



# ACE509

## Low noise, fast response 500mA LDO regulator

### Description

ACE509 series is a group of positive voltage output, low power consumption, low dropout voltage regulator.

ACE509 can provide output value in the range of 1.2V~4.5V every 0.1V step. It also can be customized on command.

ACE509 includes high accuracy voltage reference, error amplifier, current limit circuit and output driver module with discharge capability.

ACE509 has excellent load and line transient response and good temperature characteristics, which can assure the stability of chip and power system. And it uses trimming technique to guarantee output voltage accuracy within  $\pm 2\%$ .

### Features

- Low Power Consumption: 75uA (Typ.)
- Low output noise (47uVRMS)
- Standby Mode: 0.1uA
- Low dropout Voltage: 0.46V@500mA (Typ.)
- High Ripple Rejection: 66dB@100Hz (Typ.)
- Low Temperature Coefficient:  $\pm 100\text{ppm}/^\circ\text{C}$
- Excellent Line regulation: 0.05%/V
- Build-in chip enable and discharge circuit
- Output Voltage Range: 1.2V~4.5V (customized on command every 0.1V step)
- Highly Accurate:  $\pm 2\%$  ( $\pm 1\%$  customized)
- Output Current Limit

### Application

- Power source for cellular phones and various kind of PCSs
- Battery Powered equipment
- Power Management of MP3, PDA, DSC, Mouse, PS2 Games
- Reference Voltage Source
- Regulation after Switching Power



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## Absolute Maximum Ratings

| Parameter            | Symbol   | Max         | Unit |
|----------------------|----------|-------------|------|
| Input Voltage        |          | 10          | V    |
| Output Current       |          | 500         | mA   |
| Power Dissipation    | SOT-23-5 | 250         | mW   |
|                      | SOT-23-3 | 200         |      |
|                      | TO-92    | 500         |      |
| Junction temperature | $T_J$    | 125         | °C   |
| Storage temperature  | $T_s$    | - 45 to 150 | °C   |

## Recommended Work Conditions

| Item                | Min | Max | Unit |
|---------------------|-----|-----|------|
| Input Voltage Range |     | 8   | V    |
| Ambient Temperature | -40 | 85  | °C   |

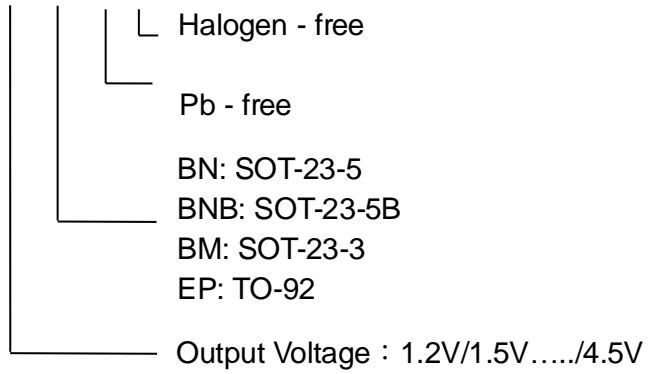


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## Ordering information

ACE509 XX XX + H





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## Notes

ACE does not assume any responsibility for use as critical components in life support devices or systems without the express written approval of the president and general counsel of ACE Technology Co., LTD. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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