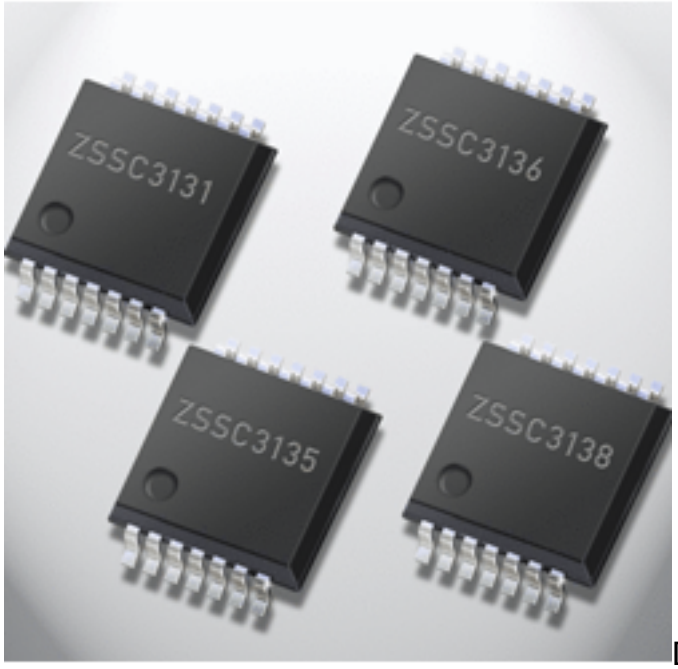
Signal conditioner ICs ideal for automotive and industrial pressure sensing applications



Dresden, Germany, November 15, 2011 – ZMD AG (ZMDI) introduced four smart sensor signal conditioner ICs. ZMDI designed the ZSSC3131, ZSSC3135, ZSSC3136 and ZSSC3138 for the signal conditioning of resistive bridge sensing elements, like silicon or ceramic-based piezo-resistive transducers or thin-/thick-film or gauge-type sensor elements. The devices are ideal for automotive and industrial pressure sensing applications such as HVAC, cooling, pneumatic brakes and other hydraulic systems.

“Sensor system designers can select among four pin-compatible products to obtain the best fit in terms of sensor type, system safety and module cost requirements,” states Steffen Huettner, automotive SSC Product Marketing Manager at ZMDI. “The different feature sets allow for applications ranging from under and over pressure switches for hydraulic and pneumatic systems all the way to failsafe, SIL compliant switches and high accuracy pressure monitoring systems for HVAC and pneumatic brake applications”.

Diagnostics functions range from a basic sensor connectivity check with the ZSSC3135 and ZSSC3138 to a complete set of SIL compliant sensor diagnostics with the ZSSC3136. The ZSSC3135 and ZSSC3136 provide an external sensor temperature measurement for an on-chip compensation of sensor temperature effects and increased system accuracy.

When used in ceramic sensor based systems, the ZSSC3138 with its on-chip offset compensation capability eliminates the need for sensor laser trimming in production and allows sensor system suppliers to reduce manufacturing costs while increasing long-term offset and temperature stability of the sensor system.

The devices are available in a SSOP-14 package. Pin-compatibility allows system designers to develop several designs in parallel enabling shorter time to market and flexibility.

An automatic end-of-line procedure, communicating via digital one-wire-interface (I2CTM / ZACwireTM), compensates sensor offset, sensitivity, temperature drift and non-linearity within a single calibration pass sequence.

All devices have an analog ratiometric voltage output and they operate with supply voltages between 4.5V to 5.5V. They are available for temperature ranges from -40°C to +125°C and -40°C to +150°C.

Input signal measurement accuracies are within +/- 0.25% full-scale operational range at -25 to +85°C and +/- 0.50% full-scale operational range at -40 to +125°C. All devices have integrated high-voltage protection up to 33V, robust ESD and EMI stability, reverse polarity and short circuit protection and meet automotive AEC-Q100 standard.

Packaged parts in volumes of 1,000 devices are priced at € 2,95 / USD 4.28 (ZSSC3131), at € 3,03 / USD 4.39 (ZSSC3135), at € 3,19 / USD 4.62 (ZSSC3136), and at € 3,25 / USD 4.71 (ZSSC3138).

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