

## Ultra-Low Noise Ultra-Fast 300mA LDO Regulator

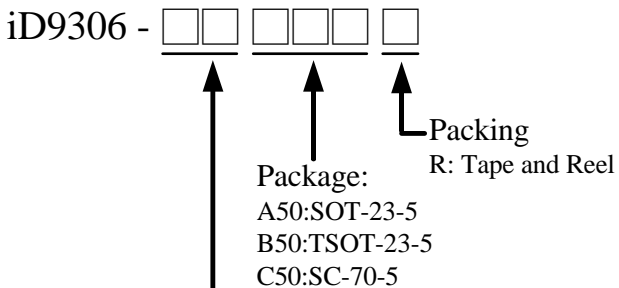
### General Description

The iD9306 is a 300mA, low dropout and low noise linear regulator with high ripple rejection ratio and fast turn-on time. It has fixed and adjustable versions with output voltage ranging from 1.2V to 5V.

The iD9306 includes a reference voltage source, an error amplifier, driver transistors and an internal current limiter. The current limiter's holdback circuit operates as a short protection.

The iD9306 works well with low ESR ceramic capacitors, suitable for portable RF and wireless battery-powered applications with stringent space requirements and demanding performance. It also offers ultra low noise output and has low quiescent current.

### Ordering Information



Output Voltage	Voltage Code
1.5	15
1.8	18
2.5	25
2.7	27
2.8	28
3.0	30
3.1	31
3.3	33
Adjustable	AD

*Note: TSOT-23-5 only provides 2.5V and 2.7V output voltage.*

Other voltage outputs may be available. For further details, please contact an iDesyn sales or distributor.

### Features

- Ultra-Low-Noise Application
- Wide 2.5V to 7V Operating Range
- Quick Start-up
- Current Limiting Protection
- Thermal Shutdown Protection
- Low Dropout : 200mV @ 300mA
- High Ripple Rejection 70dB@1kHz
- Standby Current Less Than 0.1µA
- Auto Discharge

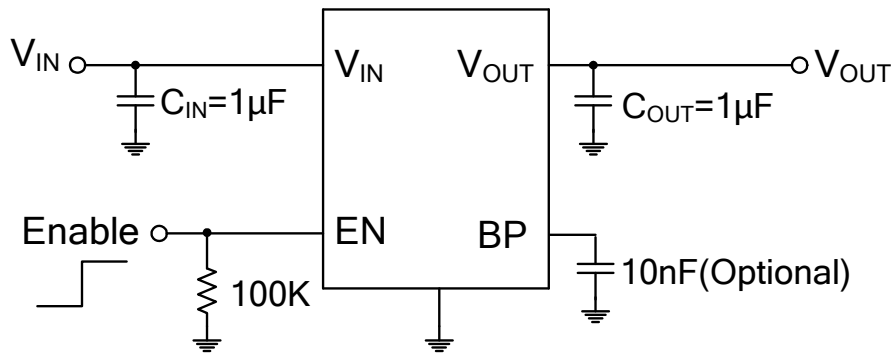
### Applications

- Battery-Powered Equipment
- Portable Instruments
- Digital Camera
- WLAN Communication
- Hand-Held Instruments

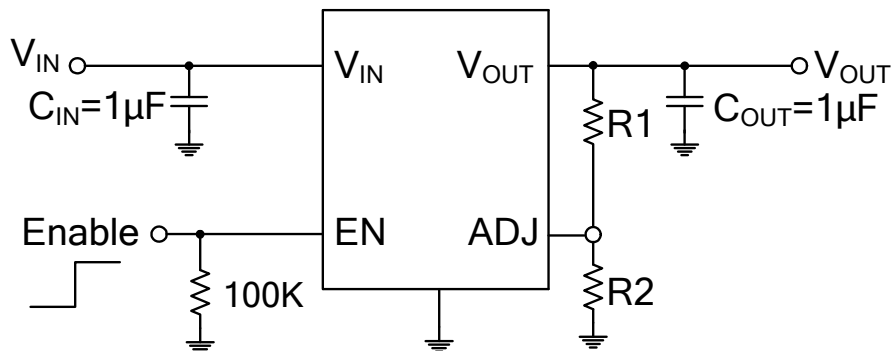
### Marking Information

For marking information, please contact our sales representative directly or through distributor around your location.

### Typical Application Circuit



**Figure 1. Fixed Voltage BP Version**



$$V_{OUT} = 1.2 \times \left( 1 + \frac{R_1}{R_2} \right) \text{Volts}$$

**Figure 2. Adjustable Voltage Version**

#### Absolute Maximum Ratings (Note1)

Supply Voltage $V_{IN}$	8V
Power Dissipation, $P_D$ @ $T_A=25^\circ\text{C}$	
SC-70-5	300mW
SOT-23-5 / TSOT-23-5	400mW
Thermal Resistance, $\theta_{ja}$	
SC-70-5	333°C/W
SOT-23-5 / TSOT-23-5	250°C/W
Lead Temperature	260 °C
Storage Temperature	-65°C to 150°C
ESD Susceptibility	
HBM (Human Body Mode)	2kV
MM (Machine Mode)	200V

#### Recommended Operating Conditions

Input Voltage $V_{IN}$	2.5V to 7V
EN Input Voltage	0V to 7V
Junction Temperature	-40°C to 125°C
Ambient Operating Temperature	-40°C to 85°C