Discription

The IMP811xEUS/T 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.IMP811xEUS/T also provide a manual reset pin.IMP811xEUS/T 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 IMP811xEUS/T 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

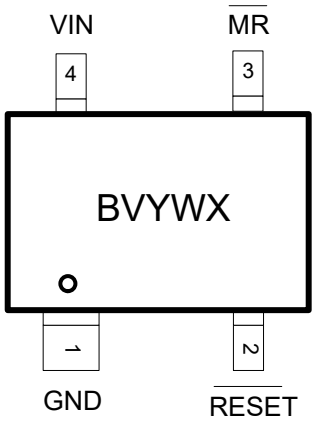
Applications

- 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
IMP811ZEUS/T	2.32V	SOT-143	3K/Reel
IMP811REUS/T	2.63V		
IMP811SEUS/T	2.93V		
IMP811TEUS/T	3.08V		
IMP811JEUS/T	4.00V		
IMP811MEUS/T	4.38V		
IMP811LEUS/T	4.63V		

Ordering information



SOT-143

The package of IMP811xEUS/T 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.

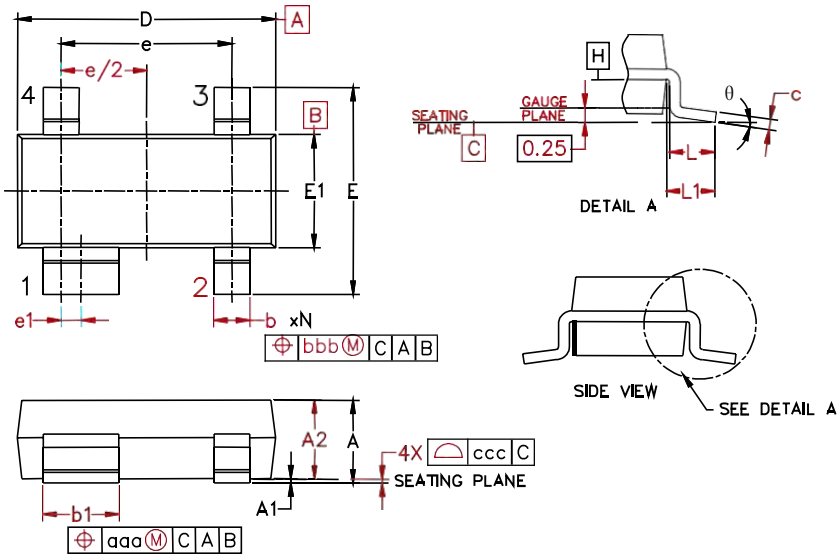
Electrical Characteristics

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 IMP811xEUS/T is a general-purpose voltage detector. It can work from 1V to 6V while consuming about 5uA at 3.6V IMP811xEUS/T 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,IMP811xEUS/T is suitable for the applications like battery voltage monitoring,power-on reset, voltage comparison and even press button debouncing. IMP811xEUS/T 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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