

## Low Dropout Voltage Regulator

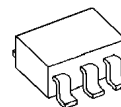
### ■ GENERAL DESCRIPTION

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

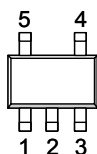


NJU7250F

### ■ FEATURES

- Low Operating Current                      35 $\mu$ A
- Output Current                                150mA
- High Precision Output                       $V_o \pm 2\%$
- Low Dropout Voltage                      0.2V typ. @ $I_o=100\text{mA}$ ,  $2.8 \leq V_o \leq 3.3\text{V}$
- Standby Function                            Active High
- Short Current Protection
- C-MOS Technology
- Package Outline                              SOT-23-5

### ■ PIN CONFIGURATION

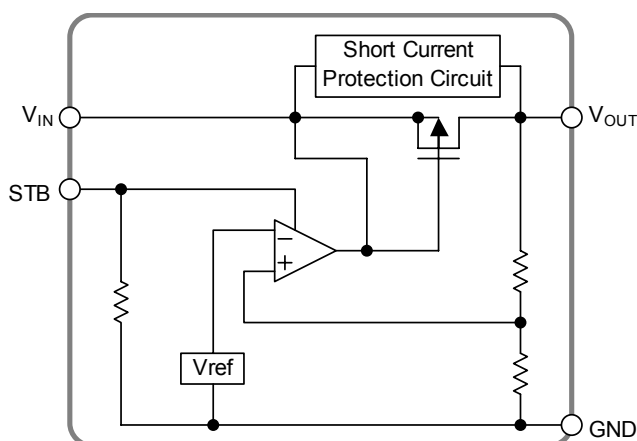


NJU7250F

#### Pin Function

1.  $V_{IN}$
2. GND
3. STB(Active High)
4. NC
5.  $V_{OUT}$

### ■ EQUIVALENT CIRCUIT



# NJU7250

## ■ OUTPUT VOLTAGE RANK LIST

| Device Name | Output Voltage |
|-------------|----------------|
| NJU7250F25  | 2.5V           |
| NJU7250F27  | 2.7V           |
| NJU7250F28  | 2.8V           |
| NJU7250F29  | 2.9V           |
| NJU7250F30  | 3.0V           |
| NJU7250F32  | 3.2V           |
| NJU7250F33  | 3.3V           |

## ■ 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        | $V_O$      | GND-0.3~ $V_{IN}+0.3$ | V    |
| Output Current        | $I_O$      | 200                   | mA   |
| Power Dissipation     | $P_D$      | 250(*1)               | mW   |
|                       |            | 500(*2)               |      |
| Operating Temperature | $T_{opr}$  | - 40~+85              | °C   |
| Storage Temperature   | $T_{stg}$  | - 40~+150             | °C   |

(\*1): Device itself.

(\*2): Mounted on glass epoxy board based on EIA/JEDEC. (114.3x76.2x1.6mm: 2Layers)

## ■ ELECTRICAL CHARACTERISTICS ( $C_{IN}=0.1\mu F$ , $C_O=2.2\mu F$ , $T_a=25^\circ C$ )

| Parameter                              | Symbol                                   | Condition                                      | MIN.  | TYP.      | MAX.     | Unit        |
|----------------------------------------|------------------------------------------|------------------------------------------------|-------|-----------|----------|-------------|
| Output Voltage                         | $V_O$                                    | $V_{IN} = V_O + 1V$ , $1mA \leq I_O \leq 30mA$ | -2.0% | -         | +2.0%    | 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                        | $\Delta V_{IO}$                          | $2.5 \leq V_O \leq 2.7$ , $I_O = 100mA$        | -     | 0.24      | 0.35     |             |
|                                        |                                          | $2.8 \leq V_O \leq 3.3$ , $I_O = 100mA$        | -     | 0.20      | 0.30     |             |
| Operating Current                      | $I_Q$                                    | $V_{IN} = V_O + 1V$ , $V_{CONT(ON)} = V_{IN}$  | -     | 35        | 70       | $\mu A$     |
| Standby Current                        | $I_{Q(OFF)}$                             | $V_{IN} = V_O + 1V$ , $V_{CONT(OFF)} = GND$    | -     | 0.1       | 1.0      | $\mu A$     |
| Load Regulation                        | $\Delta V_O / \Delta I_O$                | $V_{IN} = V_O + 1V$ , $1mA \leq I_O \leq 80mA$ | -     | 12        | 40       | mV          |
| Line Regulation                        | $\Delta V_O / (\Delta V_{IN} \cdot V_O)$ | $V_{IN} = V_O + 0.5V \sim 8V$ , $I_O = 30mA$   | -     | 0.05      | 0.20     | %/V         |
| Output Voltage Temperature Coefficient | $\Delta V_O / \Delta T$                  | $-40 \leq T_a \leq +85^\circ C$ , $I_O = 10mA$ | -     | $\pm 100$ | -        | 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       | M $\Omega$  |
| 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                   | $V_{NO}$                                 | $f=10Hz$                                       | -     | 30        | -        | $\mu V/rms$ |

**[CAUTION]**

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