



AnaSem Analog Semiconductor IC VDD Series

Low Voltage/Low Power/High Accuracy CMOS Voltage Detector with Delay

Description

The VDD series is a voltage detector of low power consumption, the low voltage, and high accuracy with Delay circuit.

The accuracy of the detection voltage is detected based on a voltage reference of high accuracy that the temperature coefficient is controlled.

The detection voltage is made in high accuracy by using the laser trim technology.

Delay time can be set without external parts by the built-in delay circuit.

Feature

- Detect voltage: 0.8 ~ 6.0V (Selectable 0.1V Step)
- Operating voltage: 0.7V ~ 6.0V
- High accuracy detect voltage: $\pm 1\%$ (1.8 Vdet 6V)
- Detect voltage temperature characteristics: Typ $\pm 20\text{ppm}/(1.8 \text{ Vdet } 6\text{V})$
- Delay : S/10 ~ 50ms , M/50 ~ 200ms , L/80 ~ 400ms
- Output driver: CMOS or N-channel open drain
- Low current consumption: $0.6 \mu\text{A}/\text{Typ}/\text{Vin}=1.5\text{V}$
- Operating temperature range: -40 to 85
- Small package: SOT-23(400mW) SON-4(400mW)

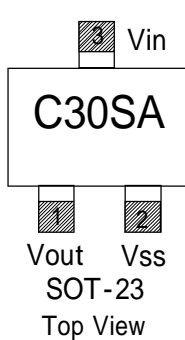
Applications

- Reset of microprocessor
- Power-on reset of system
- Charge detection of battery
- Battery backup of memory
- Detection of battery life
- Delay circuit

Product Number: **VDD 30 1SC TA**
VDD 30 1SCNA

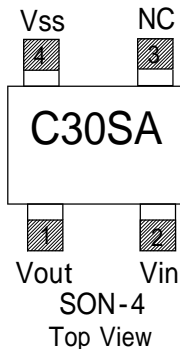
VDA	300:Detect Voltage Spec	C :Function Spec	T :Package N :Package	A :Version
AnaSem V/D A-Series	30:3.0V Detect 10:1% Accuracy 20:2% Accuracy	C :CMOS Output N:Nch open drain	T:SOT-23 N:SON-4	A :-40 ~ +85

Pin Configuration

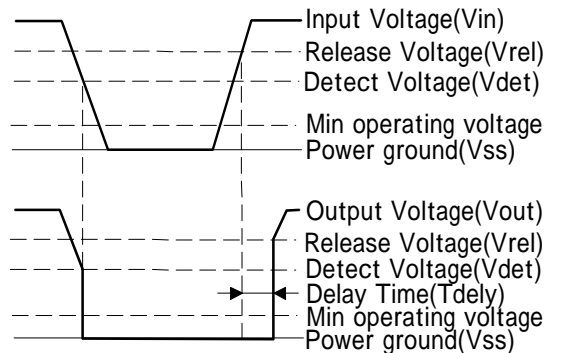


Pin	Name	Description
1	Vout	Output
2	Vss	Power Ground
3	Vin	Input Voltage

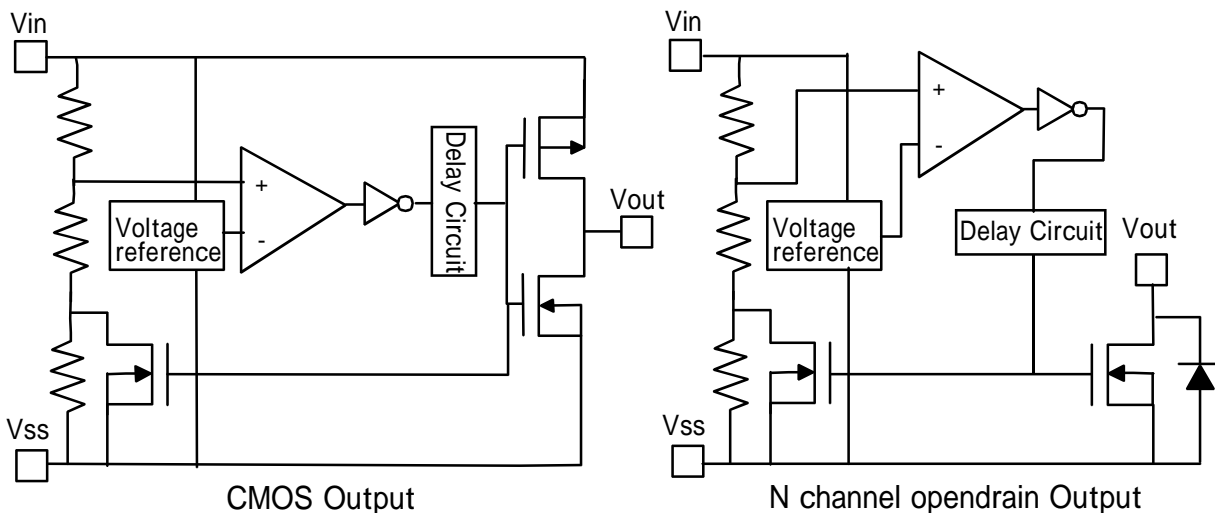
Pin	Name	Description
1	Vout	Output
2	Vin	Input Voltage
3	NC	
4	Vss	Power Ground



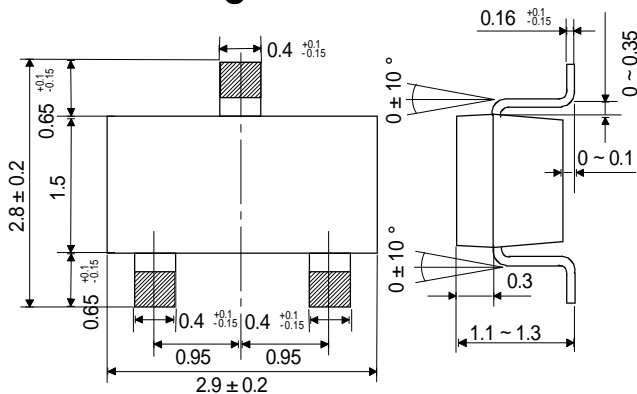
Timing Chart



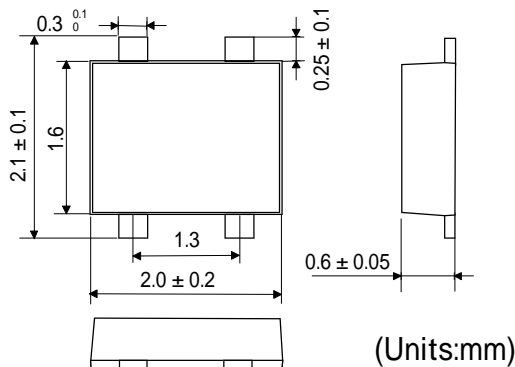
Block Diagram



Package Size



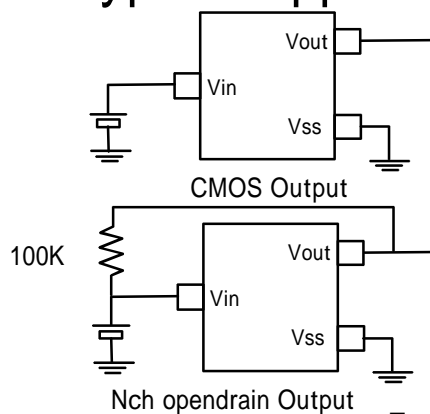
SOT-23 Top View



SON - 4 Top View
Typical Application

Absolute Maximum Rating

Item	Sign	Value
Input Supply Voltage	Vin	-0.3V ~ +7.0V
Output Current	Iout	50mA
Output Voltage	Vout	Vss-0.3V ~ Vin+0.3V
Power Dissipation	SOT-23	Pd 400mW(ON PCB)
	SON-4	Pd 400mW(ON PCB)
Operating Temperature Range	Topr	-40 ~ +85
Storage Temperature Range	Tstg	-50 ~ +125



Electric Characteristics

Item	Symbol	Measurement condition	Spec			Unit
			Min	Typ	Max	
Operating voltage		0.8V Vdet 6.0V	0.7		6.0	V
Detect voltage	Vdet	1.8V Vdet 6.0V -40 Ta +85	Vdet × 0.99	Vdet	Vdet × 1.01	V
		0.8V Vdet 1.7V	Vdet × 0.98	Vdet	Vdet × 1.02	
Hysteresis range	Vhys		Vdet × 0.02	Vdet × 0.05	Vdet × 0.08	V
Output current	Iout	N ch Vds=0.5V	Vin=0.7V	0.1	0.4	mA
			Vin=1.0V	1.0	2.3	mA
			Vin=2.0V	3.0	8.2	mA
			Vin=3.0V	5.0	11.1	mA
			Vin=4.0V	6.0	12.8	mA
			Vin=5.0V	7.0	13.8	mA
		CMOS Pch Vds=2.1V	Vin=6.0V		-9.5	-1.5
Current consumption	Iss		Vin=1.5V	0.6	2.1	μA
			Vin=2.0V	0.7	2.5	μA
			Vin=3.0V	0.8	2.8	μA
			Vin=4.0V	0.9	3.0	μA
			Vin=5.0V	1.0	3.4	μA
Leak current	Ileak	Vin=6.0V Vout=6.0V		10	100	nA
Detect voltage Temperature characteristics	Vdet / Topr - Vdet	1.8V Vdet 6.0V -40 Ta +85		± 20		ppm/
		0.8V Vdet 1.7V -40 Ta +85		± 100		ppm/
Output reversing delay time (from Vdet to Vout reverse)	Tdelay	Vin=0.7V ~ 6.0V	S	10	50	msec
			M	50	200	msec
			L	80	400	msec

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