Discription

The CS811x is a general-purpose purpose detector which only consume about 5uA at 3.6V, which can be widely used in all electronic system to either monitor a battery voltage or generate a power-on reset signal.It can work under the voltage ranging from 1V to 6V.CS811x also provide a manual reset pin.CS811x employs a low voltage reference, low offset comparator timer and push-pull output stage.Its push-pull output is pushed high after input voltage is greater than the internal setting level for 240ms.
The CS811x is available in SOT-143 package.

Features

- Wide operation range:1-5V
- Voltage detecting level setting range:2.3-5V
- SOT-143 package
- Detection delay time: 240ms
- Reset pin output kept low when input voltage < 1 V
- 4KV ESD

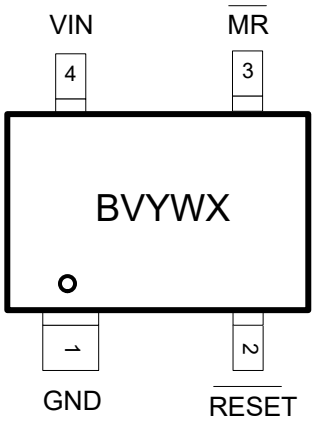
Applications

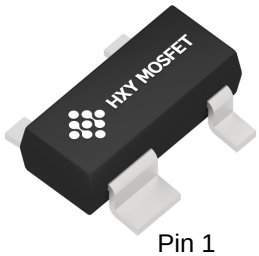
- Battery voltage monitor
- Power-on reset
- Set-top-box
- Voltage level trigger
- Press button debouncing
- Portable devices

Ordering Information

Part No	Voltage Detecting Level	Package	Tape & Reel
CS811Z	2.32V	SOT-143	3K/Reel
CS811R	2.63V		
CS811S	2.93V		
CS811T	3.08V		
CS811J	4.00V		
CS811M	4.38V		
CS811TL	4.63V		

Ordering information





Pin 1

SOT-143

The package of CS811x is SOT-143,with pin assignment shown in following table:

Pin No	Name	Description
1	GND	Ground
2	RESET	The push pull output node, pulled low when V_{IN} is lower than detect level and pushed high when V_{IN} is higher than detect level for 240ms
3	MR	Manual Reset
4	VIN	The power input node as well as the voltage node to be detected

Absolute Ratings (T_{amb}=25°C)

Parameters	Ratings	Units
Input voltage range	−0.3 to +8	V
Lead Temperature	260	°C
Output Voltage RESET	-0.3 to V_{IN} +0.3	V
Junction Temperature	-40 to +125	°C
Continuous Power Dissipations Derate 4 mW/°C above +70°C (SOT−143)	0.3	W
Storage Temperature Range	−65 to +150	°C
Thermal Resistance,Junction-to-Ambient	280	°C/W
Thermal resistance, junction-case.	90	°C/W

Notes:

(1) Exceeding these ratings may damage the device.

(2) The maximum allowable power dissipation is a function of the maximum junction temperature T_J(MAX), the junction-to-ambient thermal resistance θ_{JA}, and the ambient temperature T_A. The maximum allowable continuous power dissipation at any ambient temperature is calculated by P_D(MAX)=(T_J(MAX)-T_A)/θ_{JA}. Exceeding the maximum allowable power dissipation will cause excessive die temperature, and the regulator will go into thermal shutdown. Internal thermal shutdown circuitry protects the device from permanent damage.

(3) Measured on JESD51-7, 4-layer PCB.

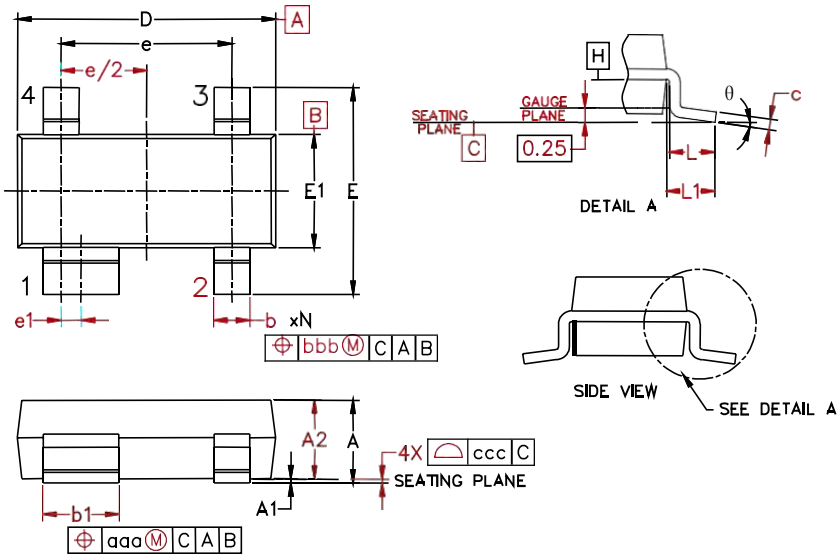
Electrical Characteristics

Parameter	Conditions	Min	Typ	Max	Units
Input voltage range, V_{IN}		1		6	V
Quiescent current, I_Q	V_{IN} = 3.6V, T_A=25°C	3	5	10	μA
	V_{IN} = 3.6V, T_A=-40°C	2	3.5	10	μA
	V_{IN} = 3.6V, T_A=125°C	4	6.3	15	μA
Detecting voltage level, V_{DET}	V_{DET} = 2.32V	2.262	2.32	2.378	V
	V_{DET} = 2.63V	2.564	2.63	2.696	V
	V_{DET} = 2.93V	2.857	2.93	3.003	V
	V_{DET} = 3.08V	3.003	3.08	3.157	V
	V_{DET} = 4.00V	3.92	4.00	4.08	V
	V_{DET} = 4.38V	4.292	4.38	4.468	V
	V_{DET} = 4.63V	4.537	4.63	4.723	V
Delay time	T_A = -40°C to 85°C	150	240	560	ms
Reset falling delay	V_{IN} falling below V_{DET}		2	50	μs
Reset output low voltage, V_{OL}	I_{SINK} = 1.2mA, V_{IN}=2V	0	0.03	0.3	V
Reset output high voltage, V_{OH}	I_{SOURCE} = 1.2mA, V_{IN}=3V	V_{IN}-0.3	V_{IN}-0.05	V_{IN}	V
MR Theshold	VIH	0.7xV_{IN}			V
	VIL			0.3xV_{IN}	V

Function Descriptions

The CS811x is a general-purpose voltage detector. It can work from 1V to 6V while consuming about 5uA at 3.6V CS811x keeps monitoring its VIN voltage, and RESET will jump high if VIN voltage is higher than detecting level V_{DET} for 240ms.Given all these features,CS811x is suitable for the applications like battery voltage monitoring,power-on reset, voltage comparison and even press button debouncing. CS811x also provide a manual reset pin.

Package Mechanical Data



Symbol	Inches			Millimeters		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.031	-	0.048	0.80	-	1.22
A1	0.000	-	0.008	0.013	-	0.15
A2	0.020	0.035	0.042	0.75	0.90	1.07
b	0.011	-	0.020	0.30	-	0.51
b1	0.029	-	0.037	0.76	-	0.94
c	0.003	-	0.008	0.08	-	0.20
D	0.110	0.114	0.120	2.80	2.90	3.04
E	0.082	0.093	0.104	2.10	2.37	2.64
E1	0.047	0.051	0.055	1.20	1.30	1.40
e	0.075			1.92 BSC		
e1	0.008			0.20 BSC		
L	0.015	0.020	0.024	0.40	0.50	0.60
L1	(0.021)			(0.54)		
N	4			4		
θ	0°	-	8°	0°	-	8°
aaa	0.006			0.15		
bbb	0.008			0.20		
ccc	0.004			0.10		

Attention

■ Any and all HUA XUAN YANG ELECTRONICS products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your HUA XUAN YANG ELECTRONICS representative nearest you before using any HUA XUAN YANG ELECTRONICS products described or contained herein in such applications.

■ HUA XUAN YANG ELECTRONICS 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 HUA XUAN YANG ELECTRONICS products described or contained herein.

■ Specifications of any and all HUA XUAN YANG ELECTRONICS products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.

■ HUA XUAN YANG ELECTRONICS CO.,LTD. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could
give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.

■ In the event that any or all HUA XUAN YANG ELECTRONICS products(including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.

■ Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. HUA XUAN YANG ELECTRONICS believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

■ Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the HUA XUAN YANG ELECTRONICS product that you intend to use.