

## Low Dropout Voltage Regulator

### ■ GENERAL DESCRIPTION

The NJU7250 series is low dropout voltage and high precision positive voltage regulator with ON/OFF control.

This IC is suitable for the battery items because of low operating current and 150mA output current.

Furthermore, this series is packaged with MTP5

### ■ PACKAGE OUTLINE



NJU7250F

### ■ FEATURES

- Low Operating Current                      35 $\mu$ A typ.
- Output Current                                150mA
- High Precision Output Voltage             $V_o \pm 2\%$
- Low Dropout Voltage                        0.2V typ. @ $I_o=100$ mA,  $2.8V \leq V_o \leq 3.3V$
- Standby Function
- Short Current Protection Circuit
- C-MOS Technology
- Package Outline                                MTP5

### ■ OUTPUT VOLTAGE LINE-UP

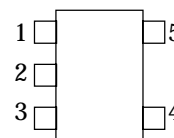
Device Name	$V_{OUT}$
NJU7250F25	2.5V
NJU7250F27	2.7V
NJU7250F28	2.8V
NJU7250F29	2.9V

Device Name	$V_{OUT}$
NJU7250F30	3.0V
NJU7250F32	3.2V
NJU7250F33	3.3V

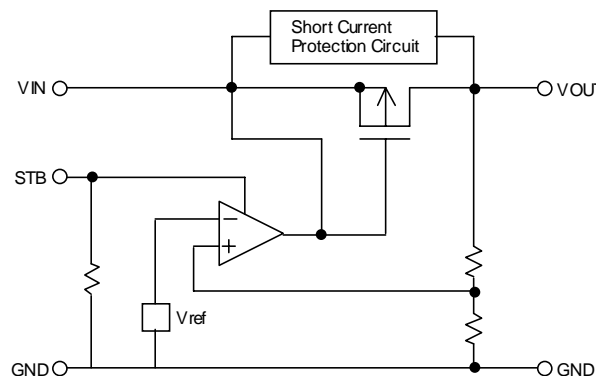
### ■ TERMINAL DESCRIPTION

No.	Symbol	Function
1	$V_{IN}$	Input
2	GND	GND
3	STB	H: Regulation L: Standby, Output off
4	NC	Non Connection
5	$V_{OUT}$	Output

### ■ PIN CONFIGURATION



### ■ EQUIVALENT CIRCUIT



**■ ABSOLUTE MAXIMUM RATINGS**

(Ta=25°C)

Parameter	Symbol	Ratings	Unit
Input Voltage	V <sub>IN</sub>	9	V
Control Voltage	V <sub>CONT</sub>	GND-0.3 ~ V <sub>IN</sub> +0.3	V
Output Voltage	V <sub>OUT</sub>	GND-0.3 ~ V <sub>IN</sub> +0.3	V
Output Current	I <sub>OUT</sub>	200	mA
Power Dissipation	P <sub>D</sub>	250	mW
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +150	°C

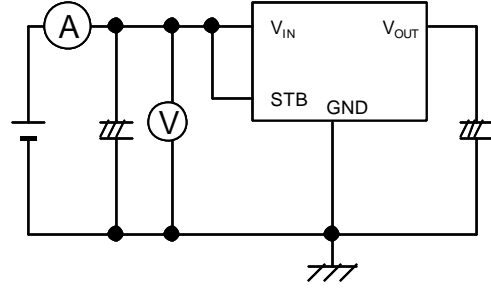
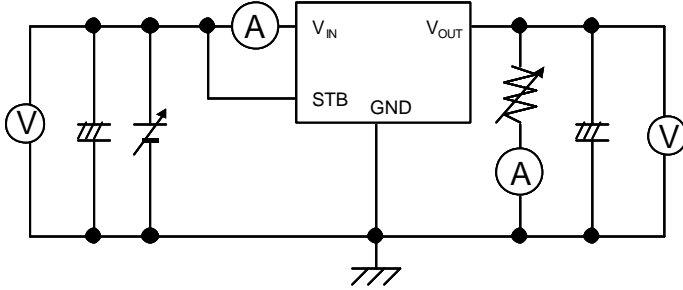
**■ ELECTRICAL CHARACTERISTICS**

 (C<sub>IN</sub>=0.1μF, C<sub>O</sub>=2.2μF, Ta=25°C)

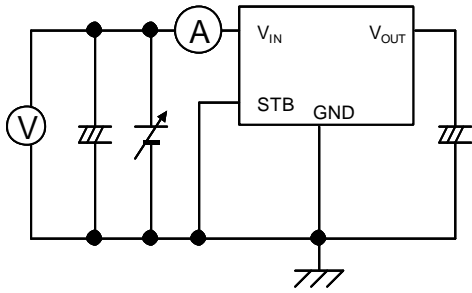
Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Output Voltage	V <sub>O</sub>	V <sub>IN</sub> =V <sub>O</sub> +1V, 1mA≤I <sub>O</sub> ≤30mA	-2%		+2%	V
Output Current	I <sub>O</sub>	1.5≤V <sub>O</sub> ≤1.7, V <sub>IN</sub> =V <sub>O</sub> +1V	100			mA
		1.8≤V <sub>O</sub> ≤5.0, V <sub>IN</sub> =V <sub>O</sub> +1V	150			
Dropout Voltage	ΔV <sub>IO</sub>	V <sub>O</sub> =1.5V, I <sub>O</sub> =100mA	0.5			V
		V <sub>O</sub> =1.6V, I <sub>O</sub> =100mA	0.4			
		V <sub>O</sub> =1.7V, I <sub>O</sub> =100mA	0.3			
		1.8≤V <sub>O</sub> ≤1.9, I <sub>O</sub> =100mA		0.60	1.40	
		2.0≤V <sub>O</sub> ≤2.4, I <sub>O</sub> =100mA		0.35	0.70	
		2.5≤V <sub>O</sub> ≤2.7, I <sub>O</sub> =100mA		0.24	0.35	
		2.8≤V <sub>O</sub> ≤3.3, I <sub>O</sub> =100mA		0.20	0.30	
		3.4≤V <sub>O</sub> ≤5.0, I <sub>O</sub> =100mA		0.17	0.26	
Operating Current	I <sub>Q</sub>	V <sub>IN</sub> =V <sub>O</sub> +1V, V <sub>CONT(ON)</sub> =V <sub>IN</sub>		35	70	μA
Standby Current	I <sub>Q(OFF)</sub>	V <sub>IN</sub> =V <sub>O</sub> +1V, V <sub>CONT(OFF)</sub> =GND		0.1	1.0	μA
Load Regulation	ΔV <sub>O</sub> /ΔI <sub>O</sub>	V <sub>IN</sub> =V <sub>O</sub> +1V, 1mA≤I <sub>O</sub> ≤80mA		12	40	mV
Line Regulation	ΔV <sub>O</sub> /ΔV <sub>IN</sub> ·V <sub>OUT</sub>	V <sub>IN</sub> =V <sub>O</sub> +0.5V~8V, I <sub>O</sub> =30mA		0.05	0.2	%/V
Output Voltage Temperature Coefficient	ΔV <sub>O</sub> /ΔT	-40≤Ta≤+85°C, I <sub>O</sub> =10mA		±100		ppm/°C
Input Voltage	V <sub>IN</sub>				8	V
Short Current Limit	I <sub>LIM</sub>	V <sub>O</sub> =0V		50		mA
Pull-down Resistance	RPD		2.5	5	10	MΩ
H Level Control Voltage	V <sub>CONT(ON)</sub>		1.5		V <sub>IN</sub>	V
L Level Control Voltage	V <sub>CONT(OFF)</sub>		0		0.25	V
Output Noise Voltage	V <sub>NO</sub>	f=10Hz~100kHz		30		μV/rms

v TEST CIRCUIT

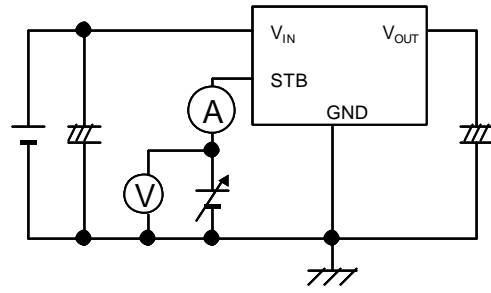
1. Output Voltage, Output Current, Dropout Voltage, Operating Current, Line Regulation, Line Regulation, Output Voltage Temperature Coefficient, Short Current Limit
2. Input Voltage



3. Standby Current



4. H Level Control Voltage, L Level Control Voltage, Pull-down Resistance



[CAUTION]  
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