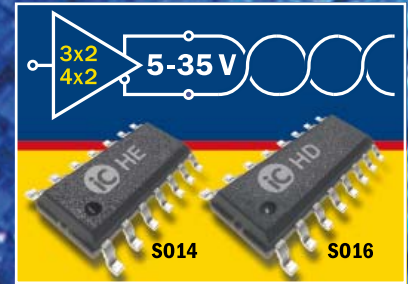


# iC-HE TRIPLE DIFFERENTIAL LINE DRIVER



The iC-HE is a three channel line driver with complementary outputs optimized for line impedances in the range of 75 Ω.

The push-pull output stages can deliver at least 200 mA from 24 V supply and are short-circuit-proof and current-limited, shutting down with excessive temperature or undervoltage condition.

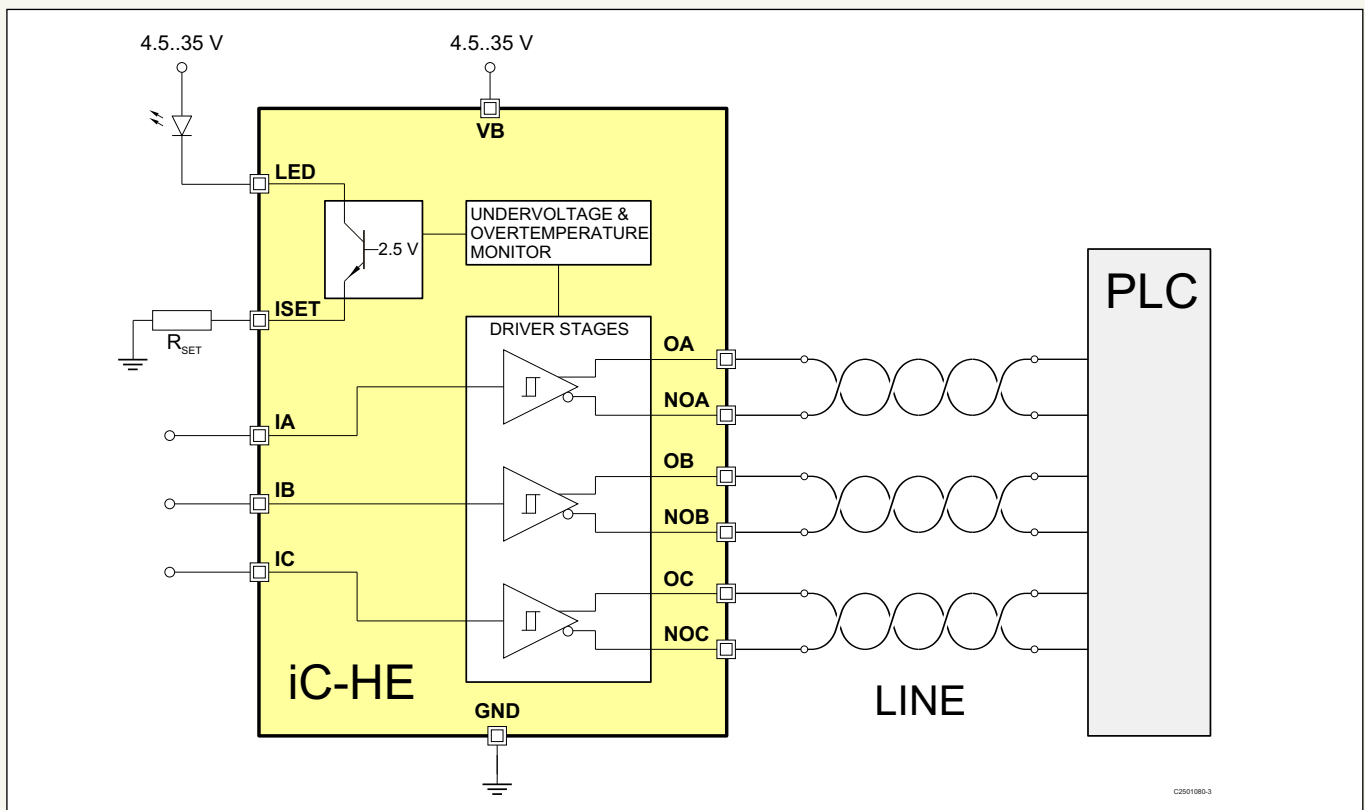
All inputs are compatible with CMOS and TTL levels. The device is protected against ESD.

## Applications

- 24 V control engineering
- Line driver in a PLC environment
- Linear and rotary encoders
- MR sensor systems

## Features

- Complementary short-circuit-proof push-pull driver stages for RS422 and 24 V applications up to 2 MHz
- S014N package pin-compatible to ET9600
- Integrated line adaptation for high signal quality at 24 V
- Moderate slew rate reduces EMI
- High driving capability of typically 200 mA at 24 V
- Output saturation of just 0.3 V at 40 mAdc
- Tristate function with excessive temperature
- TTL-/CMOS-compatible Schmitt trigger inputs, voltage proof to 40 V
- 4.5 V to 35 V single supply operation with low static power dissipation
- Operating temperature range from -25 °C to 125 °C (-40 °C is optional)
- Adjustable LED driver for up to 50 mA





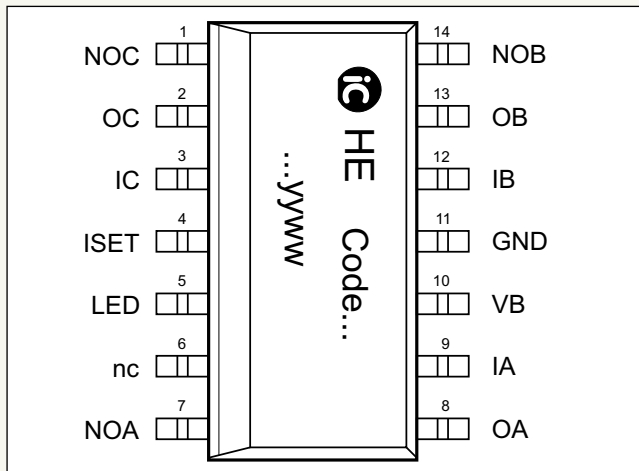
# iC-HE

## TRIPLE DIFFERENTIAL LINE DRIVER

The emitter and collector outputs of an on-chip NPN transistors are available for driving an external light emitting diode. The base of the transistor is connected to an internal reference voltage of 2.5 V.

The collector current at pin LED can be controlled by the value of the resistor connected between ISET and ground.

### Pin Configuration S014N



### Pin Functions

No.	Name	Function
1	NOC	Inverted Output Driver C
2	OC	Output Driver C
3	IC	Input Driver C
4	ISET	LED Current Setting
5	LED	LED Current Output
6	n.c.	-
7	NOA	Inverted Output Driver A
8	OA	Output Driver A
9	IA	Input Driver A
10	VB	Supply Voltage
11	GND	Ground
12	IB	Input Driver B
13	OB	Output Driver B
14	NOB	Inverted Output Driver B

### Key Specifications

General	
Supply Voltage	4.5 V to 35 V
Supply Current	typ. 2.6 mA
Output Short-Circuit Duration	Indefinite
Operational Temperature Range	-25 °C to + 125 °C

Driver Outputs	
Saturation Voltage low (@ 40 mA)	typ. 0.2 V, 0.5 V max.
Saturation Voltage high (@ 40 mA)	typ. 0.3 V, 0.7 V max.
Short Circuit Current high/low (VB = 30 V)	500 mA
Output Impedance (VB = 24 V)	typ. 75 Ω
Slew Rate low/high (CL = 100 pF)	400 V/μs
Propagation Delay	typ. 75 ns, 200 ns max.

Error Detection	
Undervoltage Detection Threshold	typ. 3.5 V
Excessive Temperature Shutdown	typ. 150 °C

LED Driver	
Saturation Voltage NPN @ 50 mA @ 1 mA	typ. 0.55 V, 1.2 V max. 0.4 V max.
Voltage at ISET @ 1 mA	typ. 1.93 V, 2.2 V max.
Temperature Coefficient of V(ISET)	typ. 2.0 mV/K

This preliminary information is not tantamount to a guarantee of device characteristics. All rights to technical changes reserved.