

STMicroelectronics' failsafe comparators with guaranteed start-up time boost reliability and power savings

Ideal for use in industrial controls, building automation, power tools, smart metering, as well as in automotive powertrain and body-control modules

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STMicroelectronics' [TS3121](#) and [TS3121A](#) rail-to-rail, open-drain, single channel comparators feature a novel failsafe architecture and guaranteed start-up time that simplify powering up for short periods to minimize consumption in low-power applications.



The failsafe architecture allows analog sensor voltages to remain at the inputs when the supply voltage is cut, which ensures robust performance and helps simplify application firmware. The guaranteed start-up time allows frequent power cycling with extended off duration for maximum power savings.

Inspired by industrial robots that use sensors running from a back-up battery to maintain positional awareness while the main system turns off saving power, these comparators fulfill diverse automation applications. Also featuring independent supply, I/O, and output voltage domains that allow flexible level shifting, they are ideal for use in industrial controls, building automation, power tools, and smart metering. In addition, both the TS3121 and TS3121A are available as automotive-qualified devices that are suited to use in applications such as powertrain and body-control modules.

The comparators operate over a wide supply-voltage range, from 1.7V to 5.5V, and feature a precision input stage that facilitates accurate threshold detection with typical propagation delay of 60ns. Both devices have typical input-offset voltage of 0.5mV, with a specified maximum offset of 2mV for the TS3121A and 6mV for the TS3121. Both tolerate ESD up to 4kV (HBM), and operate over the extended temperature range from -40°C to 125°C. The comparators are

available in space-saving SC70-5 and standard SOT23-5 packages.

The TS3121 and TS3121A are available now, priced from \$0.60 for orders of 1000 units and free samples of the TS3121 and TS3121A are available on the ST eStore. The comparators are included in ST's 10-year longevity program that guarantees long-term product availability

For more information, please visit www.st.com/hs-comparators

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