

Reset IC

IC-PST86 Series

Overview

This IC is a reset IC for turning on/off power supply and power flicker in CPU or logic systems.

The IC applies to the small battery(Li-ion, Li-pol) equipment by high accuracy 1.0% max. and low supply current 0.25μA typ. PST86XX is compatible with PST82XX.

Features

- Low current consumption

Main specifications

- Absolute maximum rating : -0.3V ~ 7.0V
- Operating voltage : 0.95V ~ 6.5V
- Operating ambient temperature : -40°C ~ 105°C
- Detection voltage : 1.2V ~ 5.2V (0.1V step)
- Detection voltage accuracy : ±1%
- Hysteresis voltage : Typ. $V_{TH} \times 0.05$
- Consumption current : Typ. 0.25μA
- Output type : Open drain
- Output logic : Active L

Packages

- SC-82ABB
- SOT-25A

Application

- Reset circuits for microcomputers, CPUs and MPUs
- Reset circuits for logic circuits
- Battery voltage check circuits
- Back-up power supply switching circuits
- Level detection circuits

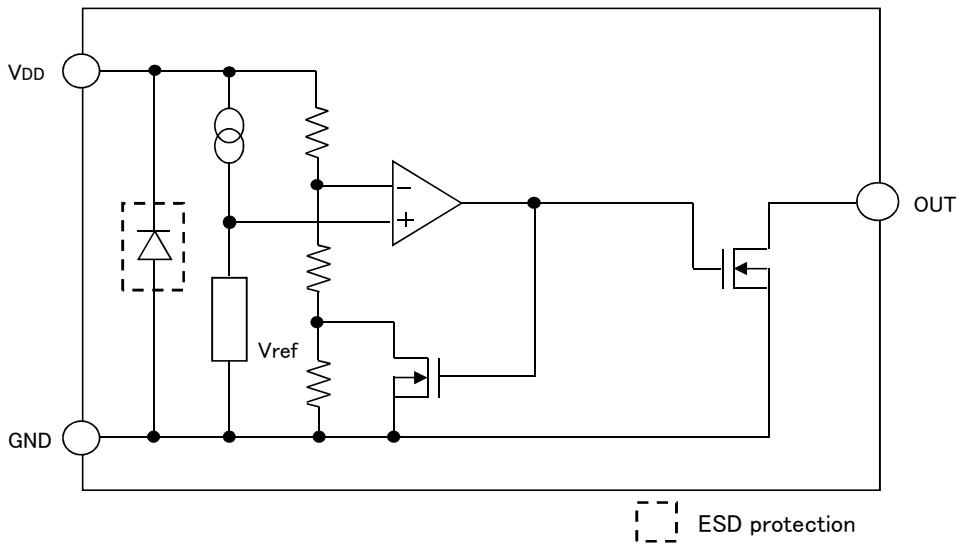


Model Name

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 Series name (A) (B) (C)

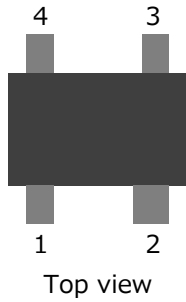
(A)	Reset detection voltage	120	Specify the detection voltage with a three-digit number. Detection voltage is 1.20V to 5.20V (0.10V steps.)
		?	
		520	
(B)	Package	U	SC-82ABB
		N	SOT-25A
(C)	Packing specifications	R	R housing (Standard)
		L	L housing

Block Diagram



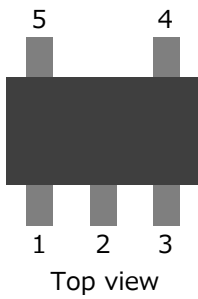
Pin Configuration

■ SC-82ABB



Pin No.	Pin name	Function
1	OUT	Output pin
2	VDD	Power supply input pin
4	NC	No connection
5	GND	Ground pin

■ SOT-25A



Pin No.	Pin name	Function
1	OUT	Output pin
2	VDD	Power supply input pin
3	GND	Ground pin
4	NC	No connection
5	NC	No connection

Absolute Maximum Ratings

Item	Symbol	Min.	Max.	Unit
Supply voltage	VDDmax	-0.3	7.0	V
Output voltage	OUT	-3.0	7.0	V
Input current	IDD	-	20	mA
Output current	IOUT	-	20	mA
Power dissipation	PD	-	150	mW
Operating temperature	Topr	-40	105	°C
Storage temperature	Tstg	-65	150	°C

Recommended Operating Conditions

Item	Symbol	Min.	Max.	Unit
Operating temperature	Topr	-40	105	°C
Supply voltage	Vop	0.95	6.5	V



Electrical Characteristics

(Ta=25°C, unless otherwise specified)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit	Test Circuit	
Reset voltage	VTH	Upper line Ta=25°C Lower line Ta=-40°C to 85°C	8612	1.1880 1.1700	1.2000 -	1.2120 1.2300	V	2
			8613	1.2870 1.2675	1.3000 -	1.3130 1.3325		
			8614	1.3860 1.3650	1.4000 -	1.4140 1.4350		
			8615	1.4850 1.4625	1.5000 -	1.5150 1.5375		
			8616	1.5840 1.5600	1.6000 -	1.6160 1.6400		
			8617	1.6830 1.6575	1.7000 -	1.7170 1.7425		
			8618	1.7820 1.7550	1.8000 -	1.8180 1.8450		
			8619	1.8810 1.8525	1.9000 -	1.9190 1.9475		
			8620	1.9800 1.9500	2.0000 -	2.0200 2.0500		
			8621	2.0790 2.0475	2.1000 -	2.1210 2.1525		
			8622	2.1780 2.1450	2.2000 -	2.2220 2.2550		
			8623	2.2770 2.2425	2.3000 -	2.3230 2.3575		
			8624	2.3760 2.3400	2.4000 -	2.4240 2.4600		
			8625	2.4750 2.4375	2.5000 -	2.5250 2.5625		
			8626	2.5740 2.5350	2.6000 -	2.6260 2.6650		
			8627	2.6730 2.6325	2.7000 -	2.7270 2.7675		
			8628	2.7720 2.7300	2.8000 -	2.8280 2.8700		
			8629	2.8710 2.8275	2.9000 -	2.9290 2.9725		
			8630	2.9700 2.9250	3.0000 -	3.0300 3.0750		
			8631	3.0690 3.0225	3.1000 -	3.1310 3.1775		
8632	3.1680 3.1200	3.2000 -	3.2320 3.2800					
8633	3.2670 3.2175	3.3000 -	3.3330 3.3825					
8634	3.3660 3.3150	3.4000 -	3.4340 3.4850					

Electrical Characteristics

(Ta=25°C, unless otherwise specified)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit	Test Circuit	
Reset voltage	VTH	Upper line Ta=25°C Lower line Ta=-40°C to 85°C	8635	3.4650 3.4125	3.5000 -	3.5350 3.5875	V	2
			8636	3.5640 3.5100	3.6000 -	3.6360 3.6900		
			8637	3.6630 3.6075	3.7000 -	3.7370 3.7925		
			8638	3.7620 3.7050	3.8000 -	3.8380 3.8950		
			8639	3.8610 3.8025	3.9000 -	3.9390 3.9975		
			8640	3.9600 3.9000	4.0000 -	4.0400 4.1000		
			8641	4.0590 3.9975	4.1000 -	4.1410 4.2025		
			8642	4.1580 4.0950	4.2000 -	4.2420 4.3050		
			8643	4.2570 4.1925	4.3000 -	4.3430 4.4075		
			8644	4.3560 4.2900	4.4000 -	4.4440 4.5100		
			8645	4.4550 4.3875	4.5000 -	4.5450 4.6125		
			8646	4.5540 4.4850	4.6000 -	4.6460 4.7150		
			8647	4.6530 4.5825	4.7000 -	4.7470 4.8175		
			8648	4.7520 4.6800	4.8000 -	4.8480 4.9200		
			8649	4.8510 4.7775	4.9000 -	4.9490 5.0225		
			8650	4.9500 4.8750	5.0000 -	5.0500 5.1250		
			8651	5.0490 4.9725	5.1000 -	5.1510 5.2275		
			8652	5.1480 5.0700	5.2000 -	5.2520 5.3300		

Electrical Characteristics

(Ta=25°C, unless otherwise specified)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit	Test Circuit	
Hysteresis voltage	ΔV_{TH}	VDD=0V→VTH+1V→0V	8612	0.150	0.250	0.400	V	2
			8613	0.180	0.300	0.480		
			8614	0.210	0.350	0.560		
			8615	0.240	0.400	0.640		
			8616	0.270	0.450	0.720		
			8617	0.300	0.500	0.800		
			8618	0.330	0.550	0.880		
			8619	0.360	0.600	0.960		
			8620	0.390	0.650	1.040		
			8621	0.420	0.700	1.120		
			8622	0.450	0.750	1.200		
			8623	0.480	0.800	1.280		
			8624	0.510	0.850	1.360		
			8625	0.540	0.900	1.440		
			8626	0.570	0.950	1.520		
			8627	0.600	1.000	1.600		
			8628	0.630	1.050	1.680		
			8629	0.660	1.100	1.760		
			8630	0.690	1.150	1.840		
			8631	0.720	1.200	1.920		
			8632	0.780	1.300	2.080		
			8633	0.780	1.300	2.080		
			8634	0.840	1.400	2.240		
			8635	0.840	1.400	2.240		
			8636	0.900	1.500	2.400		
			8637	0.900	1.500	2.400		
			8638	0.930	1.550	2.480		
			8639	0.960	1.600	2.560		
			8640	0.990	1.650	2.640		
			8641	1.020	1.700	2.720		
			8642	1.050	1.750	2.800		
			8643	1.080	1.800	2.880		
8644	1.110	1.850	2.960					
8645	1.140	1.900	3.040					
8646	1.170	1.950	3.120					
8647	1.200	2.000	3.200					
8648	1.230	2.050	3.280					
8649	1.260	2.100	3.360					
8650	1.290	2.150	3.440					
8651	1.320	2.200	3.520					
8652	1.350	2.250	3.600					

Electrical Characteristics

(Ta=25°C, unless otherwise specified)

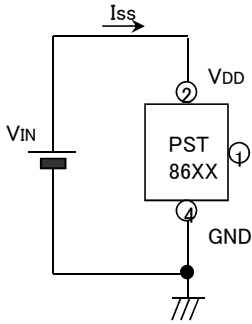
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit	Test Circuit	
Supply Current	IDD	VDD=VTH+1V	8612~8652	-	0.25	1.0	uA	1
Reset Threshold Temp. Coefficient	$\Delta V_{TH} / ^\circ C$	Ta=-40°C~+85°C	8612~8652	-	±100	-	ppm/°C	2
L transfer delay time	tPHL	VDD=VTH+0.3V→VTH-0.3V *Note2	8612~8613	-	15	100	us	4
		VDD=VTH+0.4V→VTH-0.4V *Note2	8614~8652	-	15	100	us	4
H transfer delay time	tPLH	VDD=VTH-0.3V→VTH+0.3V *Note2	8612~8613	-	15	100	us	4
		VDD=VTH-0.4V→VTH+0.4V *Note2	8614~8652	-	15	100	us	4
L Output Current	IOL1	VDD=0.95V, VDS=0.05V	8612~8652	0.01	0.10	-	mA	3
	IOL2	VDD=1.2V, VDS=0.5V VTH≥1.3V	8613~8652	0.23	2.00	-		
	IOL3	VDD=2.4V, VDS=0.5V VTH≥2.5V	8625~8652	1.60	8.00	-		
	IOL4	VDD=3.6V, VDS=0.5V VTH≥3.7V	8637~8652	3.20	12.0	-		
Output Leakage Current	I leak	VDD=6.5V, OUT=6.5V	8612~8652	-	-	0.1	uA	3

*Note1: The IC is only tested at Ta=25°C in final test. It is guaranteed by design except Ta=25°C.

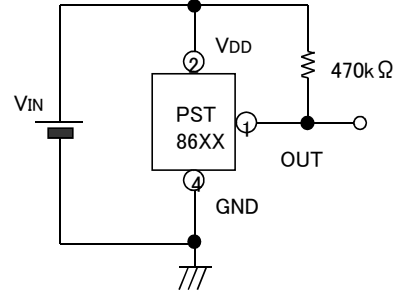
*Note2: The parameter is guaranteed by design.

Test Circuit

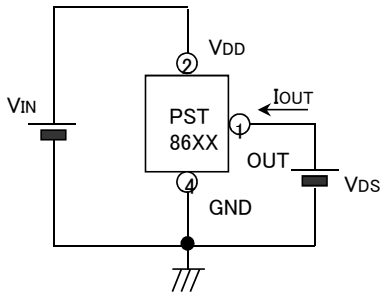
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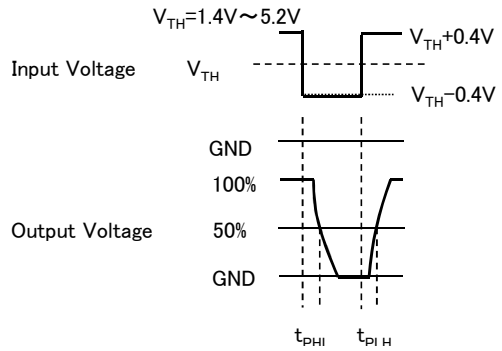
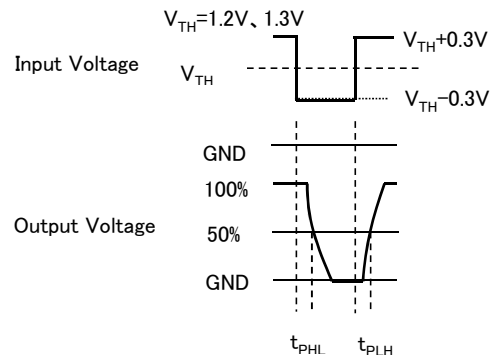
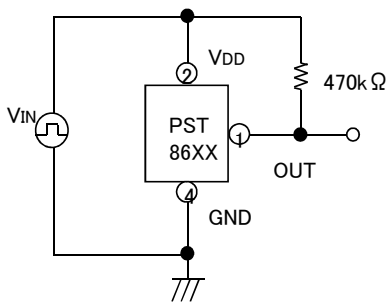
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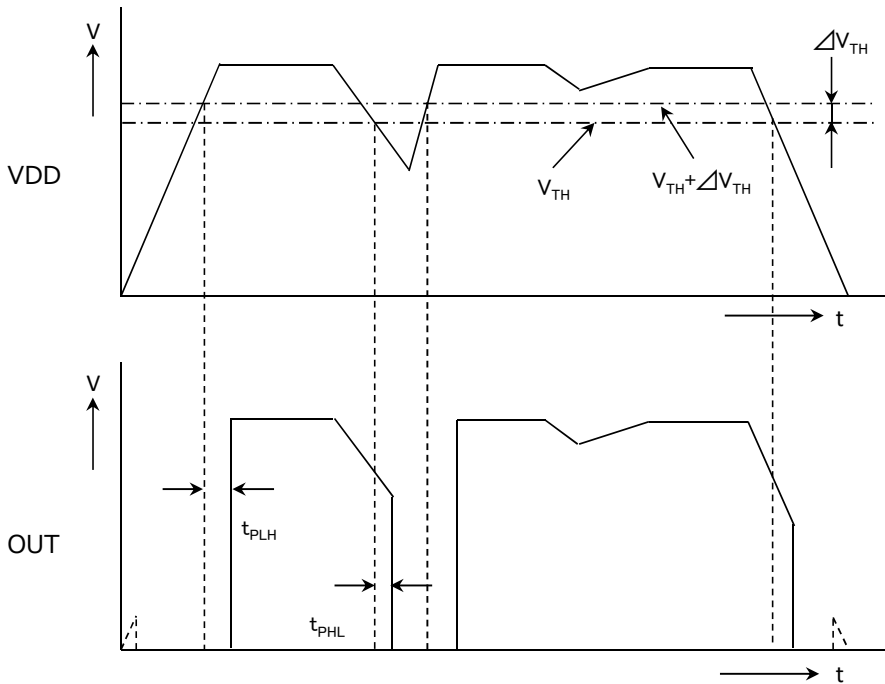
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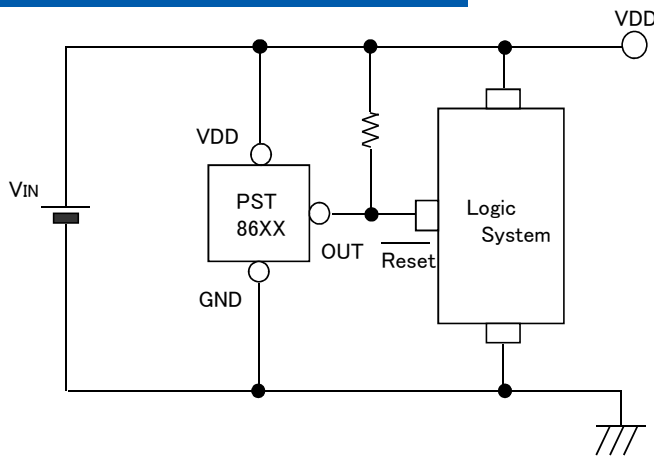
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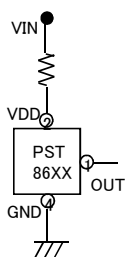
Timing Chart



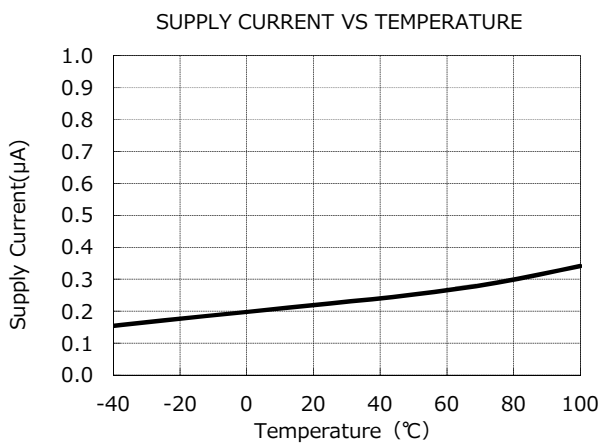
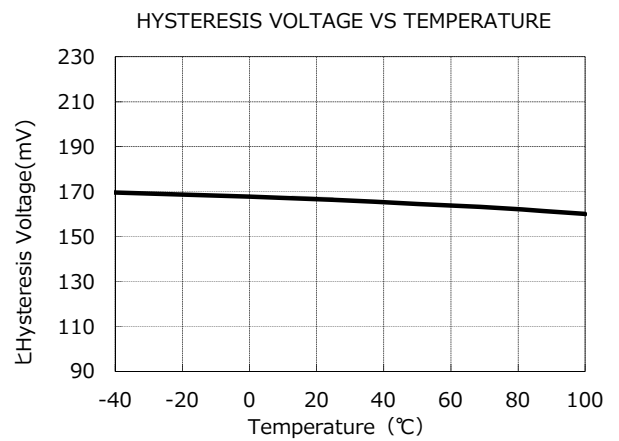
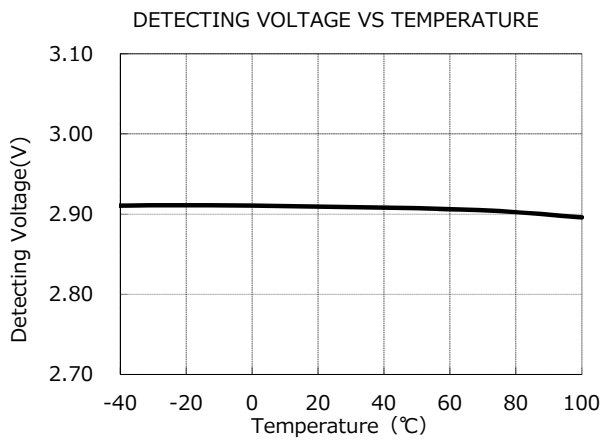
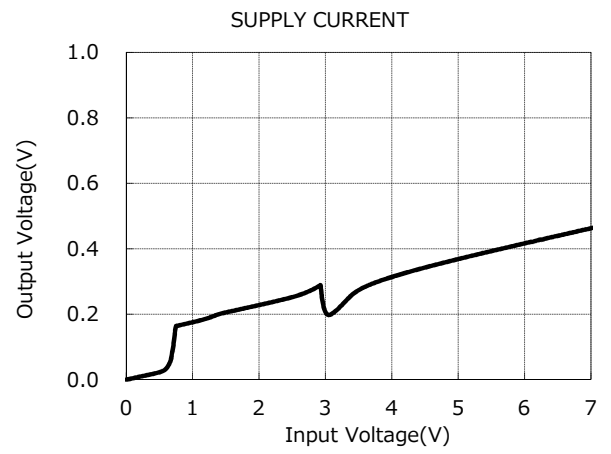
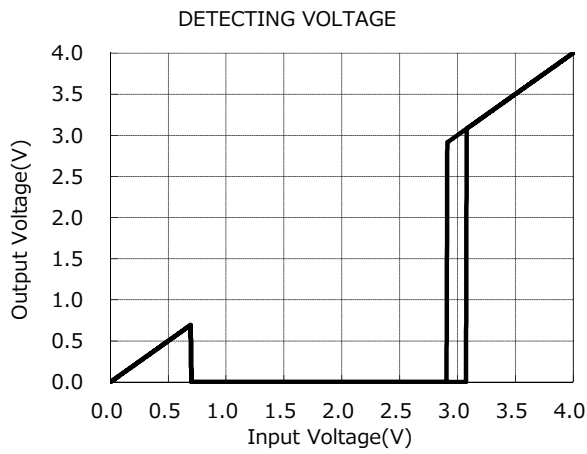
Application Circuit



- The typical application circuit is not guaranteed for a set applications. It has to test sufficiently in a set applications.
- 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 shall not be liable for any such problem, nor grant a license therefore.
- Please note that there is any possibility of circuit oscillation when resistance put in the line V_{IN} . In PST86XX, please make it less than 15k ohm.



Typical Performance Characteristics (V_{TH}=2.9V)

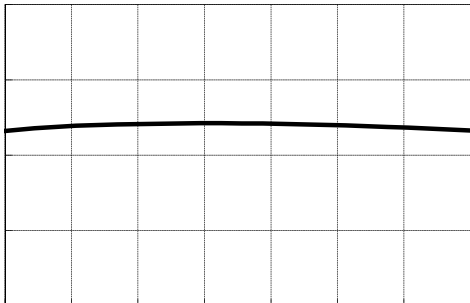


note:these are typical characteristics.



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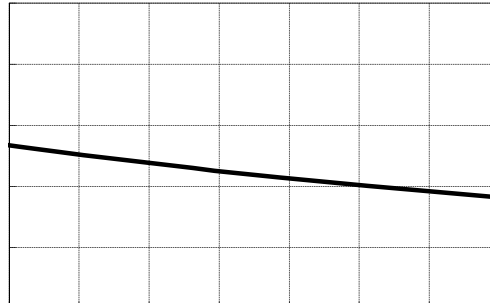
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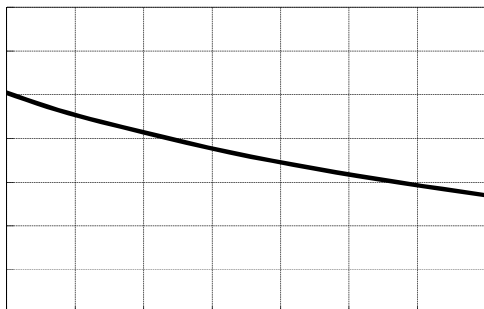
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