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	35μA typ.
• Output Current	150mA
• High Precision Output Voltage	Vo±2%
• Low Dropout Voltage	0.2V typ. @Io=100mA, 2.8V≤Vo≤3.3V
• Standby Function	
• Short Current Protection Circuit	
• C-MOS Technology	
• Package Outline	MTP5

■ OUTPUT VOLTAGE LINE-UP

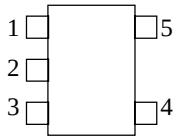
Device Name	V_{OUT}
NJU7250F25	2.5V
NJU7250F27	2.7V
NJU7250F28	2.8V
NJU7250F29	2.9V

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

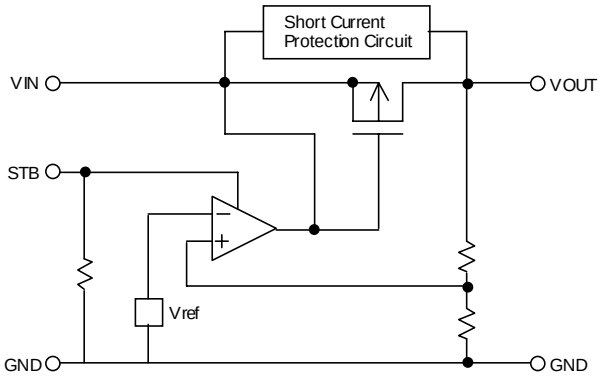
■ TERMINAL DESCRIPTION

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

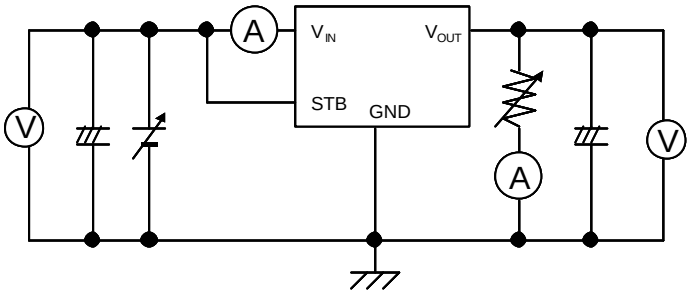
■ ELECTRICAL CHARACTERISTICS

(C_{IN}=0.1µF, C_O=2.2µF, Ta=25°C)

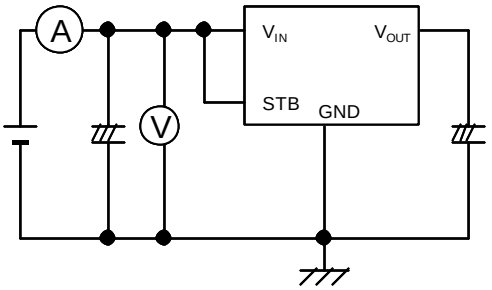
Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Output Voltage	V_O	V_{IN}=V_O+1V, 1mA≤I_O≤30mA	-2%		+2%	V
Output Current	I_O	1.5≤V_O≤1.7, V_{IN}=V_O+1V	100			mA
		1.8≤V_O≤5.0, V_{IN}=V_O+1V	150			
Dropout Voltage	ΔV_{IO}	V_O=1.5V, I_O=100mA	0.5			V
		V_O=1.6V, I_O=100mA	0.4			
		V_O=1.7V, I_O=100mA	0.3			
		1.8≤V_O≤1.9, I_O=100mA		0.60	1.40	
		2.0≤V_O≤2.4, I_O=100mA		0.35	0.70	
		2.5≤V_O≤2.7, I_O=100mA		0.24	0.35	
		2.8≤V_O≤3.3, I_O=100mA		0.20	0.30	
		3.4≤V_O≤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≤I_O≤80mA		12	40	mV
Line Regulation	$\Delta V_O/\Delta V_{IN}\cdot V_{OUT}$	V_{IN}=V_O+0.5V~8V, I_O=30mA		0.05	0.2	%/V
Output Voltage Temperature Coefficient	$\Delta V_O/\Delta T$	-40≤Ta≤+85°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~100kHz		30		µV/rms

ν TEST CIRCUIT

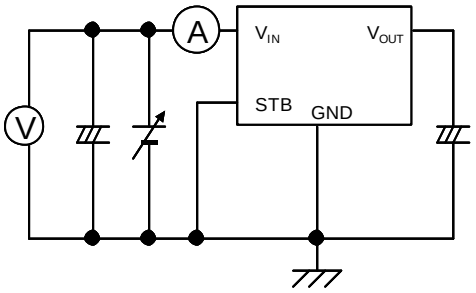
1. Output Voltage, Output Current, Dropout Voltage, Operating Current, Line Regulation, Line Regulation, Output Voltage Temperature Coefficient, Short Current Limit



2. Input Voltage



3. Standby Current



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