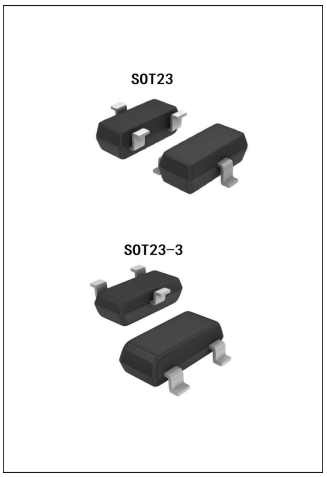
Low Power Voltage Detector

SSP61C series

General Description

The SSP61C series devices are a set of three terminal low power voltage detectors implemented in CMOS technology. Each voltage detector in the series detects a particular fixed voltage ranging from 0.9V to 5.0V. The voltage detectors consist of a high-precision and low power consumption standard voltage source as well as a comparator,hysteresis circuit, and an output driver (CMOS inverter or NMOS open drain). CMOS technology ensures low power consumption.

Although designed primarily as fixed voltage detectors, these devices can be used with external components to detect user specified threshold voltages.



Features

- Low power consumption
- Low temperature coefficient
- Built-in hysteresis characteristic
- High input voltage (up to 8V)
- Output voltage accuracy: tolerance ±1% or ±2%
- SOT23-3 and SOT23 package

Applications

- Battery checkers
- Level selectors
- Power failure detectors
- Microcomputer reset
- Battery memory backup
- Non-volatile RAM signal storage protectors

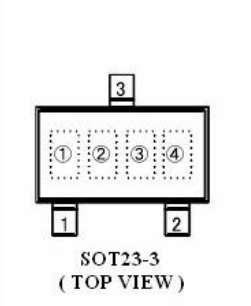
Order Information

Part No	Output	Detectable Voltage	Tolerance	Package	Devices per reel
SSP61CC0901MR	CMOS	0.9V	±1%	SOT23-3 SOT23	3000PCS
SSP61CN0901MR	NMOS	0.9V	±1%		
SSP61CC0902MR	CMOS	0.9V	±2%		
SSP61CN0902MR	NMOS	0.9V	±2%		
…	…	…	…		
SSP61CC2501MR	CMOS	2.5V	±1%		
SSP61CN2501MR	NMOS	2.5V	±1%		
SSP61CC2502MR	CMOS	2.5V	±2%		
SSP61CN2502MR	NMOS	2.5V	±2%		
…	…	…	…		
SSP61CC2801MR	CMOS	2.8V	±1%		
SSP61CN2801MR	NMOS	2.8V	±1%		
SSP61CC2802MR	CMOS	2.8V	±2%		
SSP61CN2802MR	NMOS	2.8V	±2%		
…	…	…	…		
SSP61CC3001MR	CMOS	3.0V	±1%		
SSP61CN3001MR	NMOS	3.0V	±1%		
SSP61CC3002MR	CMOS	3.0V	±2%		
SSP61CN3002MR	NMOS	3.0V	±2%		
…	…	…	…		
SSP61CC5001MR	CMOS	5.0V	±1%		
SSP61CN5001MR	NMOS	5.0V	±1%		
SSP61CC5002MR	CMOS	5.0V	±2%		
SSP61CN5002MR	NMOS	5.0V	±2%		

Note:SSP61C①②③④⑤⑥⑦

Designator	Symbol	Description
①	C	CMOS output
	N	NMOS output
②③	VOUT	Output Voltage(0.9~5.0V) The stepping value:0.1V
④⑤	02	±2% accuracy
	01	±1% accuracy
⑥	M	Package:SOT23-3
	N	Package:SOT23
⑦	R	RoHS / Pb Free
	G	Halogen Free

Marking rule



①Represents integer of detect voltage and

CMOS Output

MARK	CONFIGURATION	VOLTAGE(V)
A	CMOS	0.X
B	CMOS	1.X
C	CMOS	2.X
D	CMOS	3.X
E	CMOS	4.X
F	CMOS	5.X
H	CMOS	6.X

N-Channel Open Drain Output

MARK	CONFIGURATION	VOLTAGE(V)
K	N-ch	0.X
L	N-ch	1.X
M	N-ch	2.X
N	N-ch	3.X
P	N-ch	4.X
R	N-ch	5.X
S	N-ch	6.X

②Represents decimal number of detect voltage

MARK	VOLTAGE(V)	MARK	VOLTAGE(V)
0	X.0	5	X.5
1	X.1	6	X.6
2	X.2	7	X.7
3	X.3	8	X.8
4	X.4	9	X.9

③Represents accuracy

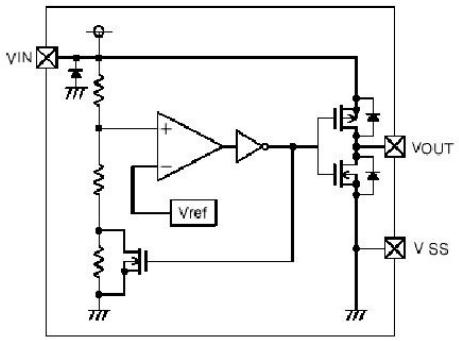
MARK	ACCURACY
3	2%
1	1%

④Represents production lot number

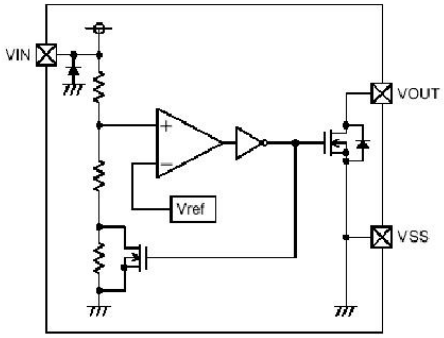
Based on the internal standard. (G,I,J,O,Q,W excepted)

Block Diagram and Pin Arrangement Diagram

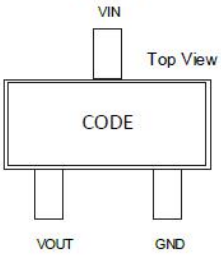
(1) CMOS Output



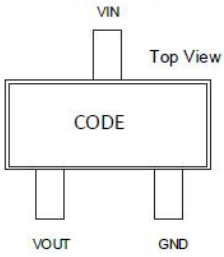
(2) N-ch Open Drain Output



SOT23



SOT23-3

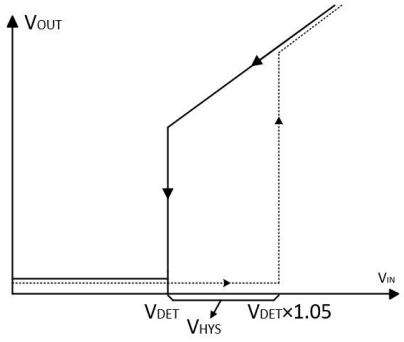


Pin Assignment

Pin No.	Pin Name	Description
1	VOUT	Output.
2	GND	Ground connection.
3	VIN	Supply Voltage Input.

Output Table & Curve

V_{DD}	$V_{DD}>V_{DET}(+)$	$V_{DD}\leqslant V_{DET}(-)$
V_{OUT}	Hi-Z	V_{SS}



Dash line: V_{IN} from Lo → Hi
Solid line: V_{IN} from Hi → Lo

Functional Description

The SSP61C series devices are a set of three terminal low power voltage detectors implemented in CMOS technology. Each voltage detector in the series detects a particular fixed voltage ranging from 0.9V to 5.0V.

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Supply Voltage Input	VIN	-0.3~8.0	V
Operating Temperature	Tamb	-30~80	℃
Storage Temperature	Tstg	-50~125	℃

Note: These are stress ratings only. Stresses exceeding the range specified under "Absolute Maximum Ratings" may cause substantial damage to the device. prolonged exposure to extreme conditions may affect device reliability.

Thermal Information

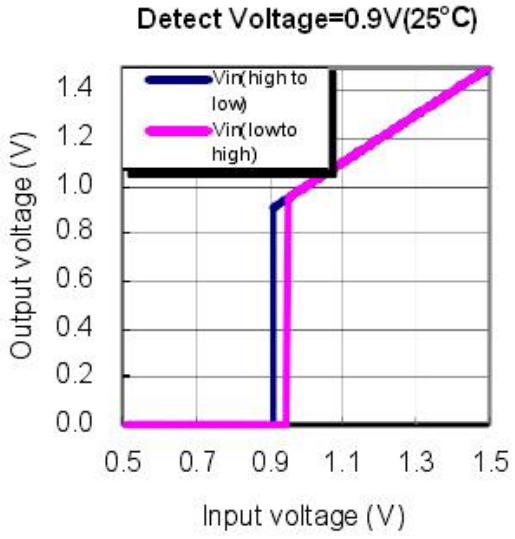
Parameter	Symbol	Package	Max.	Unit
Thermal Resistance (Junction to Ambient) (Assume no ambient airflow, no heat sink)	θ_{JA}	SOT23-3	250	℃/W
Power Dissipation	P_D		0.20	W

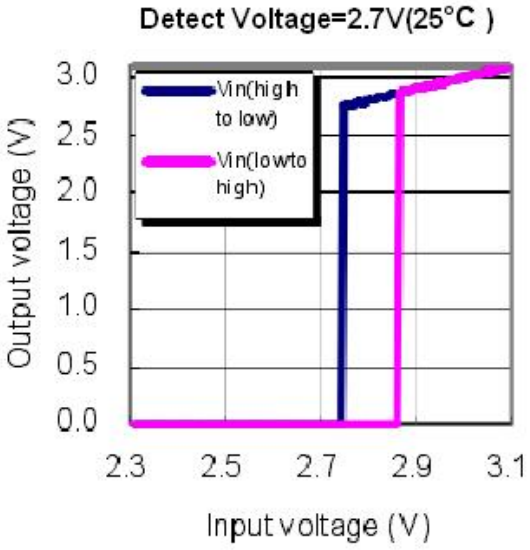
Electrical Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Detection Voltage	VDET	VDF=0.8V~5.0V	VDF* 0.98	VDF	VDF* 1.02	V
Hysteresis Width	VHYS	-	0.02* VDET	0.05* VDET	0.10* VDET	V
Operating Current	IDD	Vin=1.5V	-	0.7	2.3	μA
		Vin=2.0V	-	0.8	2.7	
		Vin=3.0V	-	0.9	3.0	
		Vin=4.0V	-	1.0	3.2	
		Vin=5.0V	-	1.1	3.6	
Operating Voltage	VDD	-	0.7	-	8	V
Output Sink Current	IOL	2V VOUT=0.2V	0.5	1	-	mA
Temperature Coefficient	$\frac{\Delta V_{DET}}{V_{DF}\Delta T_a}$	-25℃<Ta<125℃	-	±100	-	ppm/℃

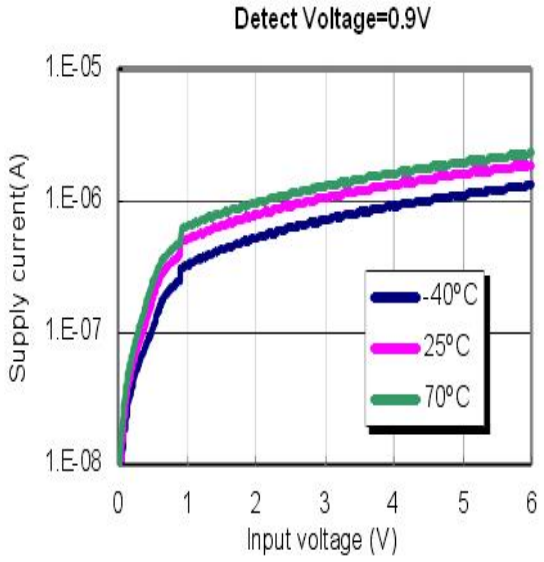
Typical Performance Characteristics

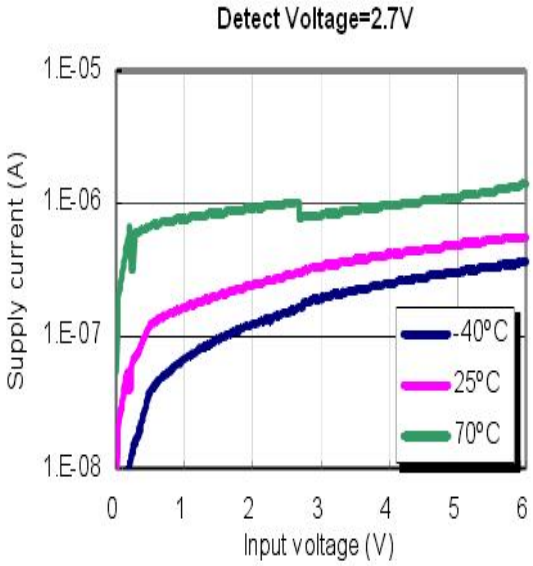
(1) Output Voltage vs Input voltage



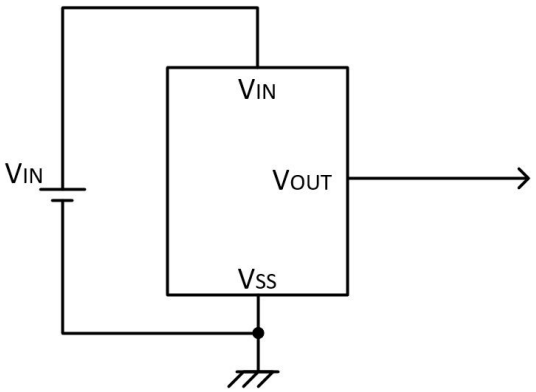


(2) Supply Current vs. Input Voltage

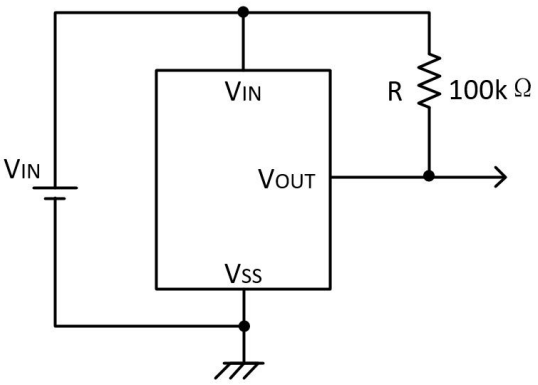




Application Circuits



CMOS Output

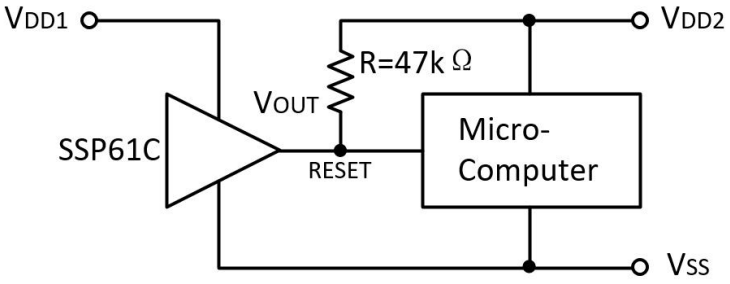


N-ch Open Drain Output

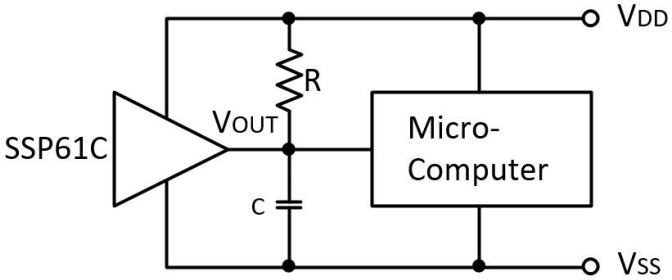
Microcomputer Reset Circuit

Normally a reset circuit is required to protect the microcomputer system from malfunctions due to power line interruptions. The following examples show how different output configurations perform a reset function in various systems.

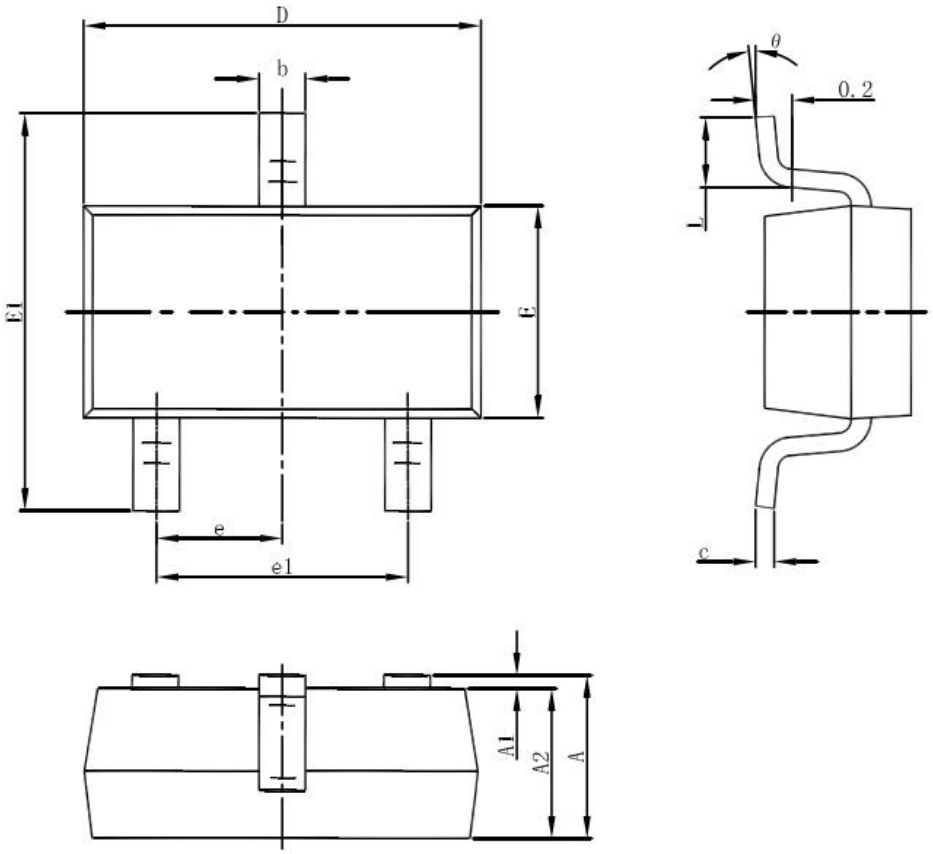
NMOS open drain output application for separate power supply:



NMOS open drain output application with R-C delay:

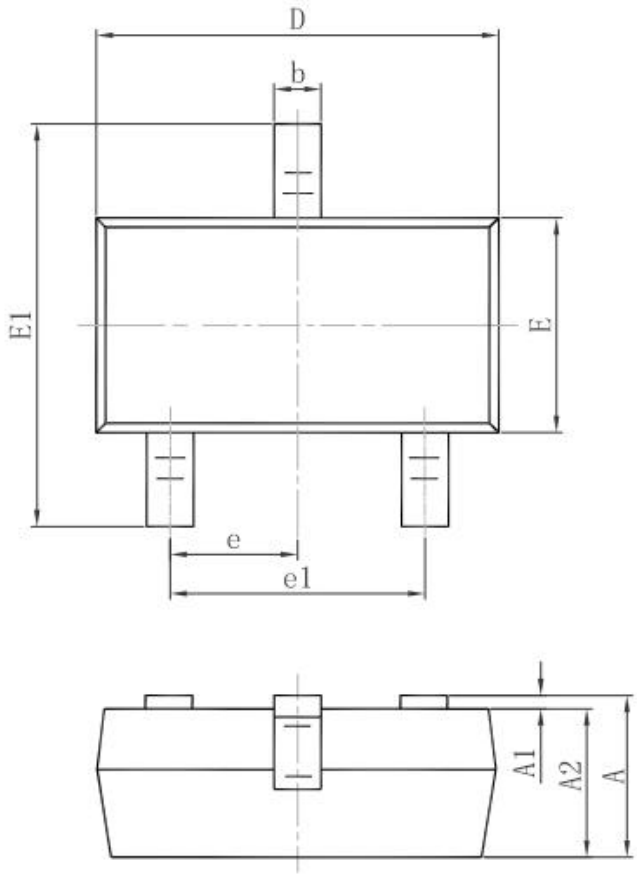


Package Information（SOT23-3）



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

Package Information（SOT23）



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950TYP.		0.037TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550REF.		0.022REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Special Instructions

The company reserves the right of final interpretation of this specification.

Version Change Description

Version：V1.3	Author：Yangyang	Time：2021.9.30
Modify the record：		
1. Re-typesetting the manual and checking some data		
Version：V1.4	Author：Yang	Time：2026.2.5
Modify the record：		
1. Updating and modifying the operating voltage in Electrical Characteristics		

Statement

The information in the usage specification is correct at the time of publication, Shanghai Siproin Microelectronics Co.,Ltd. has the right to change and interpret the specification, and reserves the right to modify the product without prior notice. Users can obtain the latest version information from our official website or other effective channels before confirmation, and verify whether the relevant information is complete and up to date.

With any semiconductor product, there is a certain possibility of failure or failure under certain conditions. The buyer is responsible for complying with safety standards and taking safety measures when using the product for system design and complete machine manufacturing. The product is not authorized to be used as a critical component in life-saving or life-sustaining products or systems, in order to avoid potential failure risks that may cause personal injury or property loss.