



## UTC812

CMOS IC

### MICROPROCESSOR RESET IC

#### DESCRIPTION

The UTC **UTC812** is a microprocessor ( $\mu$ P) reset circuit designed to monitor the power supplies in  $\mu$ P and digital systems.

The UTC **UTC812** has push-pull output and active-low  $\overline{\text{RESET}}$  output.

This device provides customers with perfect system reliability and low cost which are achieved by to no external component requirement and adjustments when used with +5V, +3.3V, +3.0V-powered circuits.

This circuit performs a single function: it asserts a reset signal whenever the  $V_{CC}$  supply voltage declines below a preset threshold, keeping it asserted for at least 140ms after  $V_{CC}$  has risen above the reset threshold. Reset thresholds suitable for operation with a variety of supply voltages are available.

The reset comparator can be used to ignore fast transients on  $V_{CC}$ , and outputs are guaranteed to be in the correct logic state for  $V_{CC}$  down to 1V.

In applications, the **UTC812** is suitable for computers, controllers, intelligent instruments, critical microprocessors, microcomputer power monitoring, portable, or battery-powered equipments and automotive device.

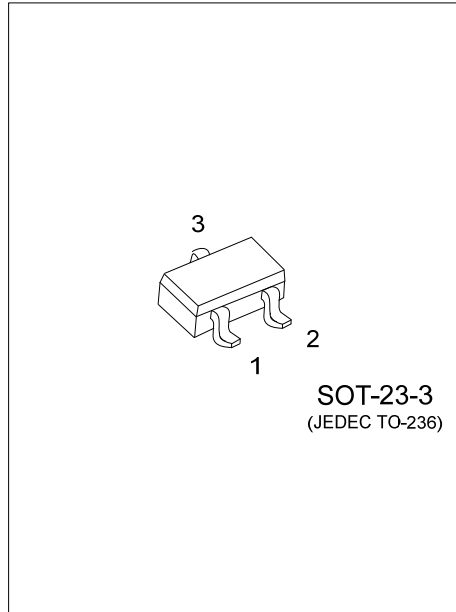
#### FEATURES

- \* Supply Current: 10 $\mu$ A
- \* Precision Monitoring of +5V, +3.3V, +3.0V Powered Circuits
- \* With the Two Configurations In The Following:
  - Push-Pull  $\overline{\text{RESET}}$  Output
- \* Power-On Reset Pulse Width: 140ms (MIN.)
- \* Outputs Guaranteed To Be In The Correct Logic State for  $V_{CC}$  Down to 1V.
- \* Required No External Components
- \* Power Supply Transient Immunity

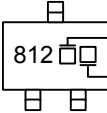
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTC812L-X-AE2-R	UTC812G-X-AE2-R	SOT-23-3	$\overline{\text{RESET}}$	GND	$V_{CC}$	Tape Reel

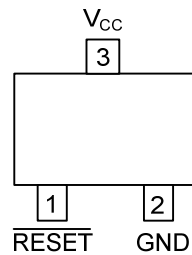
UTC812G-X-AE2-R		(1) Packing Type	(1) R: Tape Reel
		(2) Package Type	(2) AE2: SOT-23-3
		(3) Output Voltage Code	(3) Refer to Marking Information
		(4) Green Package	(4) G: Halogen Free and Lead Free, L: Lead Free



## MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
SOT-23-3	C : 3.08 V	 <p>             Voltage Code              L: Lead Free              G: Halogen Free           </p>

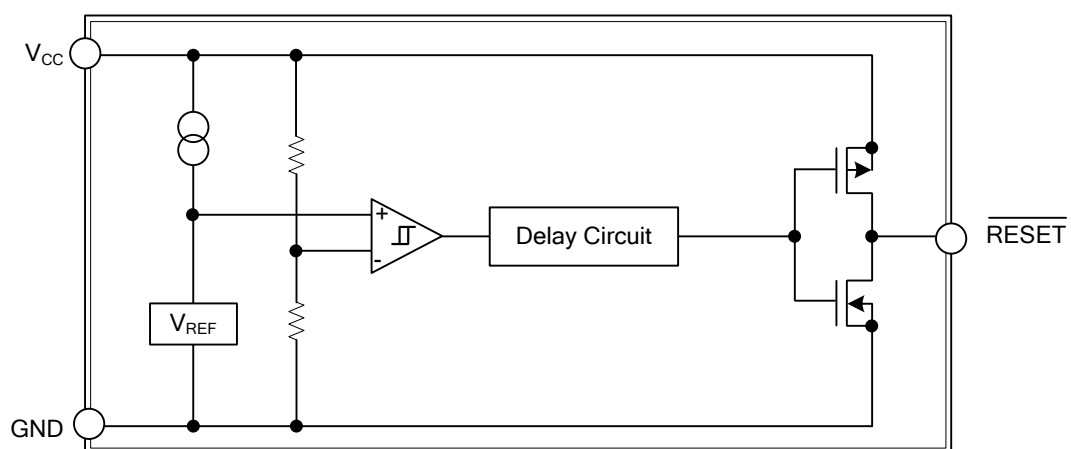
## PIN CONFIGURATION



## PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	$\overline{\text{RESET}}$	$\overline{\text{RESET}}$ goes low if $V_{CC}$ falls below the reset threshold and remains asserted for one reset timeout period after $V_{CC}$ exceeds the reset threshold.
2	GND	IC Ground Pin
3	$V_{CC}$	Power Supply Input

## ■ BLOCK DIAGRAM



# ■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Terminal Voltage (with respect to GND)	$V_{CC}$	-0.3 ~ 6.0	V
RESET, RESET (push-pull)		-0.3 ~ ( $V_{CC}+0.3$ )	V
Input Current	$V_{CC}$	20	mA
Output Current, RESET, RESET		20	mA
Junction Temperature	$T_J$	+150	°C
Operating Temperature	$T_{OPR}$	-40 ~ +105	°C
Storage Temperature	$T_{STG}$	-65 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.  
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

# ■ THERMAL DATA

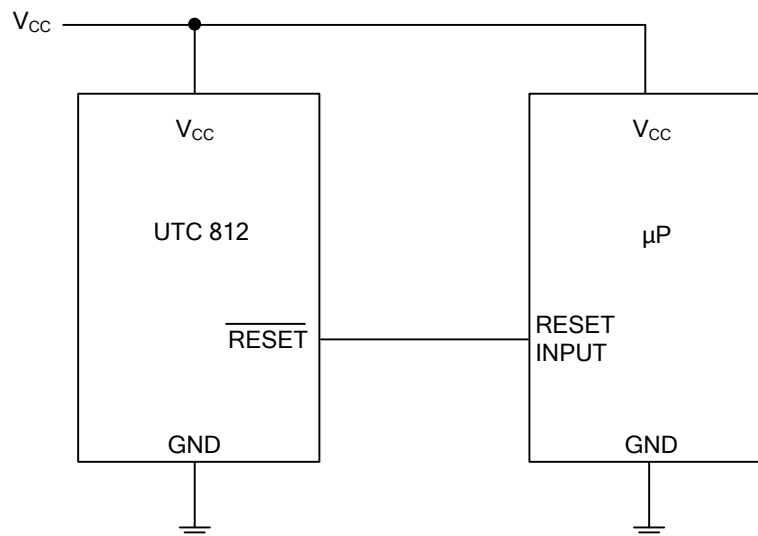
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	$\theta_{JA}$	420	°C/W

# ■ ELECTRICAL CHARACTERISTICS (Note 1) ( $T_A=25^{\circ}\text{C}$ , $V_{CC}=3.3\text{V}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
$V_{CC}$ Range			1.0		5.5	V
Supply Current	$I_{CC}$	$V_{CC}<3.6\text{V}$		10	23	$\mu\text{A}$
Reset Threshold	$V_{TH}$		3.03	3.08	3.12	V
Reset Threshold Tempco				40		ppm/°C
$V_{CC}$ to Reset Delay (Note 2)		$V_{CC}=V_{TH}$ to ( $V_{TH}-100\text{mV}$ )		7		$\mu\text{s}$
Reset Active Timeout Period		$V_{CC}=V_{TH}$ max	150		550	ms
RESET Output Current High (push-pull active low)	$I_{OH}$	$V_{CC}=3.3\text{V}$ , $V_{RESET}=2.8\text{V}$	3			mA

Note: Production testing done at  $T_A = +25^{\circ}\text{C}$ ; limits over temperature guaranteed by design

## ■ TYPICAL APPLICATION CIRCUIT



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