► Ripple detection IC

system evaluation chip

T911.45

FEATURES

- Supply voltage VDD 4.75V to 5.25V
- High voltage input for motor voltage sensing
- Variable SC filter for high noise immunity controlled by motor voltage and current
- Hysteresis comparator with adaptive thresholds for min and max detection
- Adjustable filter gain to match motor ripple amplitude
- Logic level ripple output
- Low operating current (typ. 3mA)
- Few components to adjust motor type
- –40°C to +125°C operating temperature
- SO14n package

APPLICATION

- Seat-, mirror- and other positioning systems
- Pump-, fan- and other speed control systems

DESCRIPTION

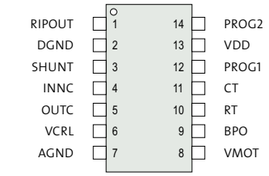
The IC detects the commutation ripple of a DC motor in speed sensing or positioning systems.

The ripple signal is available on an output pin to connect controllers or dedicated logic. The IC can be adapted to different motor characteristics by changing the RC-filter and the voltage divider. The resonant frequency of the variable band pass filter is automatically set close to the expected ripple frequency by measuring both, motor voltage and current. Thus for all disturbing frequencies generated by the power supply, the motor drive circuit and the motor itself, good noise reduction is obtained. To optimize the filter characteristics the gain can be programmed between 3 and 12.

PINNING

Pin	Name	Description
1	RIPOUT	Ripple output
2	DGND	Digital ground
3	SHUNT	Current sense input
4	INNC	Inverting input of current amplifier
5	OUTC	Current amplifier output
6	VCRL	Test output for VCO control voltage before filtering
7	AGND	Analog ground
8	VMOT	Motor voltage input
9	BPO	Test output for SC bandpass filter output signal
10	RT	VCO pin for external timing resistor
11	CT	VCO pin for external timing capacitor
12	PROG1	Programming input 1 for gain adjust of bandpass filter
13	VDD	5V supply
14	PROG2	Programming input 2 for gain adjust of bandpass filter

PACKAGE



AVAILABILITY

Samples	available
Series	tbd.

BLOCK DIAGRAM