



## UIC811

## LINEAR INTEGRATED CIRCUIT

### MICROPROCESSOR RESET CIRCUITS

#### DESCRIPTION

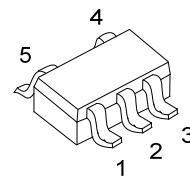
The UTC **UIC811** series are resetting circuits which can monitor power supplies especially in microprocessor based systems.

In normal operation, the UTC **UIC811** series can assert a reset under any of the following situation: the power supply drops below a designated reset threshold level (which is available for 3V or 3.3V or 5V system) or  $\overline{MR}$  is forced low.

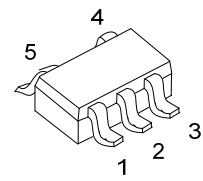
There is an internal active low  $\overline{RESET}$  output which has already been guaranteed to remain asserted for at 140ms least while  $V_{CC}$  rises above the designed threshold level.

#### FEATURES

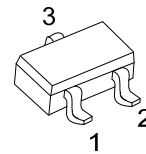
- \* Voltage monitor for 3V or 3.3V or 5V power supplies
- \* Valid  $\overline{RESET}$  remains with  $V_{CC}$  as low as 1V
- \* Typical supply current: 5 $\mu$ A
- \* Fixed 140ms minimum reset pulse width
- \* With Manual reset input
- \* Push-Pull  $\overline{RESET}$  Active Low Output



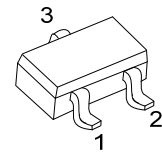
SOT-23-5  
(JEDEC TO-236)



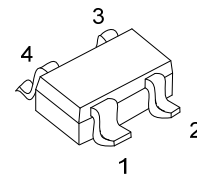
SOT-25  
(JEDEC MO-178)



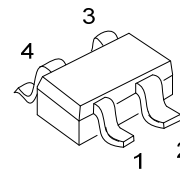
SOT-23-3  
(JEDEC TO-236)



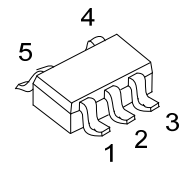
SOT-23  
(EIAJ SC-59)



SOT-143



SOT-343



SOT-353

### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment					Packing
Lead Free	Halogen Free		1	2	3	4	5	
UIC811L-x-AD4-R	UIC811G-x-AD4-R	SOT-143	GND	RESET	MR	V <sub>CC</sub>	-	Tape Reel
UIC811L-x-AE2-2-R	UIC811G-x-AE2-2-R	SOT-23-3	RESET	V <sub>CC</sub>	GND	-	-	Tape Reel
UIC811L-x-AE2-3-R	UIC811G-x-AE2-3-R	SOT-23-3	GND	RESET	V <sub>CC</sub>	-	-	Tape Reel
UIC811L-x-AE2-5-R	UIC811G-x-AE2-5-R	SOT-23-3	RESET	GND	V <sub>CC</sub>	-	-	Tape Reel
UIC811L-x-AE3-2-R	UIC811G-x-AE3-2-R	SOT-23	RESET	V <sub>CC</sub>	GND	-	-	Tape Reel
UIC811L-x-AE3-3-R	UIC811G-x-AE3-3-R	SOT-23	GND	RESET	V <sub>CC</sub>	-	-	Tape Reel
UIC811L-x-AE3-5-R	UIC811G-x-AE3-5-R	SOT-23	RESET	GND	V <sub>CC</sub>	-	-	Tape Reel
UIC811L-x-AE5-R	UIC811G-x-AE5-R	SOT-23-5	GND	NC	RESET	MR	V <sub>CC</sub>	Tape Reel
UIC811L-x-AF5-R	UIC811G-x-AF5-R	SOT-25	GND	NC	RESET	MR	V <sub>CC</sub>	Tape Reel
UIC811L-x-AL4-R	UIC811G-x-AL4-R	SOT-343	GND	RESET	MR	V <sub>CC</sub>	-	Tape Reel
UIC811L-x-AL5-R	UIC811G-x-AL5-R	SOT-353	GND	NC	RESET	MR	V <sub>CC</sub>	Tape Reel

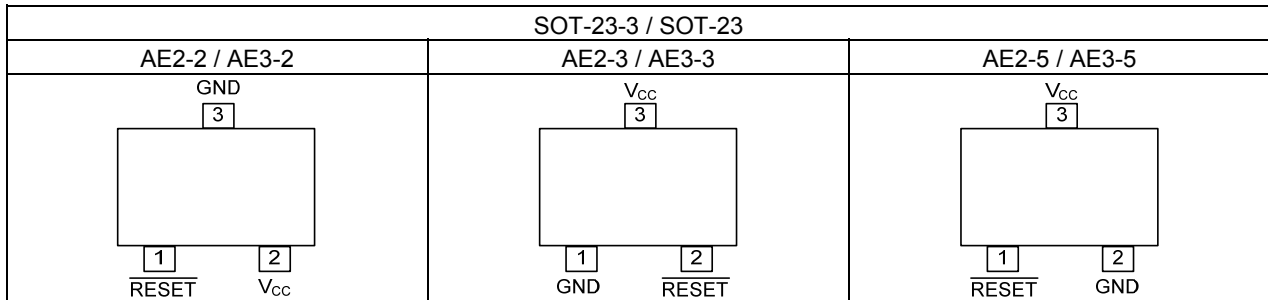
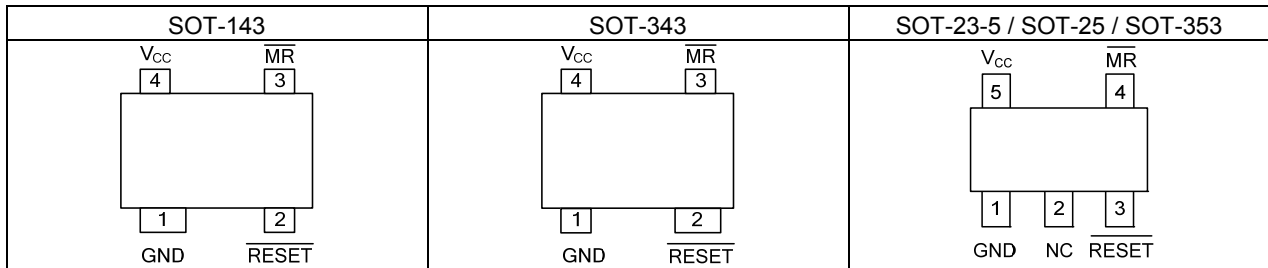
Note: Pin Assignment : x: Output Voltage, refer to Marking Information.

<p>UIC811G-x-AE2-2-R</p>	<p>(1) R: Tape Reel                  (2) refer to Pin Assignment                  (3) AD4: SOT-143, AE2: SOT-23-3, AE3: SOT-23, AE5: SOT-23-5, AF5: SOT-25, AL4: SOT-343, AL5: SOT-353                  (4) x: Refer to Marking Information                  (5) G: Halogen Free and Lead Free, L: Lead Free</p>
--------------------------	--

### MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
SOT-23 SOT-23-3	A : 2.63V B : 2.93V C : 3.08V D : 4.00V E : 4.38V F : 4.63V J : 5.00V	
SOT-23-5 SOT-25 SOT-353		
SOT-143		
SOT-343		

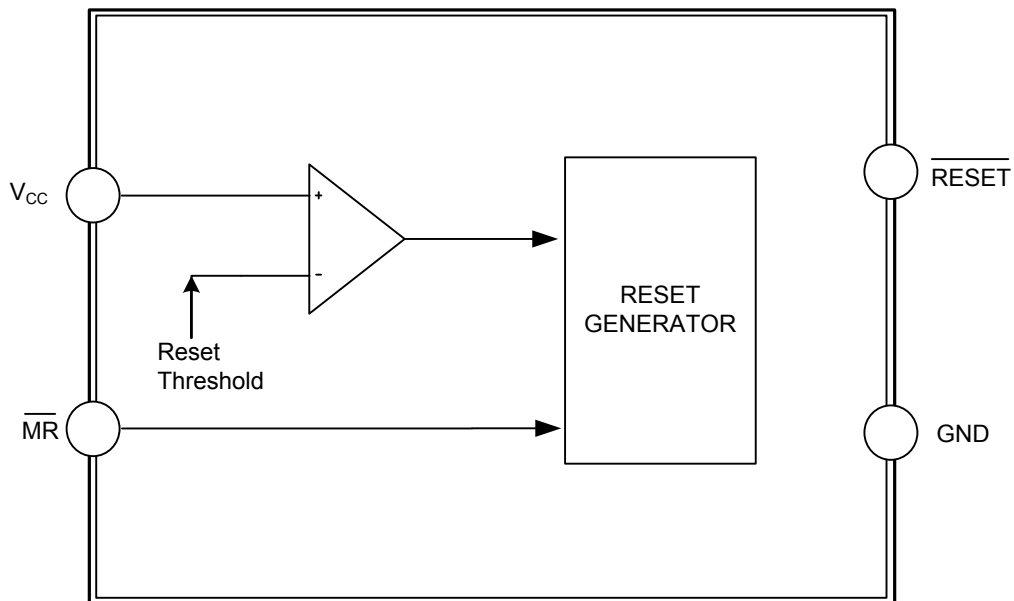
### ■ PIN CONFIGURATION



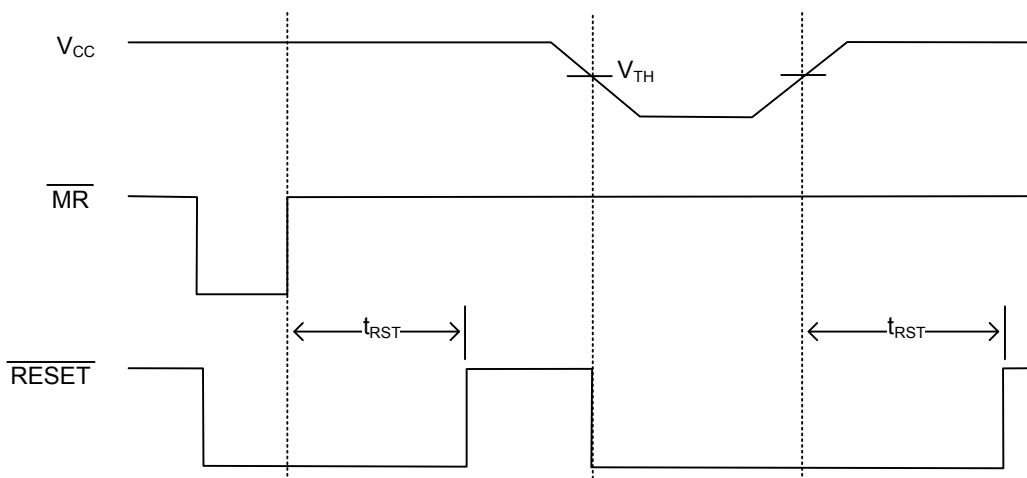
### ■ PIN DESCRIPTION

PIN NAME	DESCRIPTION
GND	Ground
NC	No Connection.
$\overline{\text{RESET}}$	This pin will fall low after the $V_{CC}$ 's falling below the reset threshold voltage and it also can remain asserted for at least 140ms min after $V_{CC}$ 's rising upon the reset threshold.
$\overline{\text{MR}}$	Input of manual reset. A reset can be forced by a logic low on $\overline{\text{MR}}$ . As the $\overline{\text{MR}}$ is held low, the reset will remain asserted, and until the $\overline{\text{MR}}$ rise high, the reset will remain 140ms min at least. When it is float that means it is unused. For 4 Pin, 5 Pin Packing only.
$V_{CC}$	Input of power supply.

## ■ BLOCK DIAGRAM



## ■ FUNCTIONAL DIAGRAM



Reset Timing Diagram

### ■ ABSOLUTE MAXIMUM RATING

PARAMETER		SYMBOL	RATINGS	UNIT
Input Voltage		$V_{CC}$	-0.3 ~ +6.0	V
RESET		$V_{RESET}$	-0.3 ~ +6.0	V
Input Current ( $V_{CC}, \overline{MR}$ )		$I_{IN}$	20	mA
Output Current ( $\overline{RESET}$ )		$I_{OUT}$	20	mA
Rate of Rise		$V_{CC(RR)}$	100	V/ $\mu$ s
Power Dissipation ( $T_A=70^\circ\text{C}$ )	SOT-23-3/SOT-23	$P_D$	300	mW
	SOT-23-5/SOT-25		350	mW
	SOT-143		320	mW
	SOT-343		250	mW
	SOT-353		260	mW
Junction Temperature		$T_J$	+150	$^\circ\text{C}$
Operating Temperature		$T_{OPR}$	-40 ~ +105	$^\circ\text{C}$
Storage Temperature		$T_{STG}$	-65 ~ +150	$^\circ\text{C}$

Notes: 1. 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.  
2. The device is not guaranteed to function outside its operating rating.

### ■ ELECTRICAL CHARACTERISTICS

#### UIC811-A (2.63V) ( $V_{CC}=3\text{V}$ , $T_A = 25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operating Voltage Range	$V_{CC}$	$T_A = -40 \sim +85^\circ\text{C}$	1		6	V
Supply Current	$I_{CC}$	$V_{CC}=3.0\text{V}$ , no load		5	10	$\mu\text{A}$
Reset Voltage Threshold	$V_{TH}$		2.55	2.63	2.70	V
Reset Timeout Period	$t_{RST}$		140	240	560	ms
Reset Output Voltage	$V_{OH}$	$I_{SOURCE} = 500\mu\text{A}$	2.4			V
	$V_{OL}$	$V_{CC} = V_{TH} \text{ min}$ , $I_{SINK} = 1.2\text{mA}$ $V_{CC} > 1\text{V}$ , $I_{SINK} = 50\mu\text{A}$ , $T_A = -40 \sim +85^\circ\text{C}$			0.3	V
$\overline{MR}$ Input Threshold	$V_{IH}$		2.1			V
	$V_{IL}$				0.75	V
$\overline{MR}$ Minimum Pulse Width			10			$\mu\text{s}$
$\overline{MR}$ to Reset Delay				0.5		$\mu\text{s}$
$\overline{MR}$ Pull-Up Resistance			10	20	40	$\text{k}\Omega$
$\overline{MR}$ Glitch Immunity				100		ns

#### UIC811-B (2.93V) ( $V_{CC}=3.3\text{V}$ , $T_A = 25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operating Voltage Range	$V_{CC}$	$T_A = -40 \sim +85^\circ\text{C}$	1		6	V
Supply Current	$I_{CC}$	$V_{CC}=3.3\text{V}$ , no load		5	10	$\mu\text{A}$
Reset Voltage Threshold	$V_{TH}$		2.85	2.93	3.00	V
Reset Timeout Period	$t_{RST}$		140	240	560	ms
Reset Output Voltage	$V_{OH}$	$I_{SOURCE} = 500\mu\text{A}$	2.64			V
	$V_{OL}$	$V_{CC} = V_{TH} \text{ min}$ , $I_{SINK} = 1.2\text{mA}$ $V_{CC} > 1\text{V}$ , $I_{SINK} = 50\mu\text{A}$ , $T_A = -40 \sim +85^\circ\text{C}$			0.3	V
$\overline{MR}$ Input Threshold	$V_{IH}$		2.31			V
	$V_{IL}$				0.825	V
$\overline{MR}$ Minimum Pulse Width			10			$\mu\text{s}$
$\overline{MR}$ to Reset Delay				0.5		$\mu\text{s}$
$\overline{MR}$ Pull-Up Resistance			10	20	40	$\text{k}\Omega$
$\overline{MR}$ Glitch Immunity				100		ns

### ■ ELECTRICAL CHARACTERISTICS (Cont.)

**UIC811-C (3.08V)** ( $V_{CC}=3.3V$ ,  $T_A=25^\circ C$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operating Voltage Range	$V_{CC}$	$T_A = -40\sim+85^\circ C$	1		6	V
Supply Current	$I_{CC}$	$V_{CC}=3.3V$ , no load		5	10	$\mu A$
Reset Voltage Threshold	$V_{TH}$		3.00	3.08	3.15	V
Reset Timeout Period	$t_{RST}$		140	240	560	ms
Reset Output Voltage	$V_{OH}$	$I_{SOURCE} = 500\mu A$	2.64			V
	$V_{OL}$	$V_{CC} = V_{TH} \text{ min, } I_{SINK} = 1.2mA$ $V_{CC} > 1V, I_{SINK} = 50\mu A, T_A = -40\sim+85^\circ C$			0.3	V
$\overline{MR}$ Input Threshold	$V_{IH}$		2.31			V
	$V_{IL}$				0.825	V
$\overline{MR}$ Minimum Pulse Width			10			$\mu S$
$\overline{MR}$ to Reset Delay				0.5		$\mu S$
$\overline{MR}$ Pull-Up Resistance			10	20	40	k $\Omega$
$\overline{MR}$ Glitch Immunity				100		ns

**UIC811-D (4.00V)** ( $V_{CC}=5V$ ,  $T_A=25^\circ C$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operating Voltage Range	$V_{CC}$	$T_A = -40\sim+85^\circ C$	1		6	V
Supply Current	$I_{CC}$	$V_{CC}=5.0V$ , no load		5	15	$\mu A$
Reset Voltage Threshold	$V_{TH}$		3.89	4.00	4.10	V
Reset Timeout Period	$t_{RST}$		140	240	560	ms
Reset Output Voltage	$V_{OH}$	$I_{SOURCE} = 800\mu A$	3.5			V
	$V_{OL}$	$V_{CC} = V_{TH} \text{ min, } I_{SINK} = 3.2mA$ $V_{CC} > 1V, I_{SINK} = 50\mu A, T_A = -40\sim+85^\circ C$			0.4	V
$\overline{MR}$ Input Threshold	$V_{IH}$		2.3			V
	$V_{IL}$				0.8	V
$\overline{MR}$ Minimum Pulse Width			10			$\mu S$
$\overline{MR}$ to Reset Delay				0.5		$\mu S$
$\overline{MR}$ Pull-Up Resistance			10	20	40	k $\Omega$
$\overline{MR}$ Glitch Immunity				100		ns

**UIC811-E (4.38V)** ( $V_{CC}=5V$ ,  $T_A=25^\circ C$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operating Voltage Range	$V_{CC}$	$T_A = -40\sim+85^\circ C$	1		6	V
Supply Current	$I_{CC}$	$V_{CC}=5.0V$ , no load		5	15	$\mu A$
Reset Voltage Threshold	$V_{TH}$		4.25	4.38	4.50	V
Reset Timeout Period	$t_{RST}$		140	240	560	ms
Reset Output Voltage	$V_{OH}$	$I_{SOURCE} = 800\mu A$	3.5			V
	$V_{OL}$	$V_{CC} = V_{TH} \text{ min, } I_{SINK} = 3.2mA$ $V_{CC} > 1V, I_{SINK} = 50\mu A, T_A = -40\sim+85^\circ C$			0.4	V
$\overline{MR}$ Input Threshold	$V_{IH}$		2.3			V
	$V_{IL}$				0.8	V
$\overline{MR}$ Minimum Pulse Width			10			$\mu S$
$\overline{MR}$ to Reset Delay				0.5		$\mu S$
$\overline{MR}$ Pull-Up Resistance			10	20	40	k $\Omega$
$\overline{MR}$ Glitch Immunity				100		ns

### ■ ELECTRICAL CHARACTERISTICS (Cont.)

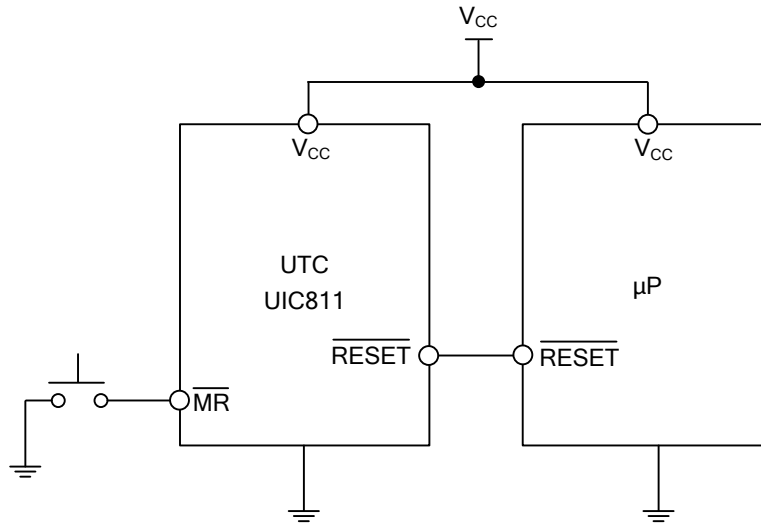
**UIC811-F (4.63V)** ( $V_{CC}=5V$ ,  $T_A=25^\circ C$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operating Voltage Range	$V_{CC}$	$T_A = -40 \sim +85^\circ C$	1		6	V
Supply Current	$I_{CC}$	$V_{CC}=5.0V$ , no load		5	15	$\mu A$
Reset Voltage Threshold	$V_{TH}$		4.5	4.63	4.75	V
Reset Timeout Period	$t_{RST}$		140	240	560	ms
Reset Output Voltage	$V_{OH}$	$I_{SOURCE} = 800\mu A$	3.5			V
	$V_{OL}$	$V_{CC} = V_{TH} \text{ min, } I_{SINK} = 3.2mA$ $V_{CC} > 1V, I_{SINK} = 50\mu A, T_A = -40 \sim +85^\circ C$			0.4	V
$\overline{MR}$ Input Threshold	$V_{IH}$		2.3			V
	$V_{IL}$				0.8	V
$\overline{MR}$ Minimum Pulse Width			10			$\mu S$
$\overline{MR}$ to Reset Delay				0.5		$\mu S$
$\overline{MR}$ Pull-Up Resistance			10	20	40	k $\Omega$
$\overline{MR}$ Glitch Immunity				100		ns

**UIC811-J (5.0V)** ( $V_{CC}=5.5V$ ,  $T_A=25^\circ C$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operating Voltage Range	$V_{CC}$	$T_A = -40 \sim +85^\circ C$	1		6	V
Supply Current	$I_{CC}$	$V_{CC}=5.0V$ , no load			25	$\mu A$
Reset Voltage Threshold	$V_{TH}$		4.85	5	5.15	V
Reset Timeout Period	$t_{RST}$		140	240	560	ms
Reset Output Voltage	$V_{OH}$	$I_{SOURCE} = 800\mu A$	4.55			V
	$V_{OL}$	$V_{CC} = V_{TH} \text{ min, } I_{SINK} = 3.2mA$ $V_{CC} > 1V, I_{SINK} = 50\mu A, T_A = -40 \sim +85^\circ C$			0.4	V
$\overline{MR}$ Input Threshold	$V_{IH}$		2.45			V
	$V_{IL}$				0.8	V
$\overline{MR}$ Minimum Pulse Width			10			$\mu S$
$\overline{MR}$ to Reset Delay				0.5		$\mu S$
$\overline{MR}$ Pull-Up Resistance			10	20	40	k $\Omega$
$\overline{MR}$ Glitch Immunity				100		ns

### ■ TYPICAL APPLICATION CIRCUIT



### ■ APPLICATION INFORMATION

#### Microprocessor Reset

As soon as V<sub>CC</sub> falls below the reset threshold voltage, the  $\overline{\text{RESET}}$  pin is asserted. But the  $\overline{\text{RESET}}$  pin can keep asserted for a period of 140ms after V<sub>CC</sub> rose above the reset threshold voltage. After a power failure the reset operation can keep the processor being reset and powers up properly.

#### V<sub>CC</sub> Transients

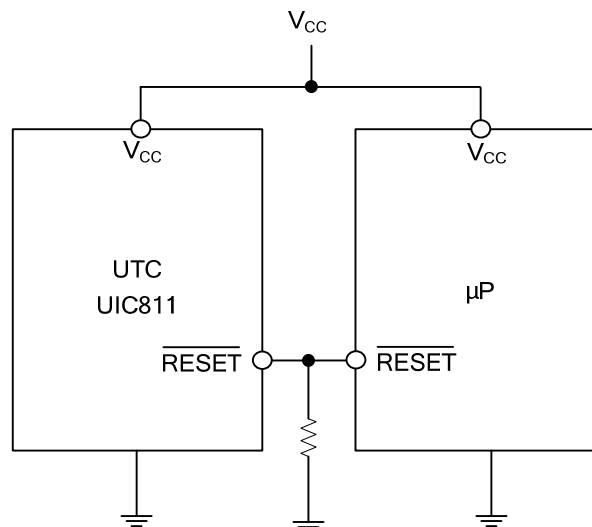
The UTC UIC811 series won't cause a reset typically as this situation: a negative-going transient 125mV below the reset threshold with a duration of 20μs or less.

#### Interfacing to Bidirectional Reset Pins

Connecting a 4.7kΩ resistor in series with the UTC UIC811 series output and the μP reset pin can make the UTC UIC811 series interface with μPs with bidirectional reset pins.

#### $\overline{\text{RESET}}$ Valid at Low Voltage

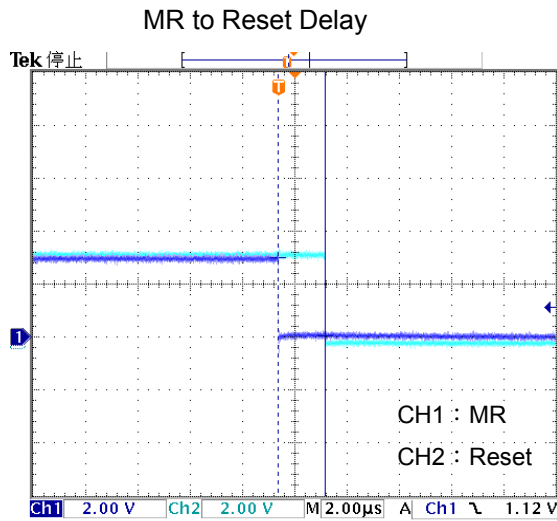
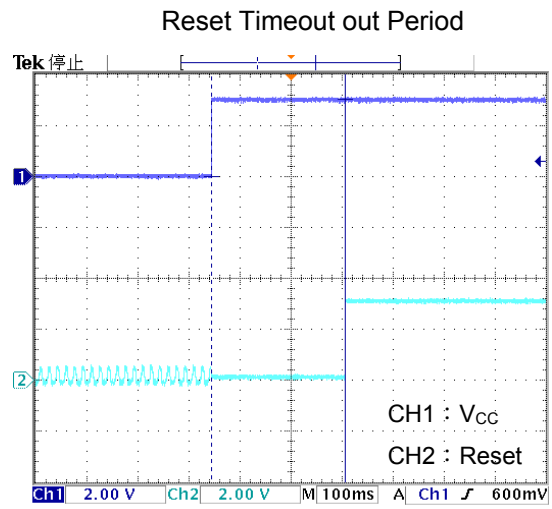
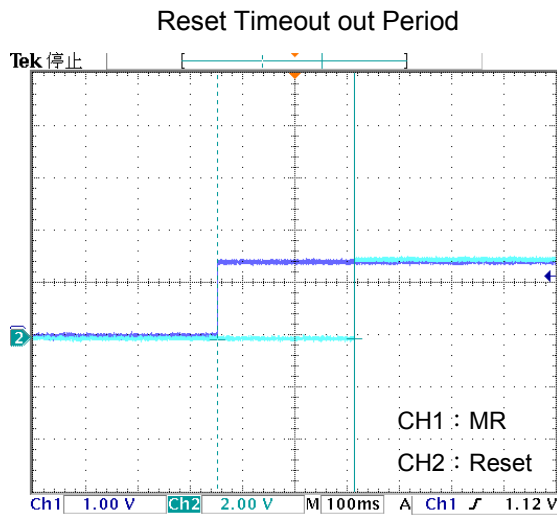
As the figure below, adding a resistor which is recommended 100kΩ can ensure the  $\overline{\text{RESET}}$  output remains low with V<sub>CC</sub> down to 0V. The size of the resistor should be not too large which will load the output excessively and not too small which can pull-down any stray leakage currents.



Reset Valid to V<sub>CC</sub> = 0V



### TYPICAL CHARACTERISTICS



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Supervisory Circuits](#) category:*

*Click to view products by [Unisonic](#) manufacturer:*

Other Similar products are found below :

[CAT1161LI-25-G](#) [CAT853STBI-T3](#) [DS1232L](#) [NCV302HSN45T1G](#) [STM6710FWB7F](#) [S-1000N28-I4T1U](#) [S-1000N23-I4T1U](#) [S-1000N19-I4T1U](#) [PT7M6133NLTA3EX](#) [PT7M6127NLTA3EX](#) [ISL88011IH526Z-TK](#) [ISL88013IH529Z-TK](#) [ISL88705IP846Z](#) [ISL88706IP831Z](#) [ISL88708IB844Z](#) [ISL88708IP831Z](#) [TCM811MERCCTR](#) [X40420S14-A](#) [X40421S14-C](#) [X40430S14-A](#) [X40430S14I-A](#) [X40430S14I-B](#) [X40431S14-A](#) [X40431S14-B](#) [X40431S14-C](#) [X40431S14I-A](#) [X40431S14I-B](#) [X40431S14I-C](#) [X4043P-2.7](#) [X4043PI-2.7](#) [X4043S8-2.7T1](#) [X4043S8IZ-2.7](#) [X4043S8IZT1](#) [X4043S8T1](#) [X4045P](#) [X4045PI](#) [X4045PI-2.7](#) [X4045S8-2.7T1](#) [X4045S8IZ](#) [X4045S8T1](#) [X4163P](#) [X4163P-2.7](#) [X4163PI](#) [X4163PI-2.7](#) [X4163S8](#) [X4165P](#) [X4165P-2.7](#) [X4165PI](#) [X4165PI-2.7](#) [X4165S8I-2.7](#)