SAP5S / SAP51
Spec. 3.0 Compatible AS-I IC

ZMDI®
The Analog Mixed Signal Company

Brief Description

SAP5S/SAP51 is a new generation CMOS integrated circuit for AS-I networks.

The low-level field bus AS-I (Actuator Sensor Interface) was designed for easy, safe and cost-effective interconnection of sensors, actuators and switches. It transports both power and data over the same two-wire unshielded cable.

SAP5S/SAP51 is used as a part of a master or slave node and works as an interface to the physical bus.

The device realizes power supply, physical data transfer and communication protocol handling and is fully compliant with AS-Interface Complete Specification V3.0.

SAP5S/SAP51 can be programmed by the user to operate in Standard Slave Mode, Safety Mode SAP5S only) or Master Mode.

The special AS-I Safety Mode (SAP5S only) assures short response times regarding security related events.

All configuration data are stored in an internal EEPROM that can be easily programmed by a stationary or handheld programming device.

SAP5S/SAP51 is optimized for harsh environments by it's special burst protection circuitry and excellent electromagnetic compatibility.

Features

- Compliant with AS-I Complete Specification V3.0
- Integrated safety code generator (SAP5S only)
- Universal application: in slaves, masters, repeaters and bus-monitors
- On-chip electronic inductor: 55 mA current drive capability
- Two LED outputs to support Spec. V3.0 status indication modes
- User programmable to operation in Standard Slave Mode, Safety Mode or Master Mode
- Supports 5.33/16 MHz crystals by automatic frequency detection
- Data preprocessing functions
- Special burst protection circuitry
- Excellent electromagnetic compatibility
- Clock and communication watchdogs for high system security
- Available in SOP20 and SOP16 package
- Industrial Temperature Range -25°C to +85°C

Benefits

- Cost savings due to integrated Safety code Generator (SAP5S)
- Functional and pin compatible to SAP4.1
- Automatic x-tal detection (5,33 MHz or 16 MHz)
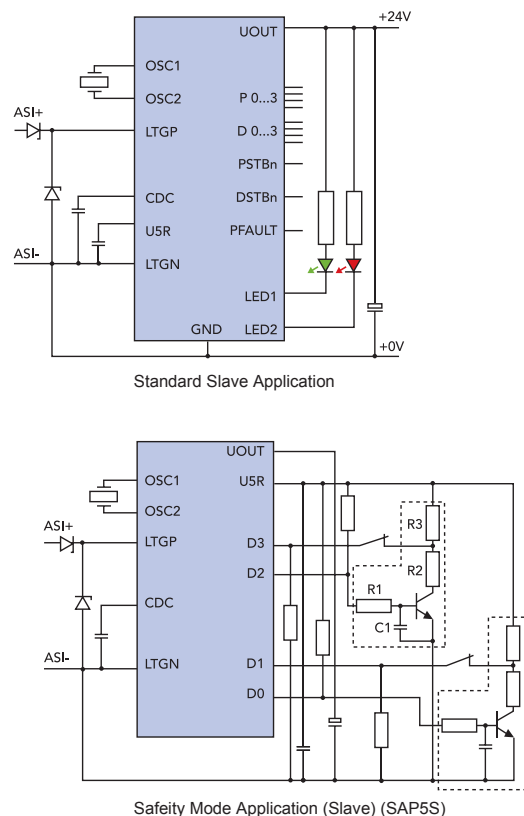- Supports AS-I complete Specification 3.0

Available Support

- ZMDI AS-Interface Programmer Kit USB
- ZMDI SAP5 Evaluation Board V2.0

Physical Characteristics

- Operational temperature range: -25 to +85°C
- SOP16 and SOP20 package
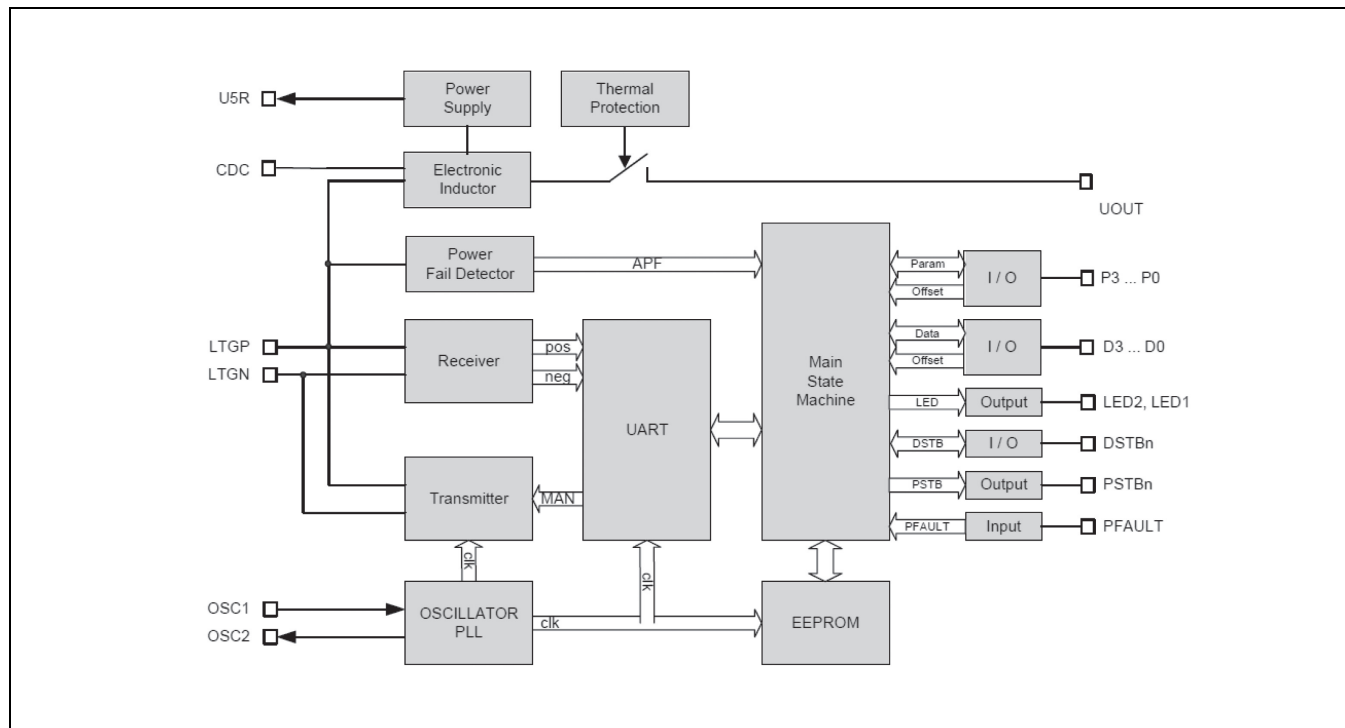
SAP5S/SAP51 Basic Application Circuit

Standard Slave Application

Safety Mode Application (Slave) (SAP5S)

SAP5S/SAP51 Block Diagram

Ordering Information

Ordering Code	Operating Temperature Range	Package Type	RoHs Conform	Shipping Form	Minimum Order Quantity
SAP51C-A-G1-T	-25°C to 85°C	SOP20/300mill	Y	Tubes (37 parts/tube)	370 pcs. (10 tubes)
SAP5SC-A-G1-T					
SAP51C-A-G1-R	-25°C to 85°C	SOP20/300mill	Y	Tape-and-Reel (1000 parts/reel)	1000 pcs. (1 reel)
SAP5SC-A-G1-R					
SAP51C-B-G1-T	-25°C to 85°C	SOP16/300mill	Y	Tubes (46 parts/tube)	460 pcs. (10 tubes)
SAP5SC-B-G1-T					
SAP51C-B-G1-R	-25°C to 85°C	SOP16/300mill	Y	Tape-and-Reel (1000 parts/reel)	1000 pcs. (1 reel)
SAP5SC-B-G1-R					