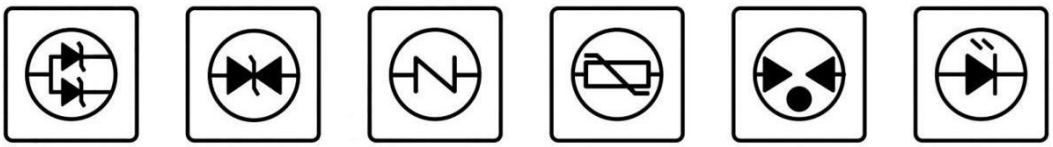
MSKSEMI 美森科
SEMICONDUCTOR



CAT811XTBI-GT3-MS

产品手册

GENERAL DESCRIPTION

The CAT811XTBI-GT3-MS is a general-purpose voltage 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. CAT811XTBI-GT3-MS also provide a manual reset pin.

CAT811XTBI-GT3-MS 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 CAT811XTBI-GT3-MS is available in SOT-143 package.

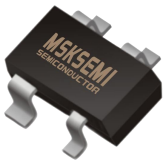
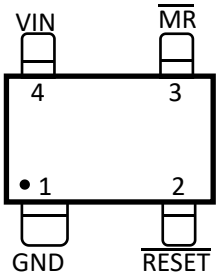
FEATURES

- Wide operation range: 1-6V
- Voltage detecting level setting range: 2.3-5V
- SOT-143 package
- Detection delay time: 240ms
- Reset pin output kept low when input voltage < 1V
- 4KV ESD

APPLICATION

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

PINASSIGNMENT

PACKAGE	PIN DEFINITION
	
SOT-143	

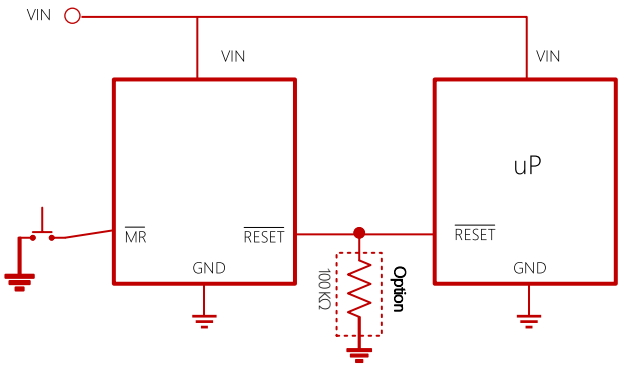
1	GND	Ground
2	$\overline{\text{RESET}}$	The push pull output node, pulled low when V_{IN} is lower than detect level and pushed high when V_{IN} is higher than detect level for 240ms
3	$\overline{\text{MR}}$	Manual Reset
4	VIN	The power input node as well as the voltage node to be detected

ORDER INFORMATION AND MARKING

Part No	Voltage Detecting Level	Package	Tape & Reel
CAT811RTBI-GT3-MS	2.63V	SOT-143	3000
CAT811STBI-GT3-MS	2.93V		3000
CAT811TTBI-GT3-MS	3.08V		3000

CAT811RTBI-GT3-MS	CAT811STBI-GT3-MS	CAT811TTBI-GT3-MS
VEA3	VEA2	VEA1

TYPICAL APPLICATION



Detector output remains low if V_{IN} is below detecting level, and jumps to high if VIN is above detecting level for 240ms

ABSOLUTE MAXIMUMRATINGS

V_{IN} [1]·····-0.3V to 8V

$V_{RESET, MR}$ [1]·····-0.3V to V_{IN}+0.3V

Continuous Power Dissipation (T_A = 25°C) [2]

SOT-143 ·····0.3W

Junction Temperature·····-40°C to 125°C

Lead Temperature·····260°C

Storage Temperature·····-65°C to +150°C

Thermal Resistance [3] θ_{JA} θ_{JC}

SOT-143 ·····280°C /W·····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

All typical values are at Tj=25℃(unless otherwise noted)

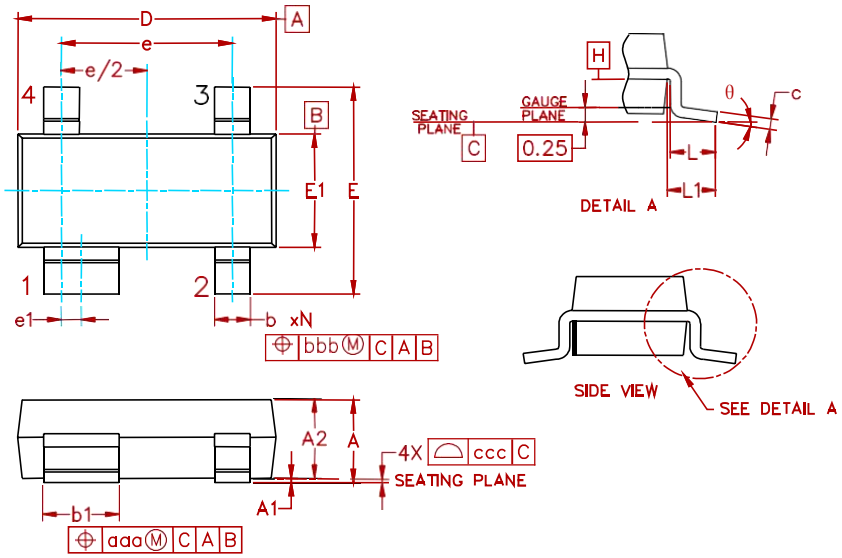
PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Input voltage range, V_{IN}		1		6	V
Quiescent current, I_Q	V_{IN} = 3.6V, T_A=25℃	3	5	10	μA
	V_{IN} = 3.6V, T_A=-40℃	2	3.5	10	μA
	V_{IN} = 3.6V, T_A=125℃	4	6.3	15	μA
Detecting voltage level, V_{DET}	V_{DET} = 2.32V	2.262	2.32	2.378	V
	V_{DET} = 2.63V	2.564	2.63	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℃	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	0.7xVIN			V
	VIL			0.3xV_{IN}	V

FUNCTIONDESCRIPTIONS

The CAT811XTBI-GT3-MS is a general-purpose voltage detector. It can work from 1V to 6V while consuming about 5uA at 3.6V.

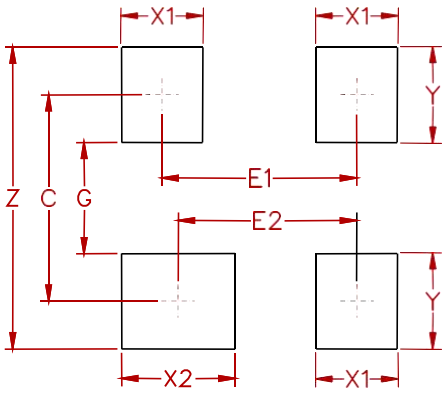
CAT811XTBI-GT3-MS keeps monitoring its VIN voltage, and RESET will jump high if VIN voltage is higher than detecting level VDET for 240ms. Given all these features,CAT811XTBI-GT3-MS is suitable for the applications like battery voltage monitoring, power on reset, voltage comparison and even press button debouncing. CAT811XTBI-GT3-MS 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		

Suggested Pad Layout



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