

# S1F77600 Series

# **Power Supply IC**

### DESCRIPTION

S1F77600 series comprises high-accuracy, low-consumption low-voltage detectors which work at a low voltage. Output is guaranteed until supply voltage reaches 0V. They are ICs used to prevent liquid leakage of a dry cell by detecting the voltage drop of power supply of two cells connected in series. The internal circuits of the ICs consist of reference voltage circuits, comparators, resistances for detecting voltage, hysteresis circuits, output-securing circuits (forced output Hi-Z) and output transistors.

Detection voltage is of non-adjustment type, fixed inside the IC at high accuracy.

Output form is selectable from P-ch open drain and N-ch open drain.

The packages are of SOT89-3pin type.

These ICs are best suited to the dry-cell liquid leakage prevention/protection circuit of a portable product which uses power supply of two dry cells connected in series.

#### LINEUP

Product name	Output form	Detection voltage	Hysteresis width
S1F77600Y0A0	N-ch open drain	1.2V	0.8V
S1F77601Y0A0	P-ch open drain	1.2V	0.8V
S1F77602Y0A0	N-ch open drain	2.4V	0.3V
S1F77603Y0A0	P-ch open drain	2.4V	0.3V

#### FEATURES

•	Current consumption	
	S1F77600/77601	: Max. 5.0µA (VDD = 3.0V, P-ch open drain)
	S1F77602/77603	: Max. 5.5µA (VDD = 3.0V, N-ch open drain)
•	Operational voltage	: 0.8V to 5.5V
•	Forced output Hi-Z	: 0.0V to 1.0V
•	Detection voltage	
	S1F77600/77601	: 1.2V to 1.6V (0.05V step: mask option)
	S1F77602/77603	: 1.7V to 2.5V (0.1V step: mask option)
•	Accuracy of detection voltage	
	S1F77600/77601	: ±3.5% (Ta=25°C)
	S1F77602/77603	: ±2.0% (Ta=25°C)
•	Detection temperature characteristics	: -320ppm/°C
•	Hysteresis width	
	S1F77600/77601	: 0.20V to 1.00V (0.05V step: mask option)
	S1F77602/77603	: 0.12V to 0.30V (0.02V step: mask option)
•	Release voltage	: Detection voltage + hysteresis width
•	Accuracy of release voltage	
	S1F77600/77601	: ±2.5% (Ta=25°C)
	S1F77602/77603	: ±2.0% (Ta=25°C)
•	Detection temperature characteristics	: -260ppm/°C
•	Operational temperature	: -30°C to +85°C
•	Output form	: P-ch open drain, N-ch open drain (mask option)
•	Shipping forms	: SOT89-3pin, SON-6pin (TBD)

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# S1F77600 Series

### TIMING CHART

#### When P-ch open drain output



Output N-ch Open Drain (OUT)

Hi-Z

Detection Voltage (-VDET)

Lower Limit of Operational

Voltage

Vss

## ■ PIN DESCRIPTION

Pin name	I/O	PIN No.	Function
OUT	0	1	Detected-voltage output pin (selectable from P-ch/N-ch open drain)
Vss	Ι	2	Input voltage pin (-)
Vdd	Ι	3	Input voltage pin (+)

## BLOCK DIAGRAM



(Note) ----- P-ch open drain output ---- N-ch open drain output (Mask option allows you to select either output form.)

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