



81XX

LINEAR INTEGRATED CIRCUIT

POWER RESET IC

■ **DESCRIPTION**

The function of UTC **81XX** is to accurately reset system after detecting the supply voltage at the time of switching power on and instantaneous power off in various CPU and other logic systems. Further, this IC, with its super low consumption current and high precision voltage detection capacity, UTC **81XX** is the most suited as a voltage check circuit for a number of products which use batteries.

■ **FEATURES**

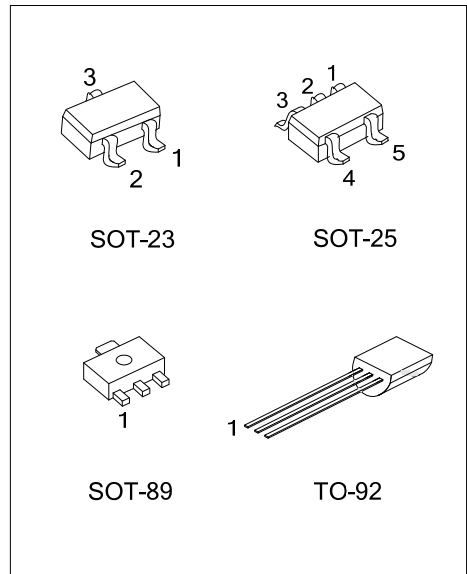
- *High precision voltage detection. ($V_{SS} \pm 3\%$ max)
- *low current consumption.
($I_{CCH} = 15\mu A$ typ. $I_{CCL} = 10\mu A$ typ.)
- *Low operating threshold voltage (0.65V typ.)
- *Hysteresis voltage is provided as a detect voltage.
(50mV typ.)
- *Large output current at the time ON (15mA typ.)
- *The detect voltage can be selected at your discretion at 0.1V step within the range of 1.9V to 4.6V by the following stipulation method.

■ **ORDERING INFORMATION**

Ordering Number			Package	Pin Assignment					Packing
Normal	Lead Free	Halogen Free		1	2	3	4	5	
81XX-AB3-D-R	81XXL-AB3-D-R	81XXG-AB3-D-R	SOT-89	I	G	O	-	-	Tape Reel
81XX-AB3-E-R	81XXL-AB3-E-R	81XXG-AB3-E-R	SOT-89	O	I	G	-	-	Tape Reel
81XX-AE3-2-R	81XXL-AE3-2-R	81XXG-AE3-2-R	SOT-23	I	O	G	-	-	Tape Reel
81XX-AE3-3-R	81XXL-AE3-3-R	81XXG-AE3-3-R	SOT-23	O	G	I	-	-	Tape Reel
81XX-AE3-5-R	81XXL-AE3-5-R	81XXG-AE3-5-R	SOT-23	G	O	I	-	-	Tape Reel
81XX-AF5-A-R	81XXL-AF5-A-R	81XXG-AF5-A-R	SOT-25	N	N	G	O	I	Tape Reel
81XX-AF5-B-R	81XXL-AF5-B-R	81XXG-AF5-B-R	SOT-25	O	I	G	N	N	Tape Reel
81XX-T92-D-B	81XXL-T92-D-B	81XXG-T92-D-B	TO-92	I	G	O	-	-	Tape Box
81XX-T92-D-K	81XXL-T92-D-K	81XXG-T92-D-K	TO-92	I	G	O	-	-	Bulk
81XX-T92-E-B	81XXL-T92-E-B	81XXG-T92-E-B	TO-92	O	I	G	-	-	Tape Box
81XX-T92-E-K	81XXL-T92-E-K	81XXG-T92-E-K	TO-92	O	I	G	-	-	Bulk

Note: Pin Assignment: I: V_{IN} O: V_{OUT} G: GND NC:N
XX: Detected Voltage Value

<p>81XXL-AB3-2-R</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel (2) refer to Pin Assignment (3) AB3: SOT-89, AE3: SOT-23, AF5: SOT-25, T92: TO-92 (4) G: Halogen Free, L: Lead Free, Blank: Pb/Sn</p>
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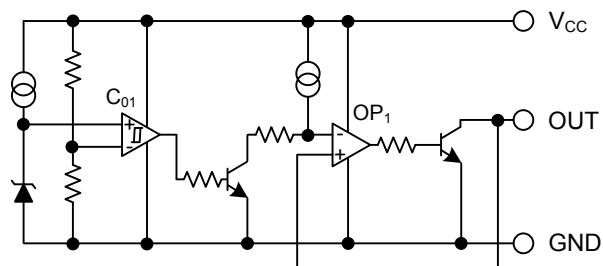


Lead-free: 81XXL
Halogen-free: 81XXG

MARKING INFORMATION

PACKAGE	MARKING
SOT-23	<p> Date Code ← [] [] [] → L: Lead Free Voltage Code ← [] [] [] → L: Halogen Free Pin Code → [] [] [] → </p>
SOT-89	<p> Date Code ← [] [] → L: Lead Free Voltage Code ← [] [] [] [] → L: Halogen Free Pin Code → [] [] [] → </p>
SOT-25	<p> Date Code ← [] [] [] [] → L: Lead Free Voltage Code ← [] [] [] [] → L: Halogen Free Pin Code → [] [] [] [] → </p>
TO-92	<p> Voltage Code ← [] [] [] [] → L: Lead Free Pin Code ← [] [] [] [] → L: Halogen Free Date Code → [] [] [] [] → </p>

BLOCK DIAGRAM



The Pin2 this product is SUB, so connect the pin to Ground.

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Power supply voltage	V_{CC}	-0.3~+10	V
Operating temperature	T_{OPR}	-20~+75	°C
Storage temperature	T_{STG}	-40~+125	°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.

■ ELECTRICAL CHARACTERISTICS

($T_A=25^\circ\text{C}$, The unit of resistance is Ω unless otherwise indicated.)

PARAMETER	SYMBOL	(Note 1)	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
Detection Voltage	V_{SS}	1	$R_L=470\Omega$ $V_{CC}=H \rightarrow L$ $V_{OUT}=V_{CC}$	UTC 8150	4.850	5.000	5.150	V
				UTC 8146	4.462	4.600	4.738	
				UTC 8145	4.365	4.500	4.635	
				UTC 8144	4.268	4.400	4.532	
				UTC 8143	4.171	4.300	4.429	
				UTC 8142	4.074	4.200	4.326	
				UTC 8141	3.977	4.100	4.223	
				UTC 8140	3.880	4.000	4.120	
				UTC 8139	3.783	3.900	4.017	
				UTC 8138	3.686	3.800	3.914	
				UTC 8137	3.589	3.700	3.811	
				UTC 8136	3.492	3.600	3.708	
				UTC 8135	3.395	3.500	3.605	
				UTC 8134	3.298	3.400	3.502	
				UTC 8133	3.201	3.300	3.399	
				UTC 8132	3.104	3.200	3.296	
				UTC 8131	3.007	3.100	3.193	
				UTC 8130	2.910	3.000	3.090	
				UTC 8129	2.813	2.900	2.987	
				UTC 8128	2.716	2.800	2.884	
UTC 8127	2.619	2.700	2.781					
UTC 8126	2.522	2.600	2.678					
UTC 8125	2.425	2.500	2.575					
UTC 8124	2.328	2.400	2.472					
UTC 8123	2.231	2.300	2.369					
UTC 8122	2.134	2.200	2.266					
UTC 8121	2.037	2.100	2.163					
UTC 8120	1.940	2.000	2.060					
UTC 8119	1.843	1.900	1.957					
UTC 8118	1.746	1.800	1.854					
Hysteresis Voltage	ΔV_{SS}	1	$R_L=470\Omega$, $V_{CC}=L \rightarrow H \rightarrow L$, $V_{OUT}=V_{CC}$	30	50	100	mV	
Detection Voltage Temperature Coefficient	$V_{SS}/\Delta T$	1	$R_L=470\Omega$, $T_A=-20 \sim +75^\circ\text{C}$ $V_{OUT}=V_{CC}$		± 0.01		%/°C	
Low Level Output Voltage	V_{OL}	1	$V_{CC}=V_{SS} \text{ min. } -0.05\text{V}$, $R_L=470\Omega$		0.2	0.4	V	
Output Leakage Current	I_{OH}	2	$V_{CC}=10\text{V}$, $V_{OUT}=V_{CC}$			± 0.1	μA	
Circuit Current at ON Time	I_{CCL}	3	$V_{CC}=V_{SS} \text{ min. } -0.05\text{V}$, $R_L=\infty$		3	5	μA	
Circuit Current at OFF Time	I_{CCH}	3	$V_{CC}=V_{SS} \text{ typ. } /0.85$, $R_L=\infty$		3	5	μA	

■ ELECTRICAL CHARACTERISTICS(Cont.)

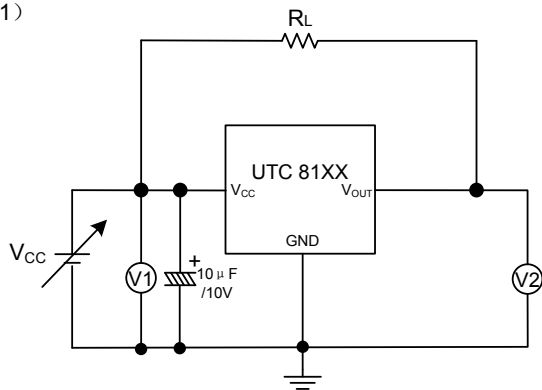
PARAMETER	SYMBOL	(Note 1)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
"H" Transmission Delay Time	TpLH (Note 2)	4	C _L =100pF, R _L =4.7kΩ		20	60	μS
"L" Transmission Delay Time	TpHL (Note 3)	4	C _L =100pF, R _L =4.7kΩ		20	60	μS
Operating Threshold Voltage	V _{OPL}	1	R _L =4.7kΩ, V _{OL} ≤0.4V		0.65	0.85	V
Output current at ON Time 1	I _{OL1}	2	R _L =0, V _{CC} =V _s min.-0.05V, V _{OUT} =0.4V	5			mA
Output current at ON Time 2	I _{OL2}	2	T _A =-20~+75°C R _L =0, V _{CC} =V _{SS} min.-0.15V V _{OUT} =0.4V	3			mA

Note: 1. MEASUREMENT CIRCUIT

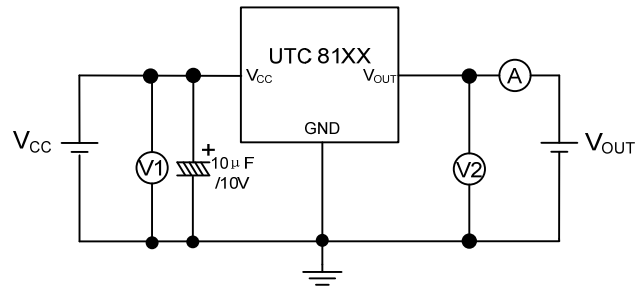
2. TpLH: V_{CC}=(V_{SS} Typ. -0.4V) -> (V_{SS} Typ. +0.4V)
3. TpHL: V_{CC}=(V_{SS} Typ. +0.4V) -> (V_{SS} Typ. -0.4V)

MEASURING CIRCUITS

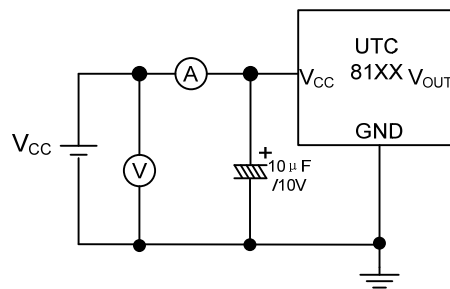
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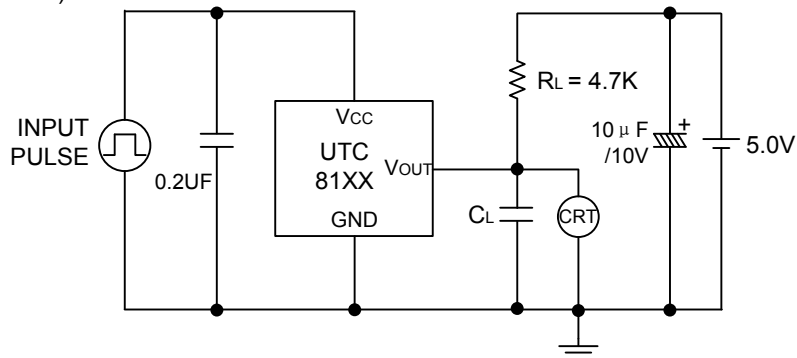
2)



3)



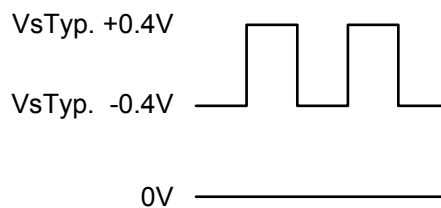
4)



NOTE:

1.) A: DC AMMETER V: DC VOLTMETER CRT: OSCILLOSCOPE

2.) INPUT PULSE



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