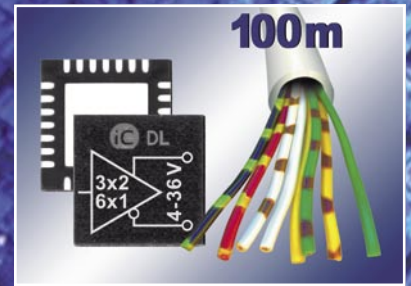


iC-DL

3-CHANNEL DIFFERENTIAL LINE DRIVER



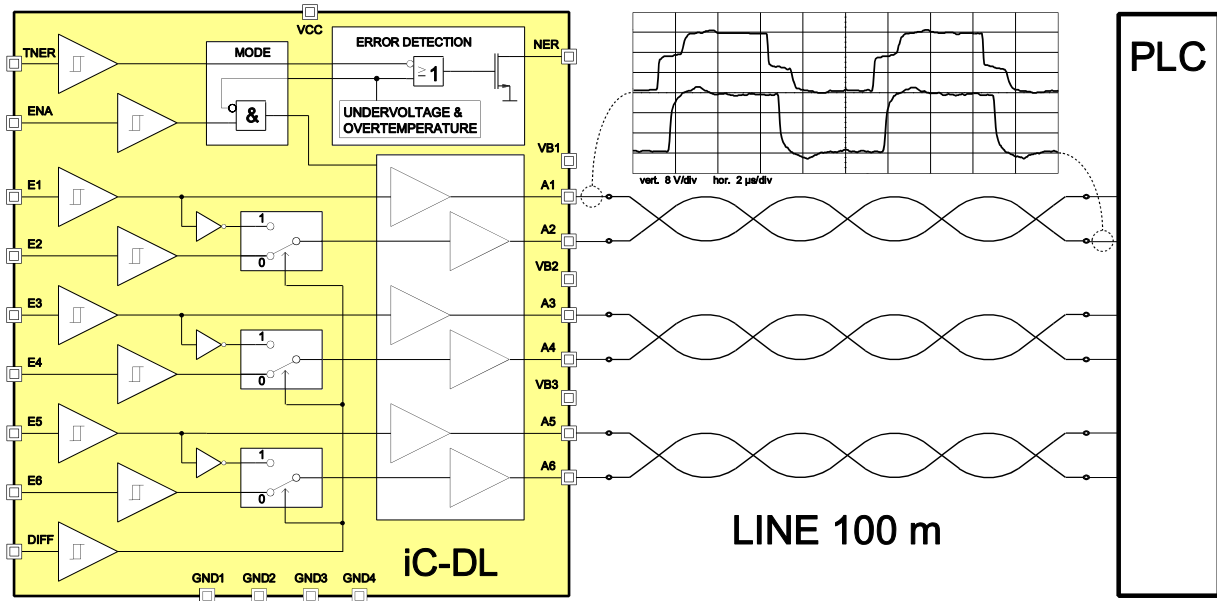
iC-DL is a fast line driver with six independent channels and impedance adaptation for 75 Ω lines. Channels can be paired for differential 3-channel operation. The push-pull output stages have been designed to cope with a high driver power of typically 300 mA from 24 V; they are current-limited and short-circuit-proof, shutting down with excessive temperature.

Applications

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

Features

- 6 current-limited push-pull drivers
- Differential 3-channel operation
- Power supply range from 4 to 36 V
- Integrated 75 Ω line adaptation
- Low output saturation voltage
- Compatible with TIA/EIA standard RS-422
- Tristate switching enables use in buses
- Short switching times and high slew rates
- Schmitt trigger inputs compatible with TTL and CMOS levels, voltage-proof up to 36 V
- Thermal shutdown with hysteresis
- open-collector error output with thermal shutdown or undervoltage



iC-DL 3-CHANNEL DIFFERENTIAL LINE DRIVER

All inputs are CMOS- and TTL-compatible and protected against ESD. A high signal at input DIFF switches the three pairs of channels to differential mode, deactivating inputs E2, E4 and E6.

For bus applications the output stages can be switched to high impedance using the ENA input.

iC-DL monitors both supply voltages VB and VCC and the chip temperature, switching all output stages to high impedance in the event of error. Open collector output NER reports the above errors on the connected line. The error input TNER can be linked to the message outputs of other ICs to report a system error message.

Pin Functions

No.	Name	Pin Function
1	E1	Input Channel 1
2	E2	Input Channel 2
3	E3	Input Channel 3
4	n.c.	
5	E4	Input Channel 4
6	E5	Input Channel 5
7	E6	Input Channel 6
8	VCC	+4 to +5.5 V
9	n.c.	
10	TNER	Error Input
11	NER	Error Output
12	A6	Output Channel 6
13	GND4	Ground
14	VB3	+4 to +36 V Power Supply
15	A5	Output Channel 5
16	GND3	Ground
17	A4	Output Channel 4
18	VB2	+4 to +36 V Power Supply
19	A3	Output Channel 3
20	GND2	Ground
21	A2	Output Channel 2
22	VB1	+4 to +36 V Power Supply
23	GND1	Ground
24	A1	Output Channel 1
25	n.c.	
26	ENA	Enable Input
27	n.c.	
28	DIFF	Differential Mode Select Input

Key Specifications

General	
Driver Supply Voltage	+4 to +36 V
Input Supply Voltage	+4 to +5.5 V
Output Current	+/-800 mApk, +/-30 mAdc
Output Short-Circuit Duration	Indefinite
Operational Temperature Range	-40 °C to +125 °C

Driver Outputs A1..6	
Saturation Voltage high/low	max. 0.2 V @ IL = 10 mA max. 0.4 V @ IL = 30 mA typ. 0.5 V @ IL = 50 mA
Short Circuit Current	max. 800 mA
Output Impedance	typ. 75 Ohm @ 24 V
Slew Rate high	typ. 200 V/μs @ 100 pF
Slew Rate low	typ. 200 V/μs @ 100 pF
Propagation Delay	max. 400 ns
Delay Skew	max. 100 ns

Error Output	
Undervoltage Detection Threshold	min. 3 V @ VB/VCC
Thermal Shutdown Threshold	min. 145 °C
Saturation Voltage low	0.4 V @ 5 mA
Short-Circuit Current	max. 20 mA

Pin Configuration QFN28 5 x 5 mm²

