

### Features

- Low power consumption
- Low voltage drop
- Low temperature coefficient
- Low Quiescent Current: 3.5uA at 6V
- Output voltage accuracy: tolerance  $\pm 2\%$

### Applications

- Battery-powered equipment
- Reference voltage sources
- Cameras, video cameras
- Portable AV systems
- Mobile phones
- Portable games

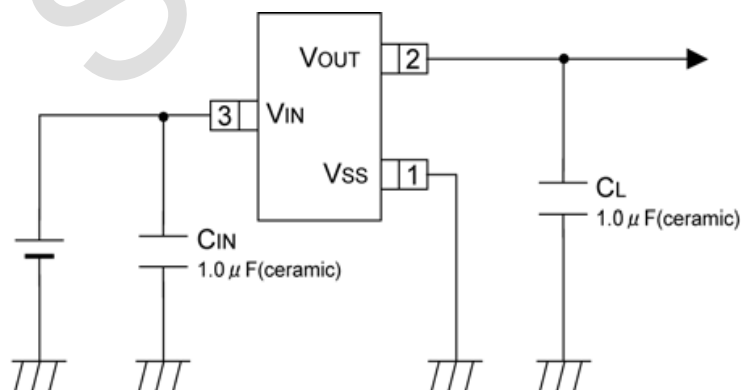
### General Description

SSP6206 series are a highly precise, lower consumption, 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 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 by laser trimming technologies. It is selectable in 0.1V increments within a range of 1.2V to 5.0V. SSP6206 series are available in SOT-23, SOT23-3 and SOT89 packages.

### Typical Application



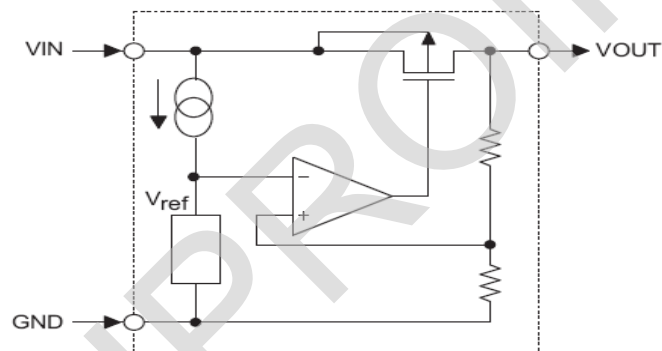
### Order Information

SSP6206-①②③④

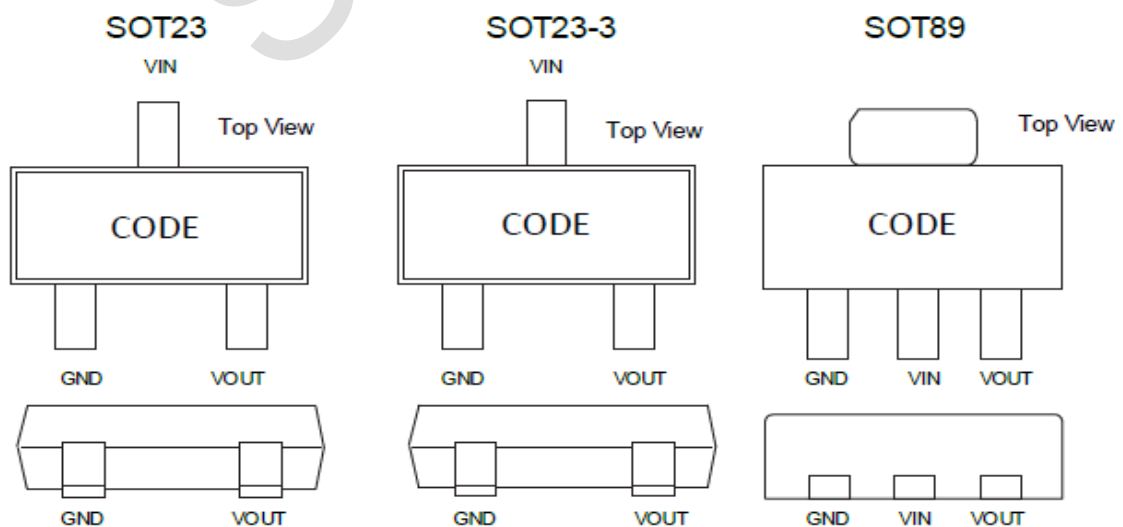
| Designator | Symbol  | Description               |
|------------|---------|---------------------------|
| ① ②        | Integer | Output Voltage(1.2V~5.0V) |
| ③          | N       | Package:SOT23             |
|            | M       | Package:SOT23-3           |
|            | P       | Package:SOT89             |
| ④          | R       | RoHS / Pb Free            |
|            | G       | Halogen Free              |

Note: "①②" stands for output voltages. Other voltages can be specially customized.

### Block Diagram



### Pin Assignment



### Marking Rule

| Product name | Product code |     |     |     |
|--------------|--------------|-----|-----|-----|
|              | (1)          | (2) | (3) | (4) |
| SSP6206-12YR | 6            | 5   | B   | X   |
| SSP6206-15YR | 6            | 5   | E   | X   |
| SSP6206-18YR | 6            | 5   | K   | X   |
| SSP6206-25YR | 6            | 5   | T   | X   |
| SSP6206-28YR | 6            | 5   | X   | X   |
| SSP6206-30YR | 6            | 5   | Z   | X   |
| SSP6206-33YR | 6            | 6   | 2   | X   |
| SSP6206-36YR | 6            | 6   | 5   | X   |
| SSP6206-50YR | 6            | 6   | M   | X   |

Note: Y: Representative product packaging ,

### Absolute Maximum Ratings

| Parameter                   |         | Symbol    | Ratings                     | Units |
|-----------------------------|---------|-----------|-----------------------------|-------|
| Input Voltage               |         | $V_{IN}$  | 8                           | V     |
| Output Current              |         | $I_{OUT}$ | 300*                        | mA    |
| Output Voltage              |         | $V_{OUT}$ | $V_{SS}-0.3\sim V_{IN}+0.3$ | V     |
| Power Dissipation           | SOT-23  | $P_d$     | 0.20                        | W     |
|                             | SOT23-3 |           | 0.25                        | W     |
|                             | SOT89   |           | 0.50                        | W     |
| Operating Temperature Range |         | $T_{opr}$ | -40~+85                     | °C    |
| Storage Temperature Range   |         | $T_{stg}$ | -55~+125                    | °C    |

\* $I_{OUT}=P_d/(V_{IN}-V_{OUT})$

### Electrical Characteristics

SSP6206 for any output voltage

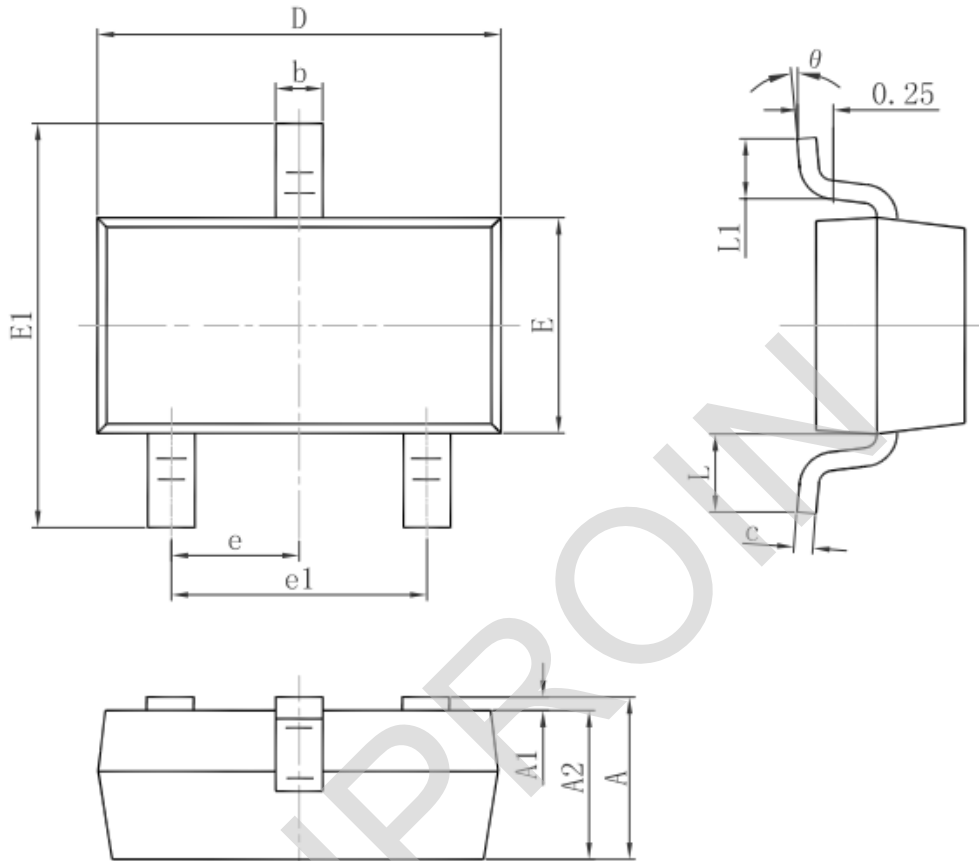
( $T_a=25^{\circ}\text{C}$ )

| Parameter                               | Symbol                            | Conditions  | Min.                 | Typ.      | Max.                 | Unit                    |
|---|-----------------------------------|---|----------------------|-----------|----------------------|-------------------------|
| Output Voltage                          | Vout                              | $V_{in}=V_{out}+1\text{V}$<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                        | Iout                              | $V_{in}-V_{out}=1\text{V}$  | --                   | 300       | --                   | mA                      |
| Low dropout*2                           | Vdrop                             | Refer to the next table   |                      |           |                      |                         |
| Line Regulation                         | $\Delta V_{out}/(V_{in}-V_{out})$ | $1.6\text{V}\leq V_{in}\leq 8\text{V}$<br>$I_{out}=40\text{mA}$             | --                   | 0.05      | 0.2                  | %/V                     |
| Load Regulation                         | $\Delta V_{out}/\Delta I_{out}$   | $V_{in}=V_{out}+1\text{V}$<br>$1.0\text{mA}\leq I_{out}\leq 80\text{mA}$    | --                   | 12        | 30                   | mV                      |
| Output voltage Temperature Coefficiency | $\Delta V_{out}/(T_a-V_{out})$    | $I_{out}=30\text{mA}$<br>$0^{\circ}\text{C}\leq T_a\leq 70^{\circ}\text{C}$ | --                   | $\pm 100$ | --                   | Ppm/ $^{\circ}\text{C}$ |
| Supply Current                          | I <sub>ss1</sub>                  | --  | --                   | 3.5       | 5                    | $\mu\text{A}$           |
| Input Voltage                           | Vin                               | --  | --                   | 6         | 8                    | V                       |
| PSRR                                    | PSRR                              | F=1KHz<br>$V_{in}=V_{out}+1\text{V}$  | --                   | 50        | --                   | dB                      |
| Output Noise                            | EN                                | BW=10Hz~100KHz  | --                   | 30        | --                   | $\mu\text{V}_{rms}$     |

### Electrical Characteristics by Output Voltage:

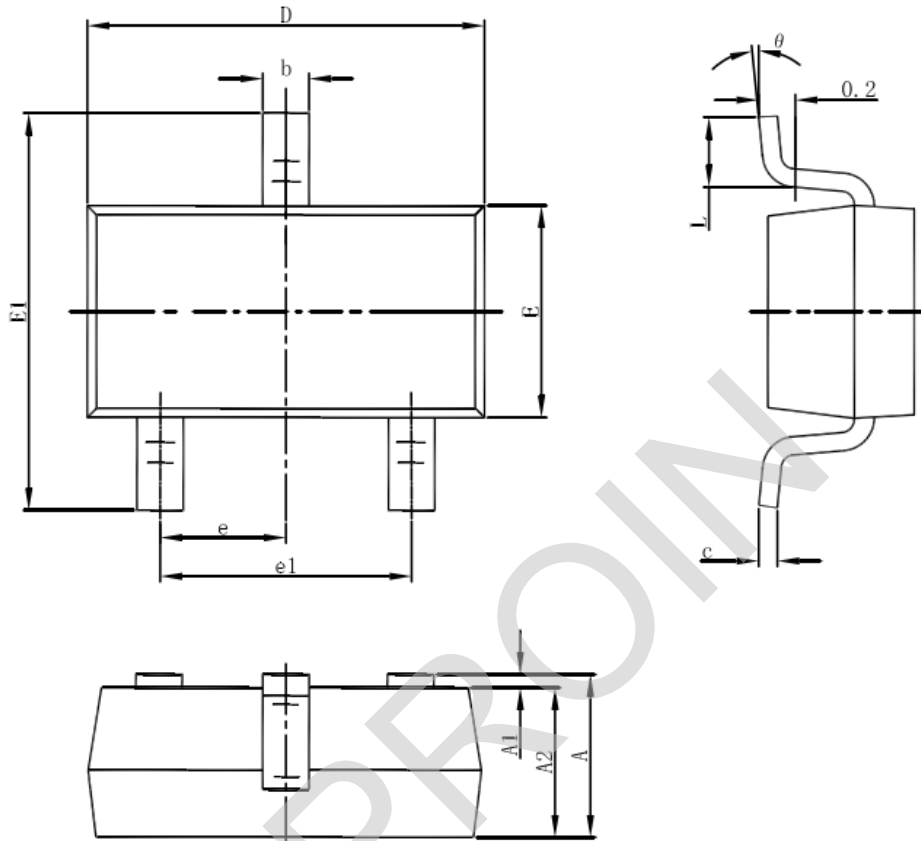
| Output Voltage Vout(V)    | Dropout Voltage Vdif (V) |      |      |
|---------------------------|--------------------------|------|------|
|                           | Conditions               | Typ. | Max. |
| $V_{out}\leq 1.5\text{V}$ | I <sub>out</sub> =100 mA | 0.35 | 0.57 |
| $1.8\leq V_{out}\leq 2$   |                          | 0.28 | 0.42 |
| $2.8\leq V_{out}\leq 5.0$ |                          | 0.19 | 0.35 |

Package Information  
3-pin SOT23 Outline Dimensions



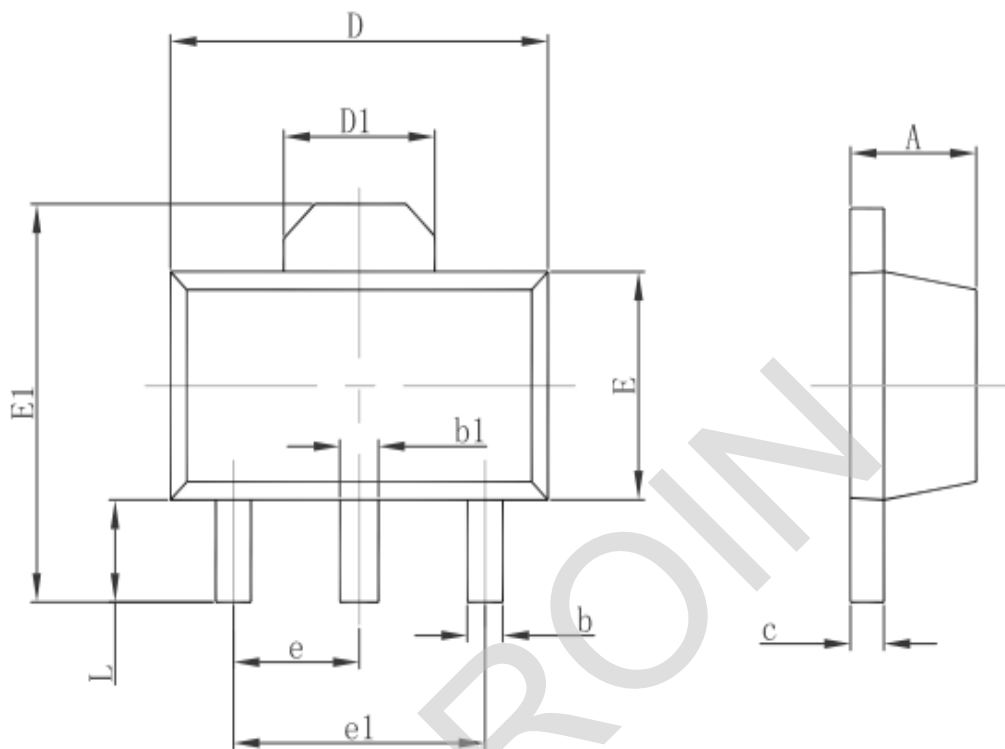
| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min.                      | Max.  | Min.                 | Max.  |
| A      | 0.900                     | 1.150 | 0.035                | 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°    |

3-pin SOT23-3 Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 1.050                     | 1.250 | 0.041                | 0.049 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 1.050                     | 1.150 | 0.041                | 0.045 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.100                     | 0.200 | 0.004                | 0.008 |
| D      | 2.820                     | 3.020 | 0.111                | 0.119 |
| E      | 1.500                     | 1.700 | 0.059                | 0.067 |
| E1     | 2.650                     | 2.950 | 0.104                | 0.116 |
| e      | 0.950(BSC)                |       | 0.037(BSC)           |       |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.300                     | 0.600 | 0.012                | 0.024 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

3-pin SOT89 Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min.                      | Max.  | Min.                 | Max.  |
| A      | 1.400                     | 1.600 | 0.055                | 0.063 |
| b      | 0.320                     | 0.520 | 0.013                | 0.020 |
| b1     | 0.400                     | 0.580 | 0.016                | 0.023 |
| c      | 0.350                     | 0.440 | 0.014                | 0.017 |
| D      | 4.400                     | 4.600 | 0.173                | 0.181 |
| D1     | 1.550 REF.                |       | 0.061 REF.           |       |
| E      | 2.300                     | 2.600 | 0.091                | 0.102 |
| E1     | 3.940                     | 4.250 | 0.155                | 0.167 |
| e      | 1.500 TYP.                |       | 0.060 TYP.           |       |
| e1     | 3.000 TYP.                |       | 0.118 TYP.           |       |
| L      | 0.900                     | 1.200 | 0.035                | 0.047 |