

# CMOS System Reset IC with Separated Sense Line Monolithic IC PST85XX

## Outline

This is a reset IC with an independent voltage detection monitor terminal VS and V<sub>DD</sub> terminal.

The IC power supply is separate and so, even if the monitor voltage VS is low, the output does not become unstable at the operation limit like conventional reset ICs. Instead it maintains low-level operation.

This IC is particularly suitable for low-voltage (1V type) power monitoring. It has an accuracy of ±1.5% and an ultra-low current consumption of 0.35 μA typ. and otherwise offers characteristics resembling those of conventional IC reset ICs.

## Features

- |  |                  |
|--|------------------|
| 1. IC power supply terminal VDD and voltage-detecting monitor terminal VS are independent of each other. |                  |
| 2. High accuracy voltage detection   | 1.5% (Ta = 25°C) |
| 3. Ultra low current consumption   | 0.35 μA typ.     |
| 4. Low operating supply voltage  | 0.7~10.0V        |
| 5. Operating temperature range   | -40~+105°C       |

## Packages

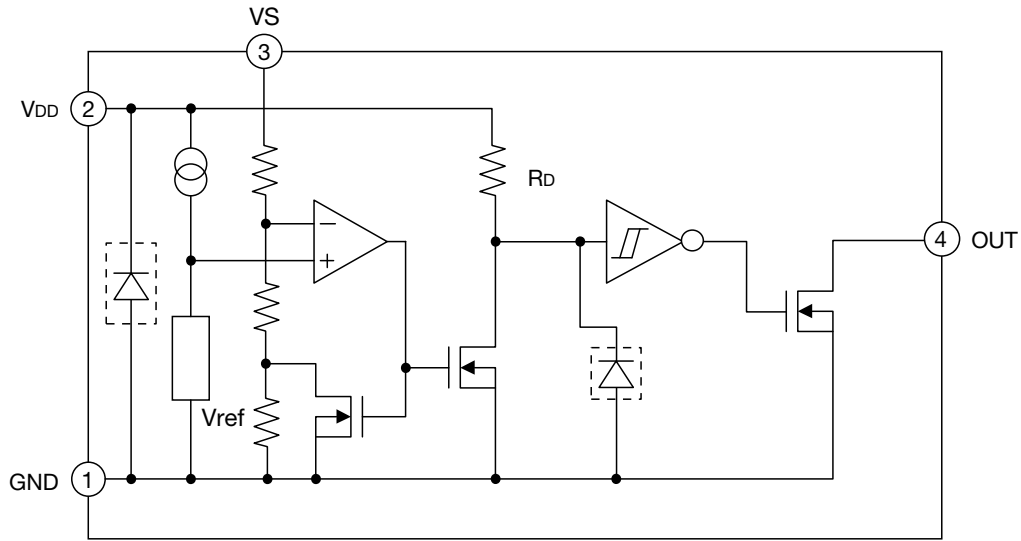
SSON-4  
SOT-25A  
SC-82AB

## Applications

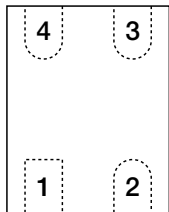
1. Reset circuits for CPUs and MPUs
2. Reset circuits for logic circuits
3. Battery voltage check circuits

## Block Diagram

①-④ in the circuit diagram is pin number for the SC-82AB package.

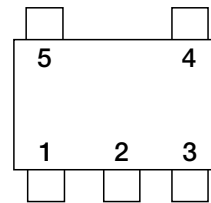


## Pin Assignment



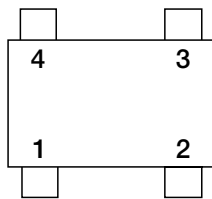
SSON-4  
(TOP VIEW)

1	GND
2	OUT
3	VS
4	V <sub>DD</sub>



SOT-25A  
(TOP VIEW)

1	OUT
2	V <sub>DD</sub>
3	GND
4	NC
5	VS



SC-82AB  
(TOP VIEW)

1	GND
2	V <sub>DD</sub>
3	VS
4	OUT

## Pin Description

### SSON-4

Pin No.	Pin name	Functions
1	GND	GND Pin
2	OUT	Reset Signal Output Pin
3	VS	Sence Pin
4	V <sub>DD</sub>	V <sub>DD</sub> Pin

### SOT-25A

Pin No.	Pin name	Functions
1	OUT	Reset Signal Output Pin
2	V <sub>DD</sub>	V <sub>DD</sub> Pin
3	GND	GND Pin
4	NC	No Connection
5	VS	Sence Pin

### SC-82AB

Pin No.	Pin name	Functions
1	GND	GND Pin
2	V <sub>DD</sub>	V <sub>DD</sub> Pin
3	VS	Sence Pin
4	OUT	Reset Signal Output Pin

## Absolute Maximum Ratings

Item	Symbol	Ratings	Units
Supply voltage	$V_{DD}$ max.	-0.3~+12.0	V
Output voltage	OUT	-0.3~+12.0	V
Output voltage	VS	-0.3~+12.0	V
Input current ( $V_{DD}$ )	$I_{DD}$	20	mA
Output current (RESET, $\overline{\text{RESET}}$ )	$I_{OUT}$	20	mA
Power dissipation	$P_D$	150(SOT-25A, SC-82AB)	mW
		330(SSON-4)	
Operating temperature	$T_{OPR}$	-40~+105	°C
Storage temperature	$T_{STG}$	-65~+150	°C

## Recommended Operating Conditions

Item	Symbol	Ratings	Units
Operating temperature	$T_{OPR}$	-40~+105	°C
Supply voltage	$V_{DD}$	0.70~10.0	V

## Electrical Characteristics (Except where noted otherwise $T_a=25^\circ\text{C}$ )

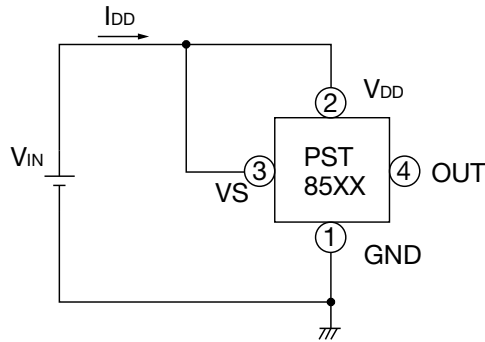
Item	Symbol	Measurement conditions	Min.	Typ.	Max.	Units	Circuit
Reset threshold	$V_{TH}$	$V_{DD}=V_{TH}+1V$ $T_a=+25^\circ\text{C}$ $T_a=-40\sim+85^\circ\text{C}$	0.8373	0.8500	0.8628	V	2
			0.8288		0.8713		
Reset threshold hysteresis	$\Delta V_{TH}$	$V_{DD}=V_{TH}+1V$ $VS=0V \rightarrow V_{TH}+1V \rightarrow 0V$	0.025	0.043	0.068	V	2
Supply current	$I_{DD}$	$V_{DD}=V_{TH}+1V$		0.35	1.0	$\mu\text{A}$	1
Reset threshold temp. coefficient	$\Delta V_{TH}/^\circ\text{C}$	$T_a=-40\sim+85^\circ\text{C}$		$\pm 100$		ppm/°C	2
"L" output current	$I_{OL1}$	$V_{DD}=VS=0.7V,$ $V_{DS}=0.05V$	0.01	0.10		mA	3
VS Input Current	$I_S$	$V_{DD}=VS=V_{TH}+1V$		100		nA	4
Output leakage current	$I_{leak}$	$V_{DD}=VS=10V,$ $OUT=10V$			0.1	$\mu\text{A}$	3

note1 : This device is tested at  $T_a=25^\circ\text{C}$ , over temperature limits guaranteed by design only.

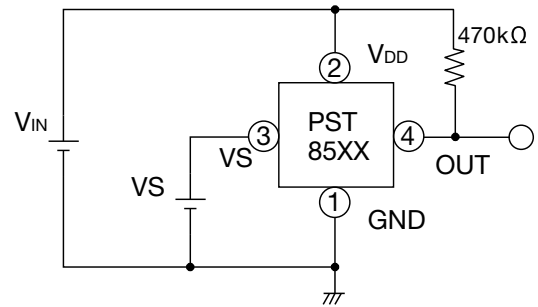
## Measuring Circuit

\*①-④ in the circuit diagram is pin number for the SC-82AB package.

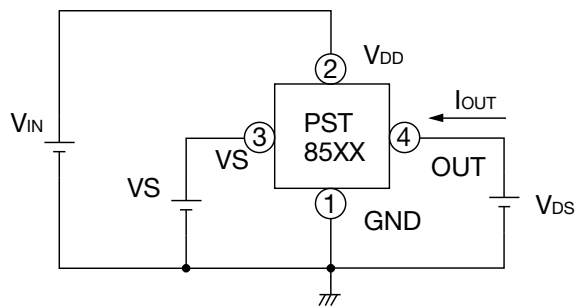
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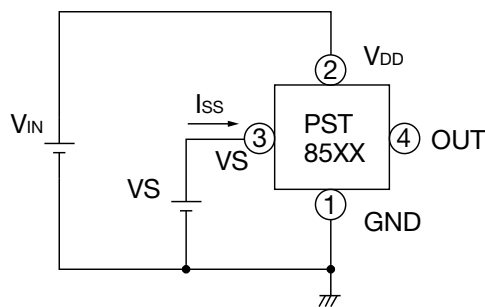
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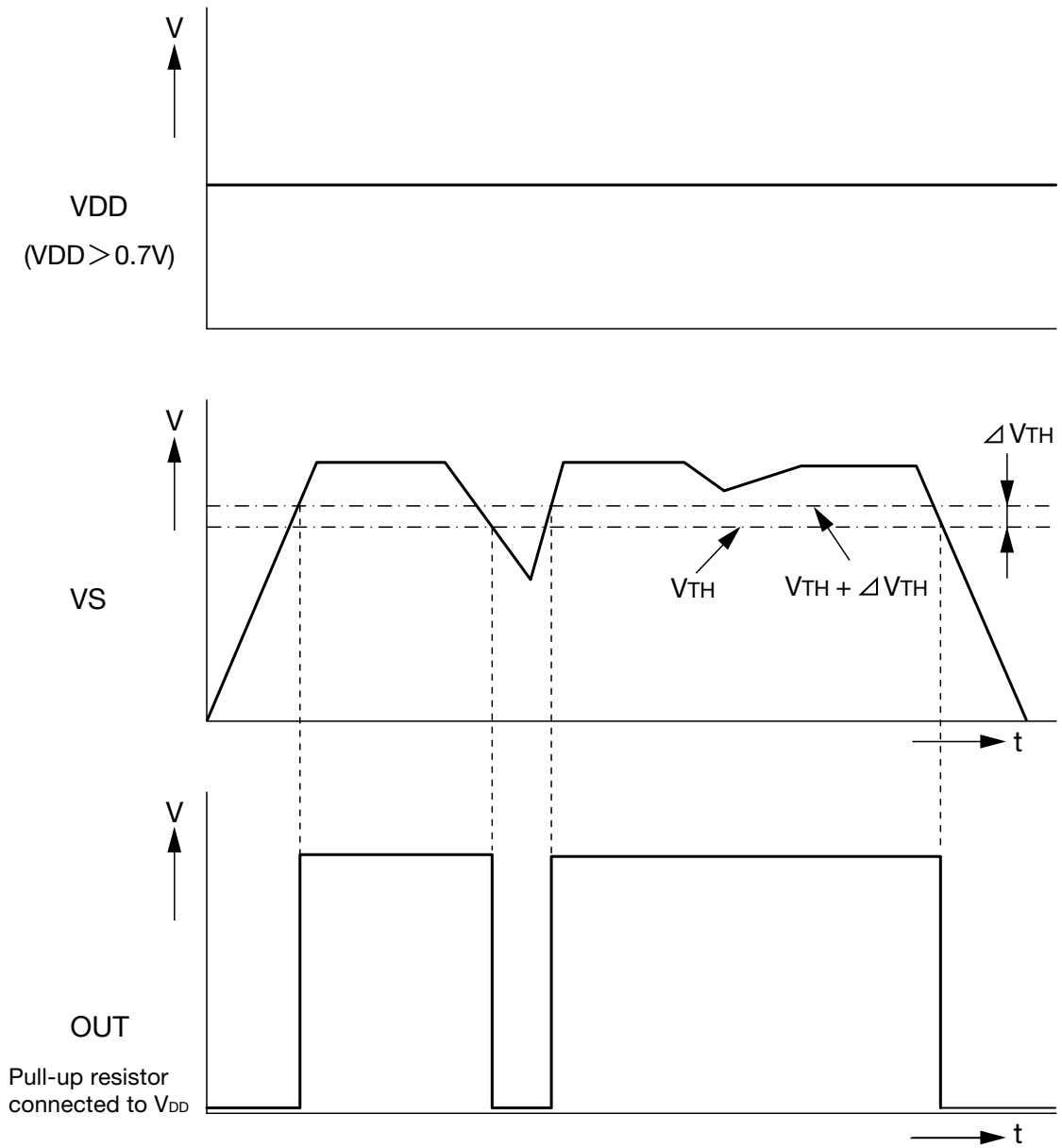
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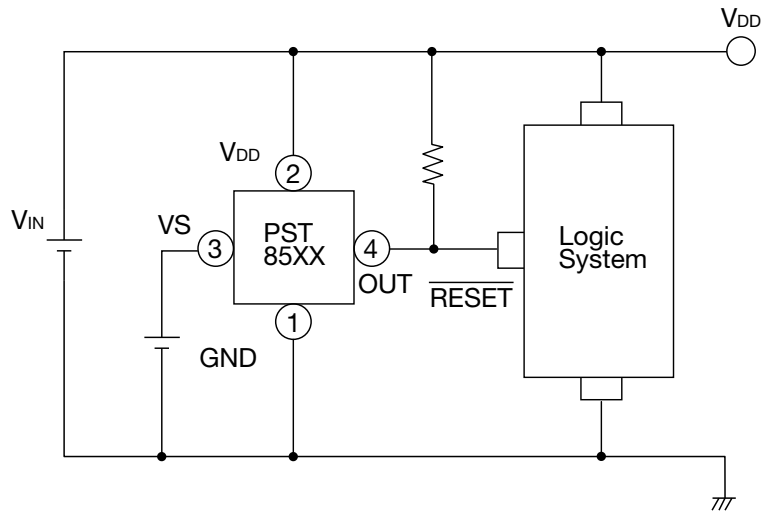
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Timing Chart



Application Circuits



- We shall not be liable for any trouble or damage caused by using this circuit.
- In the event a problem which may affect industrial property or any other rights of us or a third party is encountered during the use of information described in these circuit, Mitsumi Electric Co., Ltd. shall not be liable for any such problem, nor grant a license therefore.