► HALIOS® Micromouse

coming soon

E909.02|03

FEATURES

- Supply voltage range 3.0V to 5.5V
- Programable detection algorithms for many different applications
- 8-Bit microcontroller with 4MHz clockrate
- 4kByte EEPROM
- 192 Byte RAM
- Optical working principle without mechanics
- Operational up to 100klux ambient light
- Low standby current
- Parameter adjustment and functional data read back via SPI
- Configureable inputs and outputs
- –40°C to +85°C operating temperature
- LQFP 48 package

APPLICATION

- Navigation key for mobile phones, laptop computers and handheld devices
- Switches, rotation-sliders, proximity-sensors
- Compact 2-D input device

DESCRIPTION

The IC is an optical sensor which provides a non-mechanical detection of movements. The EEPROM allows a free configuration of the sensor-structure and the detection algorithms.

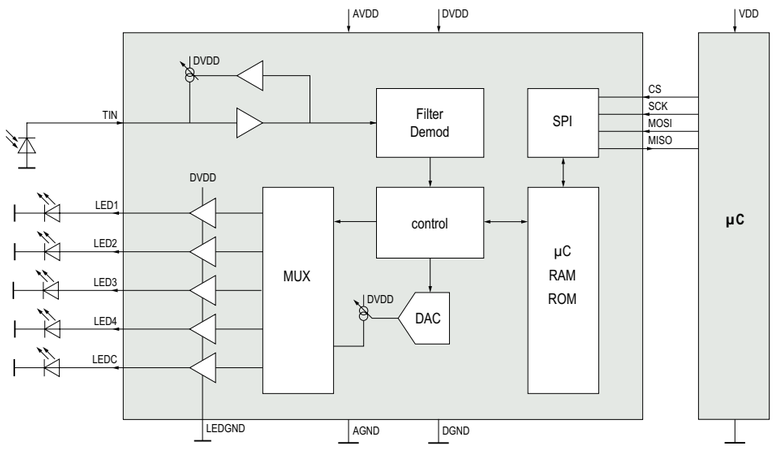
The sensor measures the optical reflections of an object on a cover above the sensor using a system so called HALIOS® (High Ambient Light Independent Optical System). HALIOS® is high efficient suppressing ambient light and also has an inherent self calibration to eliminate disturbances caused by housing reflections such as scratches.

The infrared emitting diodes (IRED, signal diodes) and the photodiode are placed on a PCB in a required formation. The ability to detect the motion of an object on the surface depends on changes in the optical path of the reflected signal, changing the relative light intensity of LED pairs.

With 4k of EEPROM the customer has enough memory space for even complex applications and an easy to use posibility to protect his know how even in a ASSP.

For automotive, industrial and pc applications a version 909.03 with integrated IR diodes and photodiode is available in an ASIC*plus* package.

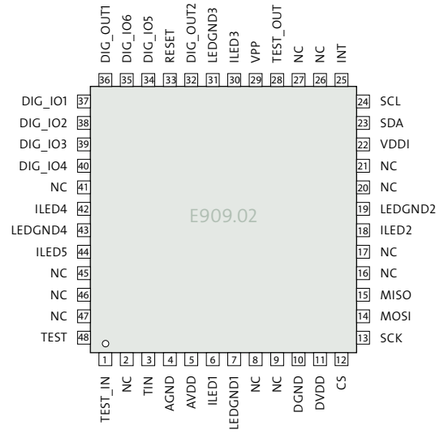
BLOCK DIAGRAM



PINNING

Pin	Name	Description
1	TEST _ IN	Analog test input
3	TIN	Transimpedance amplifier input
4	AGND	Analog ground
5	AVDD	Analog supply
6	ILED1	Driver LED 1
7	LEDGND1	Analog ground driver LED 1
10	DGND	Digital ground
11	DVDD	Digital supply
12	CS	SPI chip select: slave mode: input, master mode: output
13	SCK	SPI clock: slave mode: input, master mode: output;
14	MOSI	SPI data in: slave mode: MOSI, master mode: MISO
15	MISO	SPI data out: slave mode: MISO, master mode: MOSI
18	ILED2	Driver LED2
19	LEDGND2	Analog ground driver LED2
22	VDDI	Digital supply for I²C - interface
23	SDA	I²C data in/out, open collector
24	SCL	I²C clock input
25	INT	I²C interrupt output
28	TEST _ OUT	Test output
29	VPP	Supply voltage for E² write procedures
30	ILED3	Driver LED3
31	LEDGND3	Analog ground driver LED3
32	DIG _ OUT2	Programable digital output 2
33	RESET	Reset input
34-35	DIG _ IO5	Programable digital input/output 5-6
36	DIG _ OUT1	Programable digital output 1
37-40	DIG _ IO1	Programable digital input/output 1-4
42	ILED4	Driver LED4
43	LEDGND4	Analog ground driver LED4
44	ILED5	Driver LED5
48	TEST	Test mode enable
2,8-9,16-17,20-21,26-27,41,45-47		Not connected

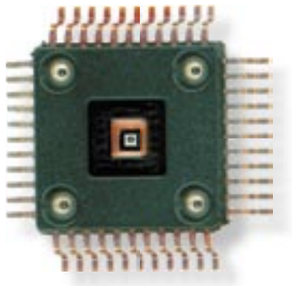
PACKAGE



AVAILABILITY

Samples	available
Series	Q4/2005 (E909.02)
	Q2/2006 (E909.03)

E909.03*



*Available for automotive, industrial or pc applications.

ASICplus
More than a Chip!