



## General Description

SSP6206-xxNR series are a highly precise, 3 terminal, positive voltage regulators manufactured using CMOS and laser trimming technologies. The series provides large currents with a significantly small dropout voltage.

The SSP6206-xxNR consists of a current limiter circuit, a driver transistor, a precision reference voltage and an error correction circuit. The series is compatible with low ESR ceramic capacitors. The current limiter's foldback circuit operates as a short circuit protection as well as the output current limiter for the output pin. Output voltages are internally set by laser trimming technologies. It is selectable in 0.1V increments within a range of 1.2V to 3.6V.

SSP6206-18NR series are available in SOT-23 package.

## Features

- Low Power Consumption
- Low Voltage Drop
- Low temperature coefficient
- Low Quiescent Current: 5uA at 6V
- Output Voltage Accuracy: tolerance  $\pm 2\%$

## Application

- Battery-powered Equipments
- Reference voltage sources
- Cameras, video cameras
- Portable AV systems
- Mobile phone
- Portable games

## Pin Configuration And Descriptions

SOT-23(TopView)

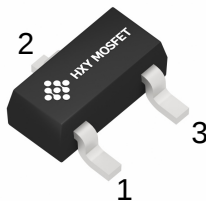


Table1: SSP6206-xxNR series (SOT-23 PKG)

| PIN NO. | PIN NAME | FUNCTION           |
|---------|----------|--------------------|
| 1       | GND      | GND pin            |
| 2       | VIN      | Input voltage pin  |
| 3       | VOUT     | Output voltage pin |

## Order Information

| Orderable Device | Package | Output Voltage | Packing Option |
|------------------|---------|----------------|----------------|
| SSP6206-xxNR     | SOT-23  | 1.2V-3.6V      | 3000/Reel      |

xx: From 12-36

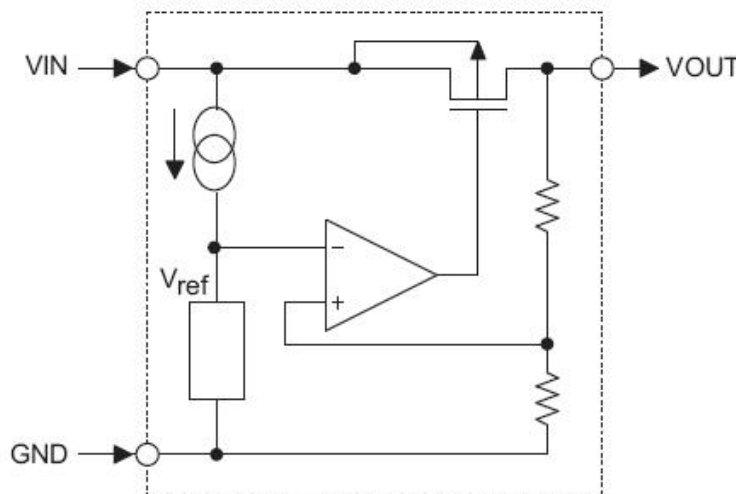


## Absolute Maximum Ratings

| Description                          | Symbol    | Value Range                      | Unit |
|--------------------------------------|-----------|----------------------------------|------|
| Input Voltage                        | $V_{IN}$  | 8                                | V    |
| Storage Temperature Range            | $T_{STG}$ | -55~+125                         | °C   |
| Operating Free-air Temperature Range | $T_A$     | -40~+85                          | °C   |
| Power Dissipation                    | $P_d$     | 0.2                              | W    |
| Output Current                       | $I_{OUT}$ | 300                              | mA   |
| Output Voltage                       | $V_{OUT}$ | $V_{SS} - 0.3 \sim V_{IN} + 0.3$ | V    |

Note: Stresses greater than those listed under “Absolute Maximum Ratings” cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under “Recommended Operating Conditions” is not implied. Exposure to “Absolute Maximum Ratings” for extended periods may affect device reliability.

## Block Diagram





## DC Characteristics (unless otherwise noted $T_A = 25^{\circ}\text{C}$ )

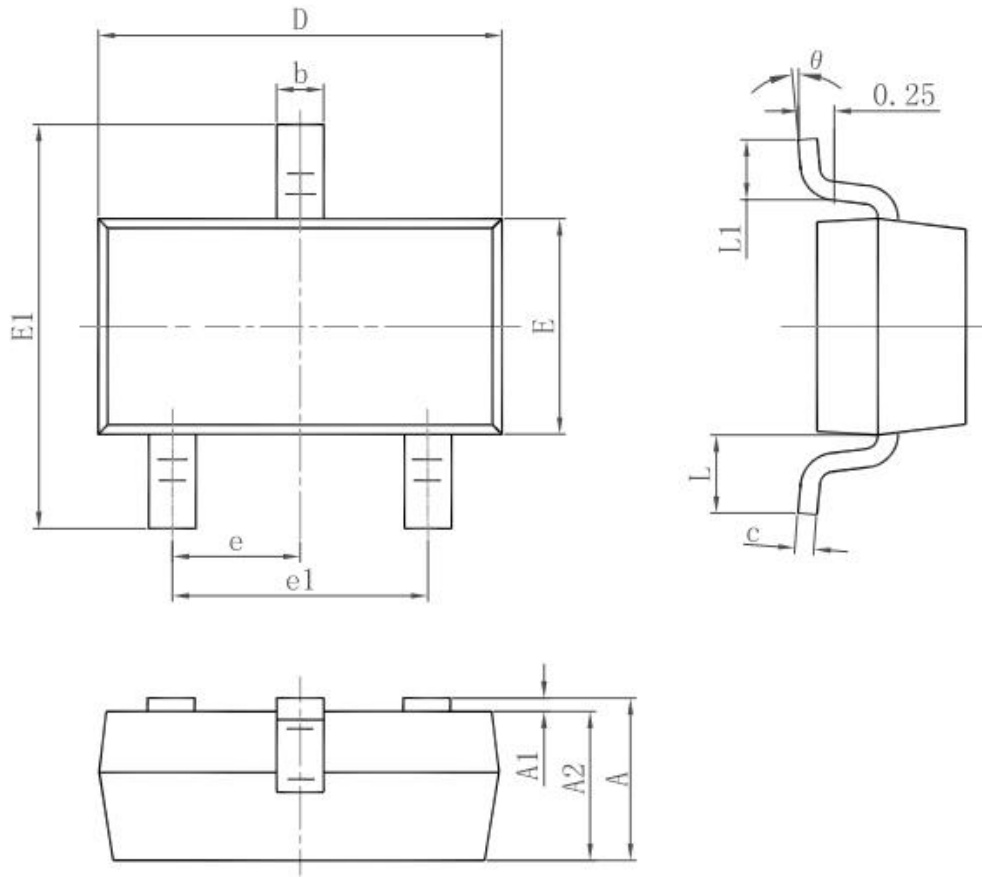
| Parameter                                    | Symbol                                 | Conditions                                                                      | Min.                  | Typ.      | Max.                  | Unit                    |
|----------------------------------------------|----------------------------------------|---------------------------------------------------------------------------------|-----------------------|-----------|-----------------------|-------------------------|
| Output Voltage                               | $V_{out}$                              | $V_{in} = V_{out} + 1V$<br>$1.0\text{mA} \leq I_{out} \leq 30\text{mA}$         | $V_{out} \times 0.98$ | --        | $V_{out} \times 1.02$ | V                       |
| Output Current*1                             | $I_{out}$                              | $V_{in} - V_{out} = 1V$                                                         | --                    | 300       | --                    | mA                      |
| Low dropout*2                                | $V_{drop}$                             | Refer to the next table                                                         |                       |           |                       |                         |
| Line Regulation                              | $\Delta V_{out1} / (V_{in} - V_{out})$ | $1.6V \leq V_{in} \leq 8V$<br>$I_{out} = 40\text{mA}$                           | --                    | 0.05      | 0.2                   | %/V                     |
| Load Regulation                              | $\Delta V_{out} / \Delta I_{out}$      | $V_{in} = V_{out} + 1V$<br>$1.0\text{mA} \leq I_{out} \leq 80\text{mA}$         | --                    | 12        | 30                    | mV                      |
| Output voltage<br>Temperature<br>coefficient | $\Delta V_{out} / (T_A - V_{out})$     | $I_{out} = 30\text{mA}$<br>$0^{\circ}\text{C} \leq T_A \leq 70^{\circ}\text{C}$ | --                    | $\pm 100$ | --                    | Ppm/ $^{\circ}\text{C}$ |
| Supply Current                               | $I_{ss}$                               | $V_{in} = 6V$                                                                   | --                    | 5         | 10                    | $\mu\text{A}$           |
| Input Voltage                                | $V_{in}$                               | --                                                                              | --                    | 6         | 8                     | V                       |
| PSRR                                         | PSRR                                   | $F = 1\text{KHz}$<br>$V_{in} = V_{out} + 1V$                                    | --                    | 50        | --                    | dB                      |

## Electrical Characteristics by Output Voltage:

| Output Voltage $V_{out}(\text{V})$ | Dropout Voltage $V_{dif}$ (V) |      |      |
|------------------------------------|-------------------------------|------|------|
|                                    | Conditions                    | Typ. | Max. |
| $V_{out} \leq 1.5V$                | $I_{out} = 100\text{mA}$      | 0.50 | 0.68 |
| $1.8 \leq V_{out} \leq 2$          |                               | 0.39 | 0.53 |
| $2.8 \leq V_{out} \leq 5.0$        |                               | 0.23 | 0.39 |



## Package Outline Dimensions SOT-23



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min.                      | Max.  | Min.                 | Max.  |
| A      | 0.900                     | 1.150 | 0.035                | 0.045 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.050 | 0.035                | 0.041 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 2.800                     | 3.000 | 0.110                | 0.118 |
| E      | 1.200                     | 1.400 | 0.047                | 0.055 |
| E1     | 2.250                     | 2.550 | 0.089                | 0.100 |
| e      | 0.950 TYP.                |       | 0.037 TYP.           |       |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.550 REF.                |       | 0.022 REF.           |       |
| L1     | 0.300                     | 0.500 | 0.012                | 0.020 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |



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