Discription

The CAT811 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.CAT811 also provide a manual reset pin.
CAT811 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 CAT811 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

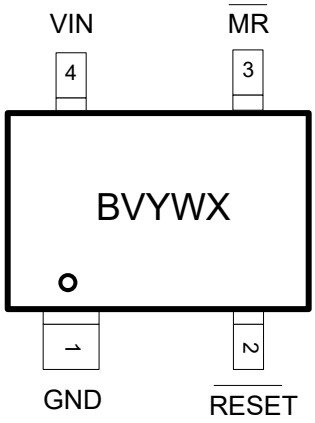
Applications

- 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
CAT811ZTBI-GT3	2.32V	SOT-143	3K/Reel
CAT811RTBI-GT3	2.63V		
CAT811STBI-GT3	2.93V		
CAT811TTBI-GT3	3.08V		
CAT811JTBI-GT3	4.00V		
CAT811MTBI-GT3	4.38V		
CAT811LTBI-GT3	4.63V		

Ordering information



SOT-143

The package of CAT811 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 (1)	-0.3 to +8	V
Lead Temperature	260	°C
Output Voltage RESET (1)	-0.3 to V_{IN} +0.3	V
Junction Temperature	-40 to +125	°C
Continuous Power Dissipations (2)	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.

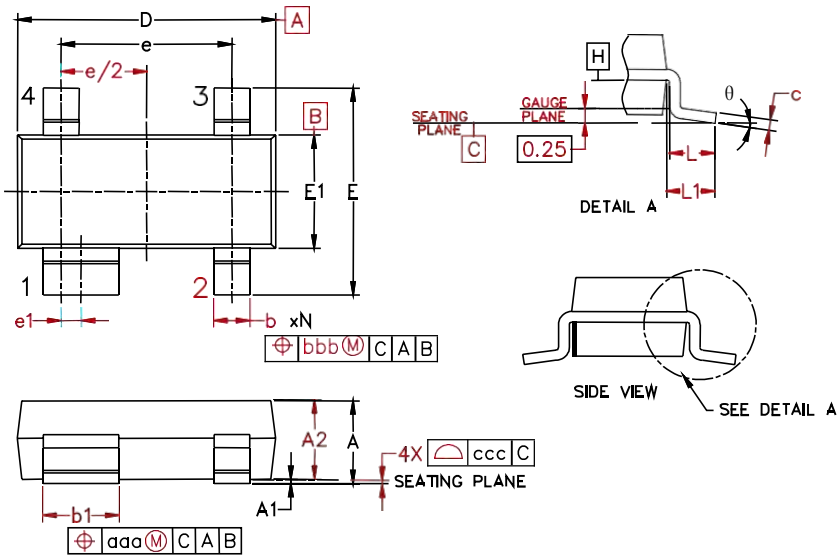
Electrical Characteristics

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 CAT811 is a general-purpose voltage detector. It can work from 1V to 6V while consuming about 5uA at 3.6V CAT811 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,CAT811 is suitable for the applications like battery voltage monitoring,power-on reset, voltage comparison and even press button debouncing.
CAT811 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		

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