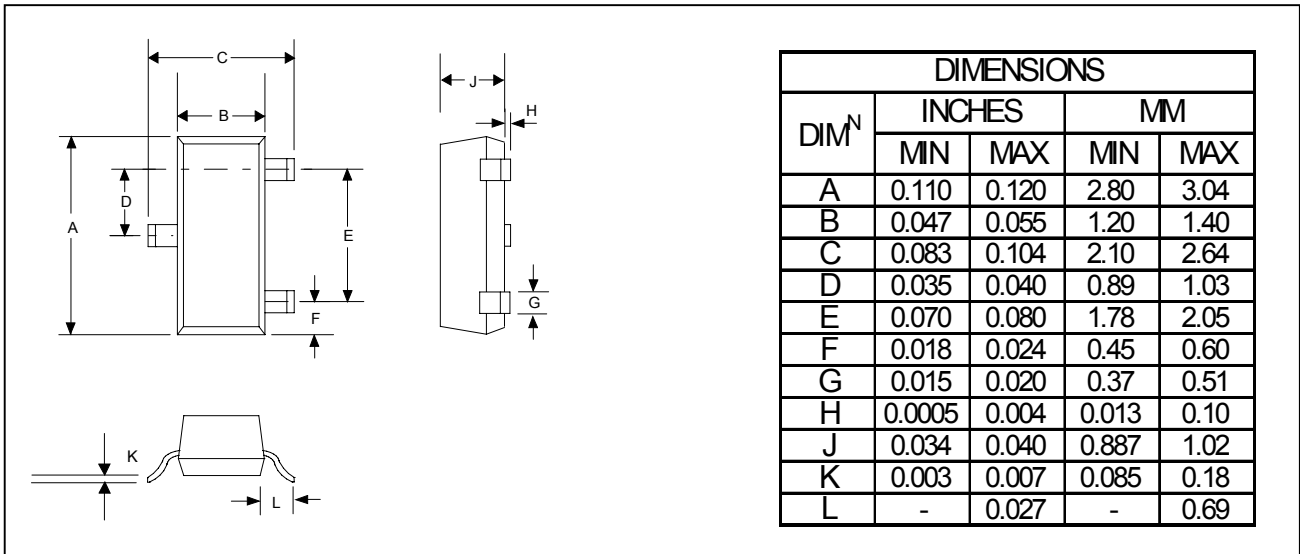
**Note 4:** RESET threshold temperature coefficient is the worst case voltage change divided by the total temperature range.



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### OUTLINE DRAWING SOT-23



Preliminary and all contents are subject to change without prior notice.