

High-withstand Voltage, 125°C Operation
Low Input Offset Voltage



CMOS OPERATIONAL AMPLIFIER for Automotive Use

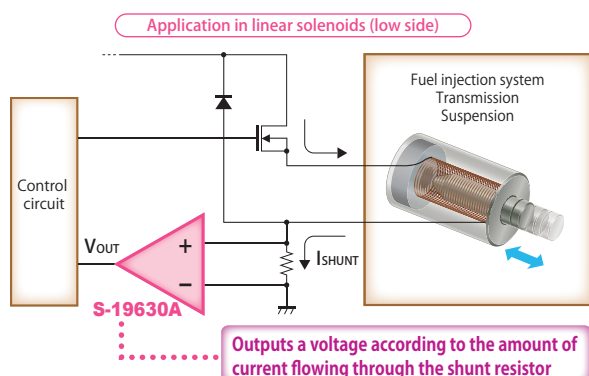
S-19630A

S-19630A

- A wide operation voltage range (4.0 to 36V) allows the use of S-19630A in a broad range of systems, ranging from 5V to high voltage systems directly connected to battery.
- A low offset voltage of 50 μV max. and low offset voltage drift of 25nV/°C typ. enable high-accuracy current detection. It greatly contributes to better fuel-efficiency and lower power consumption for automotives.
- Rail-to-rail input enables detection of both low-side and high-side current.

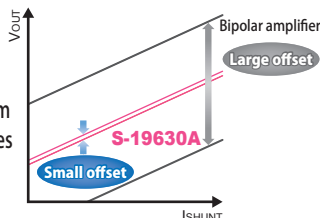
Enables high-accuracy current detection!

The S-19630A is a **zero-drift amplifier with a wide operation voltage range**. A low offset voltage of 50 μV max. makes it **ideal for use in systems that require high-accuracy current detection** such as linear solenoids.



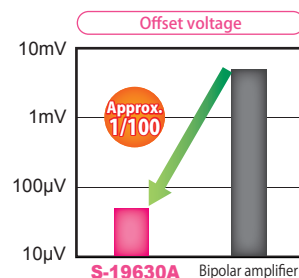
Compared to bipolar amplifier characteristics

The use of S-19630A **reduces the characteristics dispersion correction process** that a system using a bipolar amplifier requires so far.



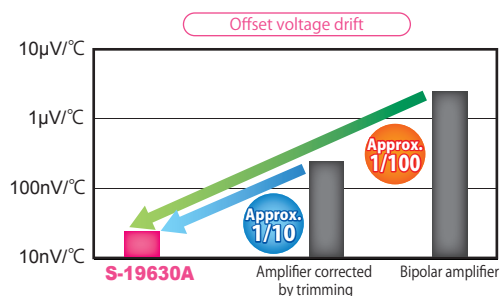
Low offset voltage and low offset voltage drift

The offset voltage is **approx. 1/100** of that of a bipolar amplifier.



Offset voltage drift (temperature dependency of offset voltage):

- **Approx. 1/10** of an amplifier whose offset voltage has been corrected by trimming
- **Approx. 1/100** of a bipolar amplifier



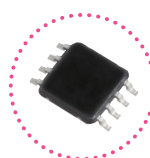
Specifications (The listed specifications apply to the whole temperature range.)

Item	S-19630AB
Number of circuits	2
Operation power supply voltage range	4.0 to 36.0V
Input offset voltage	$\pm 10 \mu\text{V}$ typ., $\pm 50 \mu\text{V}$ max.
Input offset voltage drift	$\pm 25 \text{nV}/^\circ\text{C}$ typ., $\pm 120 \text{nV}/^\circ\text{C}$ max., ($V_{\text{DD}}=30.0\text{V}$)
Input bias current	10nA max.
Common-mode input voltage range	V_{SS} to V_{DD}
Operation temperature range	$T_a = -40$ to $+125^\circ\text{C}$ ($T_J = +150^\circ\text{C}$ max.)
AEC-Q100	In process
PPAP	Capable

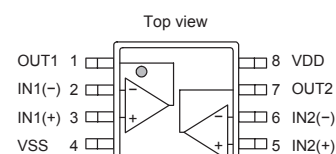
Refer to the S-19630A datasheet for the latest information.
Contact our sales office for information on samples.

Package

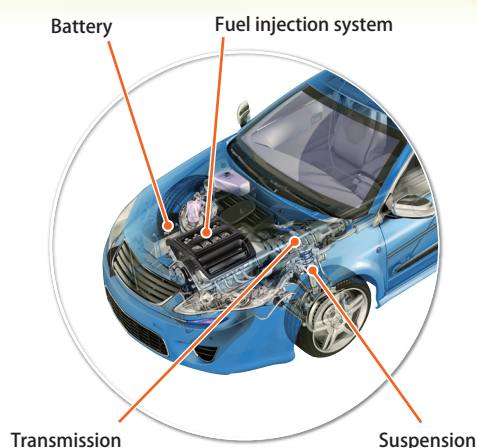
TMSOP-8



4.0×2.9×0.8 (max.) mm

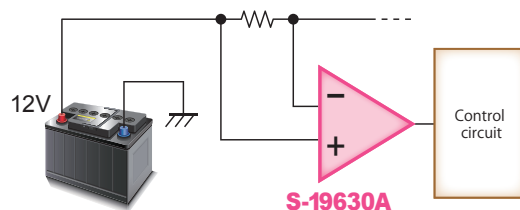


Application examples



Capable of direct connection to battery

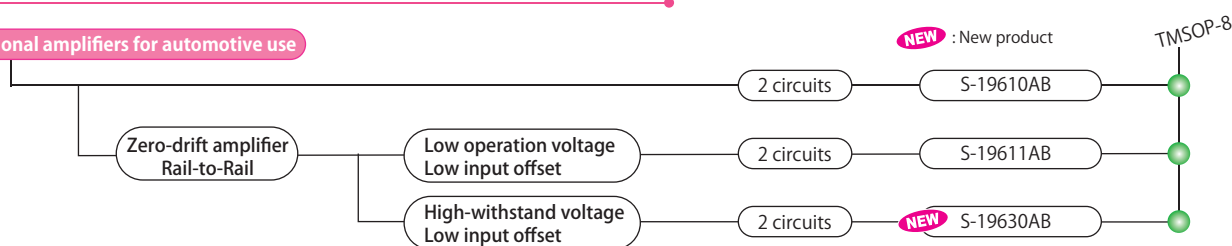
High-withstand voltage operation of 36V and rail-to-rail input enable direct connection to battery for high-side current detection.



Operational amplifiers for automotive use

Lineup

Operational amplifiers for automotive use



Product list

For details, please refer to the datasheet of each product.

Operational amplifiers for automotive use (AEC-Q100 qualified, PPAP capable)

Product name	Rail-to-Rail input	Operation voltage range	Current consumption (typ.) (per circuit)	Input offset voltage (max.) (whole temperature range)	Gain-bandwidth product	Slew rate	Operation temperature range
S-19610A	—	2.7 to 5.5V	1.0mA	6.0mV	3.0MHz	2.0V/μs	−40 to +125°C
S-19611A	✓	2.65 to 5.5V	200 μA	100 μV	320kHz	0.22V/μs	−40 to +105°C
NEW S-19630A	✓	4.0 to 36.0V	250 μA	50 μV	1.2MHz	0.45V/μs	−40 to +125°C



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