



Sensor Interface

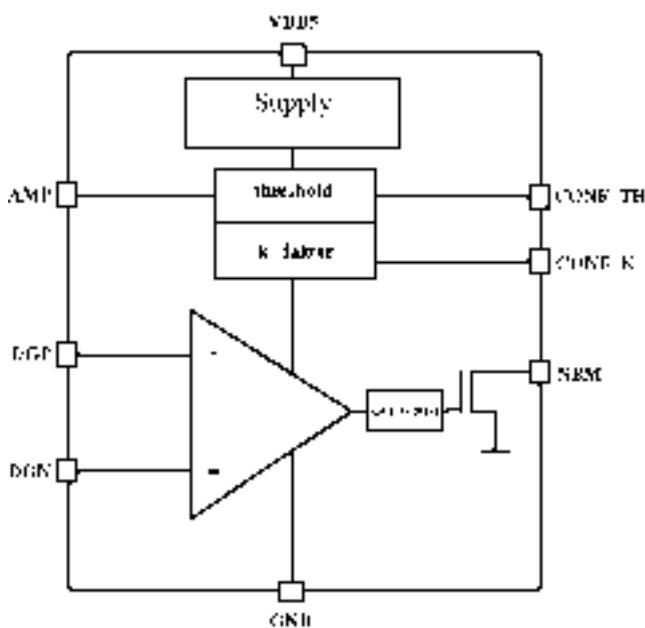
Sensor interface for an inductive engine wheel speed single rotation sensor

FEATURES

- differential input
- single channel
- two basic thresholds
- amplitude-dependent part k-tracking with two possible adjustable factors
- switching at negative zero crossing
- Glitch filtered open drain output
- Package : SOIC8

GENERAL DESCRIPTION

The integrated circuit CY30 contains an evaluation circuit for potential-free input signals of an inductive sensor. The circuit evaluates the negative zero crossing of the sensor signal.



PIN DESCRIPTION

Pin	Name	Function
1	VDD5	5 V Supply voltage
2	DGP	Positive input inductive sensor signal
3	DGN	Negative input inductive sensor signal
4	GND	Ground
5	NBM	Open drain output rotation speed signal
6	CONF_K	Configuration pin for amplitude dependent part k factor
7	CONF_TH	Configuration pin for basic threshold
8	AMP	Pin for amplitude dependent threshold tracking

MAXIMUM RATINGS

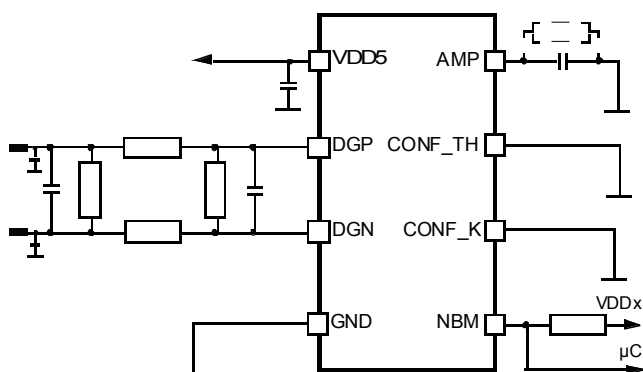
Parameter	Min	Max	Unit
Supply voltage	4.5	5.5	V
Voltage resistance, all pins	-0.3	6	V
Current DGN, DGP	-20	20	mA
Operating ambiente temperature	-40	125	°C
Thermal resistance		160	K/W
ESD HBM, MIL883D 3015 100pF / 1.5kΩ	-2	+2	kV



preliminary

DETAILED DESCRIPTION

The inductive-sensor signal applied to DGP and DGN is raised by an internal voltage divider to a bias voltage of approximately 2.5 V. An internal clamp structure limits the voltage at DGP / DGN between -0.7 V and $VDD5 + 0.7 V$ typically. The inductive sensor signal is then fed to the internal comparators. With a positive inductive sensor signal which exceeds the positive threshold, the output signal NBM is set to High (corresponds to preparing for the negative zero crossing). The analog glitch filter suppresses short disturbance pulses smaller than 3 μs . The NBM signal is reset to low at the negative zero crossing.

APPLICATION CIRCUIT

The resistor network is necessary for sensor adapting.

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