

## VOLTAGE DETECTOR

### ■ GENERAL DESCRIPTION

The NJU7700/01 is a low quiescent current voltage detector featuring high precision detection voltage.

The detection voltage is fixed internally with an accuracy of 1.0%.

NJU7700 is Nch. Open Drain and NJU7701 of output form is a C-MOS output.

### ■ PACKAGE OUTLINE

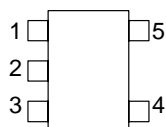


NJU7700/01F

### ■ FEATURES

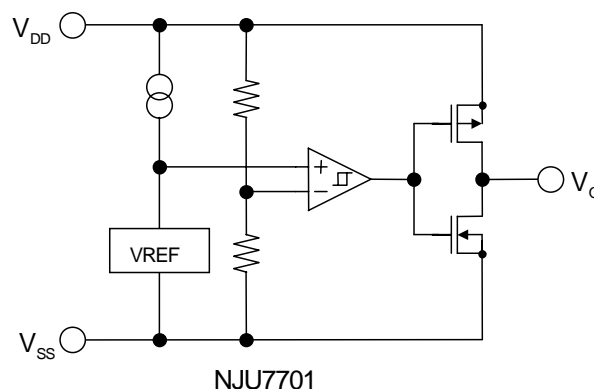
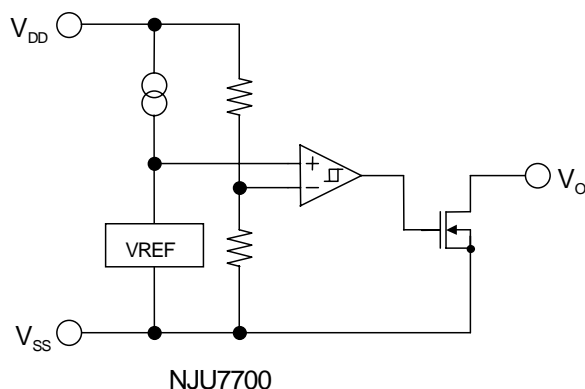
- High Precision Detection Voltage  $\pm 1.0\%$
- Low Quiescent Current 0.8 $\mu$ A typ.
- Detection Voltage Range 1.3~6.0V(0.1V Step)
- Output Circuit Form NJU7700: Nch. Open Drain type  
NJU7701: C-MOS Output
- Package Outline MTP5 (SOT-23-5)

### ■ PIN CONFIGURATION



- PIN FUNCTION
- 1.V<sub>OUT</sub>
  - 2.V<sub>DD</sub>
  - 3.V<sub>SS</sub>
  - 4.NC
  - 5.NC

### ■ EQUIVALENT CIRCUIT



### ■ DETECTION VOLTAGE RANK LIST

Device Name	V <sub>DET</sub>	Device Name	V <sub>DET</sub>
NJU7700/01F13	1.3V	NJU7700/01F28	2.8V
NJU7700/01F21	2.1V	NJU7700/01F42	4.2V
NJU7700/01F22	2.2V	NJU7700/01F43	4.3V
NJU7700/01F23	2.3V	NJU7700/01F45	4.5V
NJU7700/01F27	2.7V	NJU7700/01F06	6.0V

# NJU7700/01

## ■ NJU7700

### ■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V <sub>DD</sub>	+10	V
Output Voltage	V <sub>OUT</sub>	V <sub>SS</sub> -0.3~+10	V
Output Current	I <sub>OUT</sub>	50	mA
Power Dissipation	P <sub>D</sub>	200	mW
Operating Temperature	T <sub>opr</sub>	-40 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +125	°C

### ■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Detection Voltage	V <sub>DET</sub>		-1.0%	-	+1.0%	V	
Hysteresis Voltage	V <sub>HYS</sub>		V <sub>DET</sub> ×0.03	V <sub>DET</sub> ×0.05	V <sub>DET</sub> ×0.08	V	
Quiescent Current	I <sub>SS</sub>	V <sub>DD</sub> =V <sub>DET</sub> +1V	V <sub>DET</sub> =1.3V~1.7V Version	-	0.5	1.0	uA
			V <sub>DET</sub> =1.8V~6.0V Version	-	0.8	1.6	
Output Current	I <sub>OUT</sub>	Nch, V <sub>DS</sub> =0.5V	V <sub>DD</sub> =1.2V	0.75	2.0	-	mA
			V <sub>DD</sub> =2.4V (≥2.7V Version)	4.5	7.0	-	
Output Leak Current	I <sub>LEAK</sub>	V <sub>DD</sub> =V <sub>OUT</sub> =9V	-	-	0.1	uA	
Detection Voltage Temperature Coefficient	Δ V <sub>DET</sub> / ΔTa	Ta=0 ~ +85°C	-	±100	-	ppm/°C	
Operating Voltage (*note 1)	V <sub>DD</sub>	R <sub>L</sub> =100kΩ	0.8	-	9	V	

\*note 1 : The minimum Operating Voltage(V<sub>OPL</sub>) indicates the same value of the output voltage(V<sub>OUT</sub>) on condition that V<sub>OUT</sub> becomes 10% or less of the input voltage(V<sub>DD</sub>).

■ NJU7701

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V <sub>DD</sub>	+10	V
Output Voltage	V <sub>OUT</sub>	V <sub>SS</sub> -0.3 ~ V <sub>DD</sub> +0.3	V
Output Current	I <sub>OUT</sub>	50	mA
Power Dissipation	P <sub>D</sub>	200	mW
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +125	°C

■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Detection Voltage	V <sub>DET</sub>		-1.0%	-	+1.0%	V	
Hysteresis Voltage	V <sub>HYS</sub>		V <sub>DET</sub> ×0.03	V <sub>DET</sub> ×0.05	V <sub>DET</sub> ×0.08	V	
Quiescent Current	I <sub>SS</sub>	V <sub>DD</sub> =V <sub>DET</sub> +1V	V <sub>DET</sub> =1.3V~1.7V Version	-	0.5	1.0	uA
			V <sub>DET</sub> =1.8V~6.0V Version	-	0.8	1.6	
Output Current	I <sub>OUT</sub>	Nch, V <sub>DS</sub> =0.5V	V <sub>DD</sub> =1.2V	0.75	2.0	-	mA
			V <sub>DD</sub> =2.4V (≥2.7V Version)	4.5	7.0	-	
		Pch, V <sub>DS</sub> =0.5V	V <sub>DD</sub> =4.8V (≤3.9V Version)	2.0	3.5	-	
			V <sub>DD</sub> =6.0V (4.0V~5.6V Version)	2.5	4.0	-	
		V <sub>DD</sub> =8.4V (≥5.7V Version)	3.0	5.0	-		
Detection Voltage Temperature Coefficient	Δ V <sub>DET</sub> / ΔTa	Ta=0 ~ +85°C	-	±100	-	ppm/°C	
Operating Voltage (*note 1)	V <sub>DD</sub>	R <sub>L</sub> =100kΩ	0.8	-	9	V	

\*note 1 : The minimum Operating Voltage(V<sub>OPL</sub>) indicates the same value of the output voltage(V<sub>OUT</sub>) on condition that V<sub>OUT</sub> becomes 10% or less of the input voltage(V<sub>DD</sub>).

[CAUTION]

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