

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 μ 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

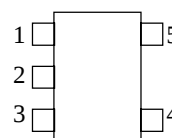
Device Name	V_{OUT}
NJU7250F25	2.5V
NJU7250F27	2.7V
NJU7250F28	2.8V
NJU7250F29	2.9V

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

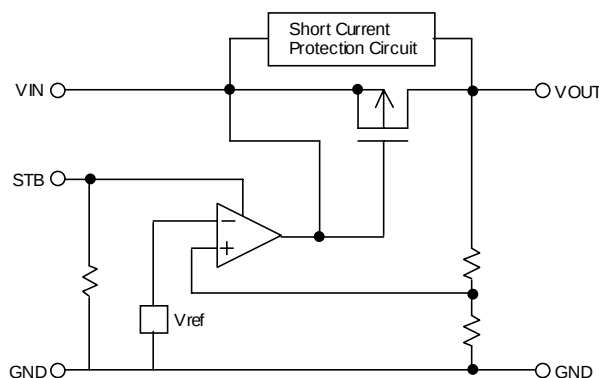
■ TERMINAL DESCRIPTION

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_{IN}	9	V
Control Voltage	V_{CONT}	GND-0.3 ~ $V_{IN}+0.3$	V
Output Voltage	V_{OUT}	GND-0.3 ~ $V_{IN}+0.3$	V
Output Current	I_{OUT}	200	mA
Power Dissipation	P_D	250	mW
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +150	°C

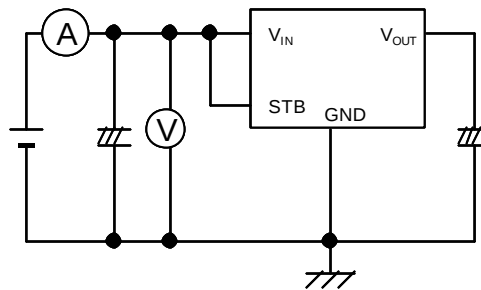
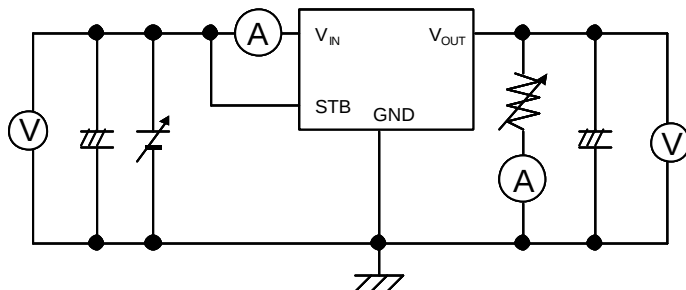
■ ELECTRICAL CHARACTERISTICS

(C_{IN}=0.1μF, C_O=2.2μF, Ta=25°C)

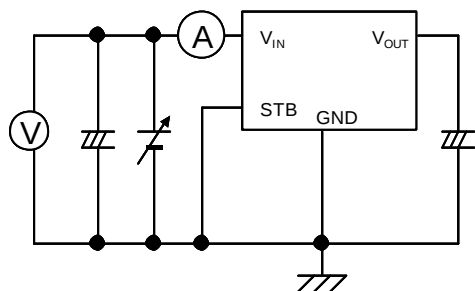
Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Output Voltage	V_O	$V_{IN}=V_O+1V$, $1mA \leq I_O \leq 30mA$	-2%		+2%	V
Output Current	I_O	$1.5 \leq V_O \leq 1.7$, $V_{IN}=V_O+1V$	100			mA
		$1.8 \leq V_O \leq 5.0$, $V_{IN}=V_O+1V$	150			
Dropout Voltage	ΔV_{IO}	$V_O=1.5V$, $I_O=100mA$	0.5			V
		$V_O=1.6V$, $I_O=100mA$	0.4			
		$V_O=1.7V$, $I_O=100mA$	0.3			
		$1.8 \leq V_O \leq 1.9$, $I_O=100mA$		0.60	1.40	
		$2.0 \leq V_O \leq 2.4$, $I_O=100mA$		0.35	0.70	
		$2.5 \leq V_O \leq 2.7$, $I_O=100mA$		0.24	0.35	
		$2.8 \leq V_O \leq 3.3$, $I_O=100mA$		0.20	0.30	
		$3.4 \leq V_O \leq 5.0$, $I_O=100mA$		0.17	0.26	
Operating Current	I_Q	$V_{IN}=V_O+1V$, $V_{CONT(ON)}=V_{IN}$		35	70	μA
Standby Current	$I_{Q(OFF)}$	$V_{IN}=V_O+1V$, $V_{CONT(OFF)}=GND$		0.1	1.0	μA
Load Regulation	$\Delta V_O / \Delta I_O$	$V_{IN}=V_O+1V$, $1mA \leq I_O \leq 80mA$		12	40	mV
Line Regulation	$\Delta V_O / \Delta V_{IN} \cdot V_{OUT}$	$V_{IN}=V_O+0.5V \sim 8V$, $I_O=30mA$		0.05	0.2	%/V
Output Voltage Temperature Coefficient	$\Delta V_O / \Delta T$	$-40 \leq T_a \leq +85^\circ C$, $I_O=10mA$		±100		ppm/°C
Input Voltage	V_{IN}				8	V
Short Current Limit	I_{LIM}	$V_O=0V$		50		mA
Pull-down Resistance	RPD		2.5	5	10	MΩ
H Level Control Voltage	$V_{CONT(ON)}$		1.5		V_{IN}	V
L Level Control Voltage	$V_{CONT(OFF)}$		0		0.25	V
Output Noise Voltage	V_{NO}	$f=10Hz \sim 100kHz$		30		μV/rms

v TEST CIRCUIT

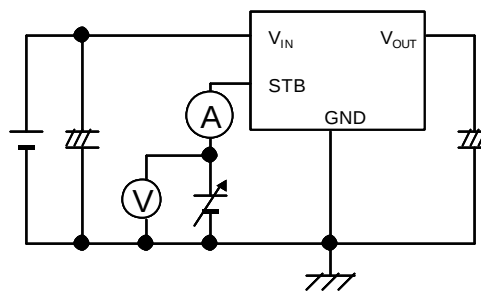
1. Output Voltage, Output Current, Dropout Voltage, Operating Current, Line Regulation, Line Regulation, Output Voltage Temperature Coefficient, Short Current Limit
2. Input Voltage



3. Standby Current



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



[CAUTION]

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