RENESAS

**AS-Interface Spec. V3.0
Compliant Universal AS-i IC**

**ASI4U /
ASI4U-E /
ASI4U-F**
Datasheet

Brief Description

The ASI4U is a next-generation CMOS integrated circuit for AS-i networks. This 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.

The ASI4U is used as part of a master or slave node and functions as an interface to the physical bus. It provides the power supply, physical data transfer, and communication protocol handling. The ASI4U is fully compliant with the *AS-Interface Complete Specification V3.0*. It is function and pin compatible with the A²SI IC.

All configuration data are stored in an internal EEPROM that can be easily programmed by a stationary or handheld programming device. The special AS-i safety option assures short response times for security-related events.

Features

- Compliant with *AS-Interface Complete Specification V3.0*
- Universal application: slaves, masters, repeaters, and bus-monitors
- Floating AS-i transmitter and receiver for highly symmetrical high-power applications
- On-chip electronic inductor with current drive capability of 55 mA
- Two configurable LED outputs to support all *AS-Interface Complete Specification V3.0* status indication modes
- Several data pre-processing functions, including configurable data input filters and bit-selective data inverting
- Additional addressing channel for easy wireless module setup
- Support of 8 and 16 MHz crystals by automatic frequency detection
- Special AS-i safety option
- Clock watchdog for high system security

Related Products

- SAP5 Universal AS-Interface IC

Benefits

- Flexible, separated I/O pins
- Flexible AS-i Bus adoption (isolated transceiver)
- Very small package SSOP28 (ASI4U and ASI4U-F)
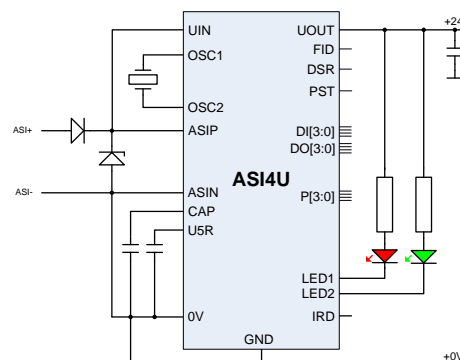- High ambient temperature applications (ASI4U-E)

Physical Characteristics

- ASI4U operational temperature: -25 to +85 °C
- ASI4U-F operational temperature: -40 to +85 °C
- ASI4U-E operational temperature: -25 to +105 °C
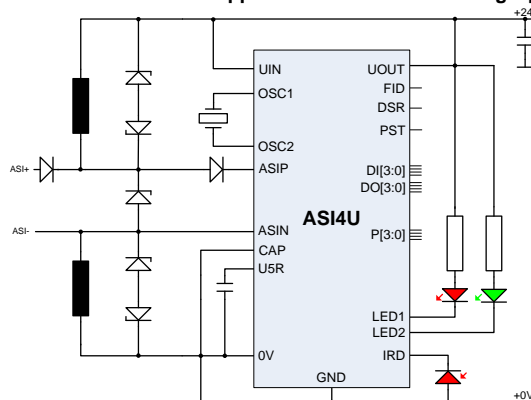- RoHS-conformant package: SSOP28 (ASI4U and ASI4U-F) / SOP28 (ASI4U-E)

Available Support

- IDT AS-Interface Programmer Kit V2.0
- IDT ASI4U Evaluation Board V2.0

ASI4U Basic Application Circuits
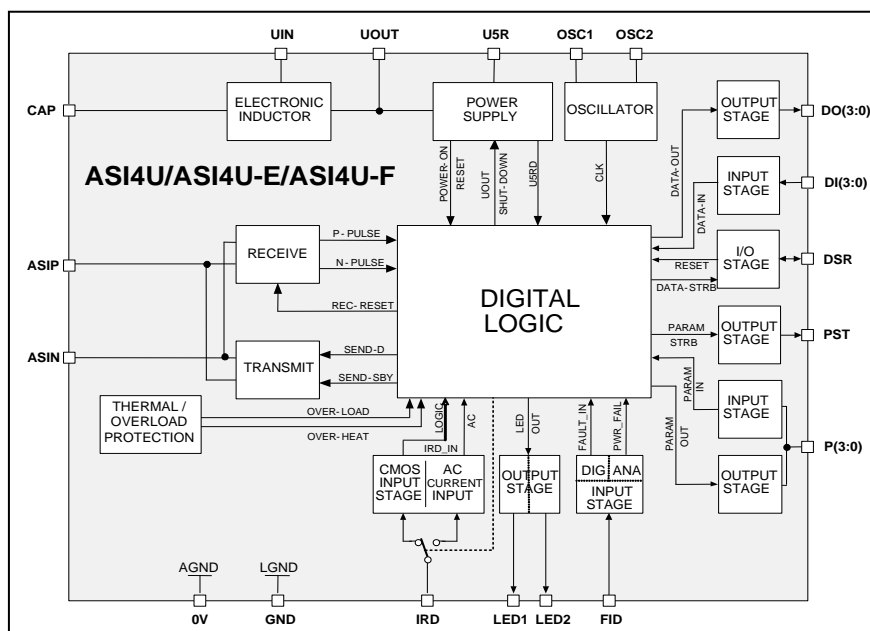
Standard Application

Extended Power Application with IR-Addressing Option

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ASI4U Block Diagram

Typical Applications

- AS-i Master Modules
- AS-i Slave Modules
- AS-i Safety Modules

Ordering Information

Ordering Code	Type	Package	T$_a$ [°C]	RoHS Conform	Packaging	Minimum Order
ASI4UE-G1-ST	Standard	SSOP28	-25 to 85	Y	Tube (47 parts/tube)	470
ASI4UE-G1-SR	Standard	SSOP28	-25 to 85	Y	Tape & Reel (1500 parts/reel)	1500
ASI4UE-G1-SR-7	Standard	SSOP28	-25 to 85	Y	Tape & Reel 7" (500 parts/reel)	500
ASI4UE-G1-MT	Master	SSOP28	-25 to 85	Y	Tube (47 parts/tube)	470
ASI4UE-G1-MR	Master	SSOP28	-25 to 85	Y	Tape & Reel (1500 parts/reel)	1500
ASI4UE-E-G1-ST	Standard	SOP28	-25 to 105	Y	Tube (27 parts/tube)	270
ASI4UE-E-G1-SR	Standard	SOP28	-25 to 105	Y	Tape & Reel (1000 parts/reel)	1000
ASI4UE-F-G1-ST	Standard	SSOP28	-40 to 85	Y	Tube (47 parts/tube)	470
ASI4UE-F-G1-SR	Standard	SSOP28	-40 to 85	Y	Tape & Reel (1500 parts/reel)	1500

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