

## CCA1200 – Hall Latch IC Motor Driver

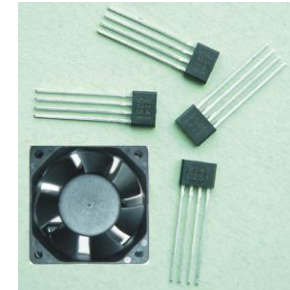
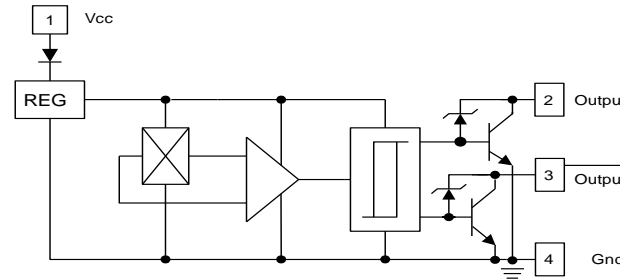
### Hall Effect Latch IC with Complementary Output Driver

#### FEATURES

- Optimized for brushless DC motors
- Wide supply voltage range from 3.2 V to 20 V
- Integrated diode for reverse polarity protection
- High output current up to 300mA for driving high loads
- Consistent parameter distribution
- High reliability 4 pin SIP-4L package

#### GENERAL DESCRIPTION

CCA1200 is a monolithic bipolar Hall effect latch IC with integrated Hall sensor and complementary output driver, designed for driving brushless DC motors. The device includes a protection diode for wrong chip reverse power connection, a temperature compensated bandgap regulator for wide range supply voltage application and a Hall sensor. The two complementary open-collector drivers supply the motor coils with large current up to 300mA. A power reset starts and restarts the device and automatic lock shutdown avoids coil burning after rotor-lock. CCA1200 is specified over a temperature range from -20°C to 85°C.



#### ABSOLUTE MAXIMUM RATINGS $T_a = 25^\circ\text{C}^*$

| Characteristic                        | Symbol    | Rating     | Unit |
|---------------------------------------|-----------|------------|------|
| Supply Voltage                        | $V_{cc}$  | 20         | V    |
| Reverse Vcc Polarity Voltage          | $V_{rcc}$ | - 20       | V    |
| Output ON Current --- Continuous Hold | $I_{out}$ | 300        | mA   |
| Peak (Start Up)                       |           | 400        |      |
| Package Power Dissipation             | $P_d$     | 500        | mW   |
| Storage Temperature Range             | $T_s$     | -65 to 150 | °C   |

#### ELECTRICAL CHARACTERISTICS

DC Operating Parameters  $T_a=25^\circ\text{C}$  to  $85^\circ\text{C}$ ,  $V_{cc}=3.2\text{V}$  to  $20\text{V}^*$

| Characteristic            | Symbol     | Test Conditions  | Min. | Typ. | Max. | Unit          |
|---------------------------|------------|--|------|------|------|---------------|
| Supply Voltage            | $V_{cc}$   | Operating range  | 3.2  | --   | 20   | V             |
| Output Saturation Voltage | $V_{sat}$  | $V_{cc}=14\text{V}$ , $I_{out}=300\text{mA}$                 | ---  | 0.3  | 0.6  | V             |
| Supply Current            | $I_{cc}$   | $V_{cc}=20\text{V}$ , Output Open                            | ---  | 18   | 25   | mA            |
| Output Leakage Current    | $I_{Leak}$ | $V_{cc}=14\text{V}$ , $V_{out}=14\text{V}$                   | ---  | <2   | 10   | $\mu\text{A}$ |
| Output Rise Time          | $T_r$      | $V_{cc}=14\text{V}$ , $R_L=820\ \Omega$<br>$C_L=20\text{pF}$ | ---  | 3.0  | 10   | $\mu\text{s}$ |
| Output Fall Time          | $T_f$      |  | ---  | 0.3  | 1.5  | $\mu\text{s}$ |
| Switch Time Differential  | $\Delta T$ |  | ---  | 3.0  | 10   | $\mu\text{s}$ |

#### MAGNETIC CHARACTERISTICS $T_a=25^\circ\text{C}$

| Characteristic | Rank | Symbol    | Min. | Typ. | Max. | Unit |
|----------------|------|-----------|------|------|------|------|
| Operate Point  | A    | $B_{op}$  | ---  | ---  | 60   | G    |
|                | B    | $B_{op}$  | ---  | ---  | 90   | G    |
| Release Point  | A    | $B_{rp}$  | -60  | ---  | ---  | G    |
|                | B    | $B_{rp}$  | -90  | ---  | ---  | G    |
| Hysteresis     | A    | $B_{hys}$ | ---  | 70   | 75   | G    |
|                | B    | $B_{hys}$ | ---  | ---  | ---  | G    |

\*) unless otherwise specified

Disclaimers:  
Creative Chips GmbH reserves the right to make changes without further notice to any products herein to improve reliability, function or design. Creative Chips does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent rights, nor the rights of others. These products are not authorized for use as critical components in life support devices or systems without the express written approval of Creative Chips.