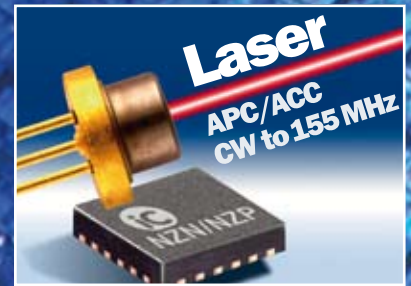


# iC-NZN, iC-NZP

## ALL-PURPOSE LASER DIODE DRIVERS



Laser diode pulse drivers iC-NZN and iC-NZP allow CW operation of laser diodes and spike-free switching with defined current pulses up to 155 MHz.

The optical output power of the laser diode is set up by means of an external resistor (RMD/PMD). For laser current control without a monitor diode, the laser current monitor at pin IMON is utilised.

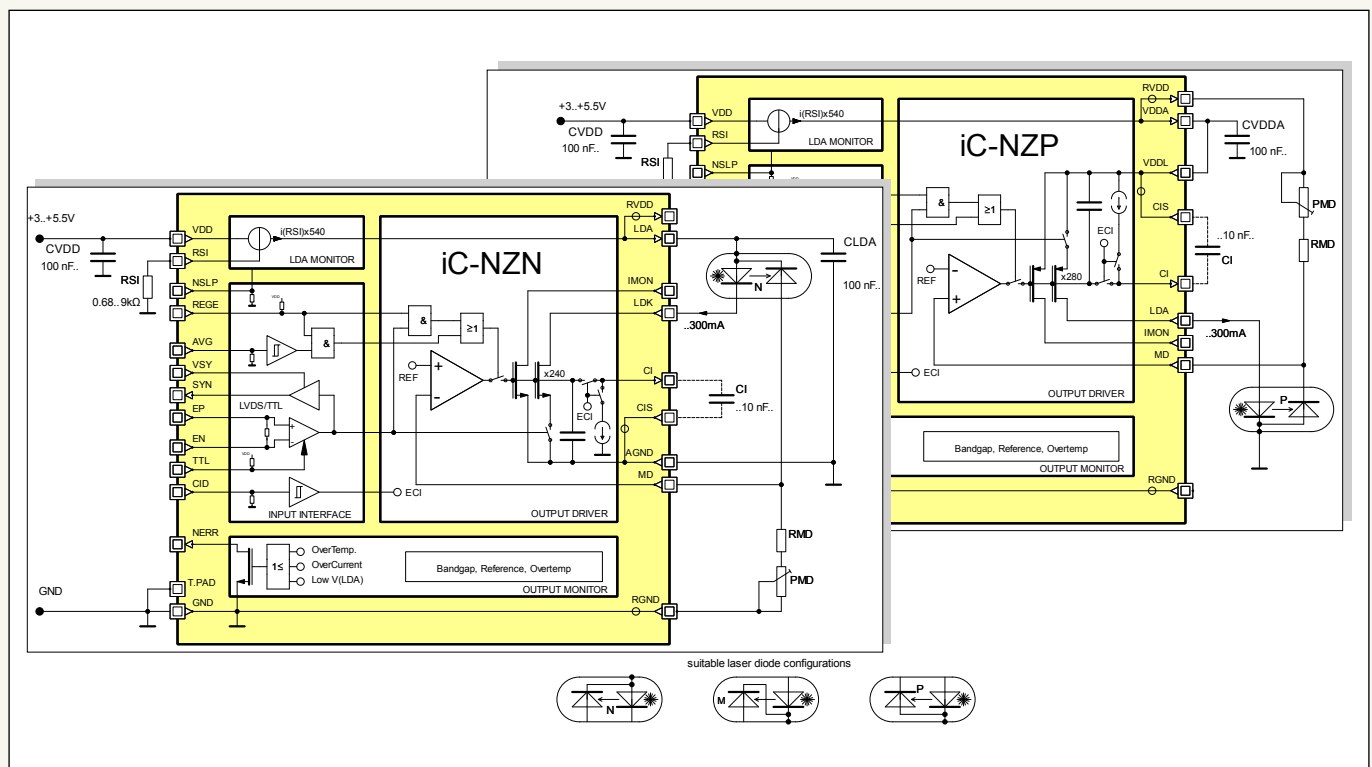
An averaging current monitor can be set by means of an external resistor at pin RSI. When the current limit is reached, overcurrent is signalled at NERR and the current from pin LDA is limited to the pre-set value. Setting pin NSLP low, the iC enters a low consumption sleep-mode ( $< 50 \mu\text{A}$  typ.).

### Applications

- Pulsed and CW laser diode modules
- Laser pointers
- Laser levels
- Bar-code readers
- Distance measurement

### Features

- Peak value controlled laser diode driver for operation from CW up to 155 MHz
- Spike-free switching of laser currents of up to 300 mA
- Setting of laser power (APC) via external resistor
- Optional current control (ACC)
- Laser current limitation
- LVDS/TTL switching input with TTL monitor output
- Low current consumption sleep-mode  $< 50 \mu\text{A}$
- Safety shutdown with overtemperature
- Error signal output with overtemperature, undervoltage and overcurrent
- All current LD types can be used (N/P/M configurations)
- Blue laser diodes supported (iC-NZN only)
- Fast soft-start
- Strong suppression of transients with small external capacitors





# iC-NZN, iC-NZP

## ALL-PURPOSE LASER DIODE DRIVERS

### Pin Functions

iC-NZN No.	iC-NZP No.	Name	Function
1	1	VDD	Power Supply
2	18	AVG	Enable Averaging Control
3	3	MD	APC setup, monitor input
4	4	IMON	Laser Current Monitor
5	-	CID	Enable Pulldown Current at CI
-	5	NCID	Disable Pulldown Current at CI
6	6	EP	Positive LVDS/TTL input
7	7	EN	Negative LVDS input
8	8	TTL	Enable TTL input
9	9	VSY	Sync Output Supply Voltage
10	10	SYN	Sync Output
11	11	RGND	Reference Ground
12	12	RVDD	Reference (P-type LD)
13	-	LDK	Laser Diode Cathode
14	-	AGND	Analog Ground
15	15	CIS	Power Control Capacitor sense
16	14	CI	Power Control Capacitor
-	16	VDDL	Laser Power Supply
17	13	LDA	Laser Diode Anode
-	17	VDDA	Analog Power Supply
19	19	RSI	Current Monitor Setup
20	20	REGE	Control Enable
21	2, 21	GND	Ground
22	22	NSLP	Sleep Mode
23	23	NERR	Error Output
18, 24	24	n/c	

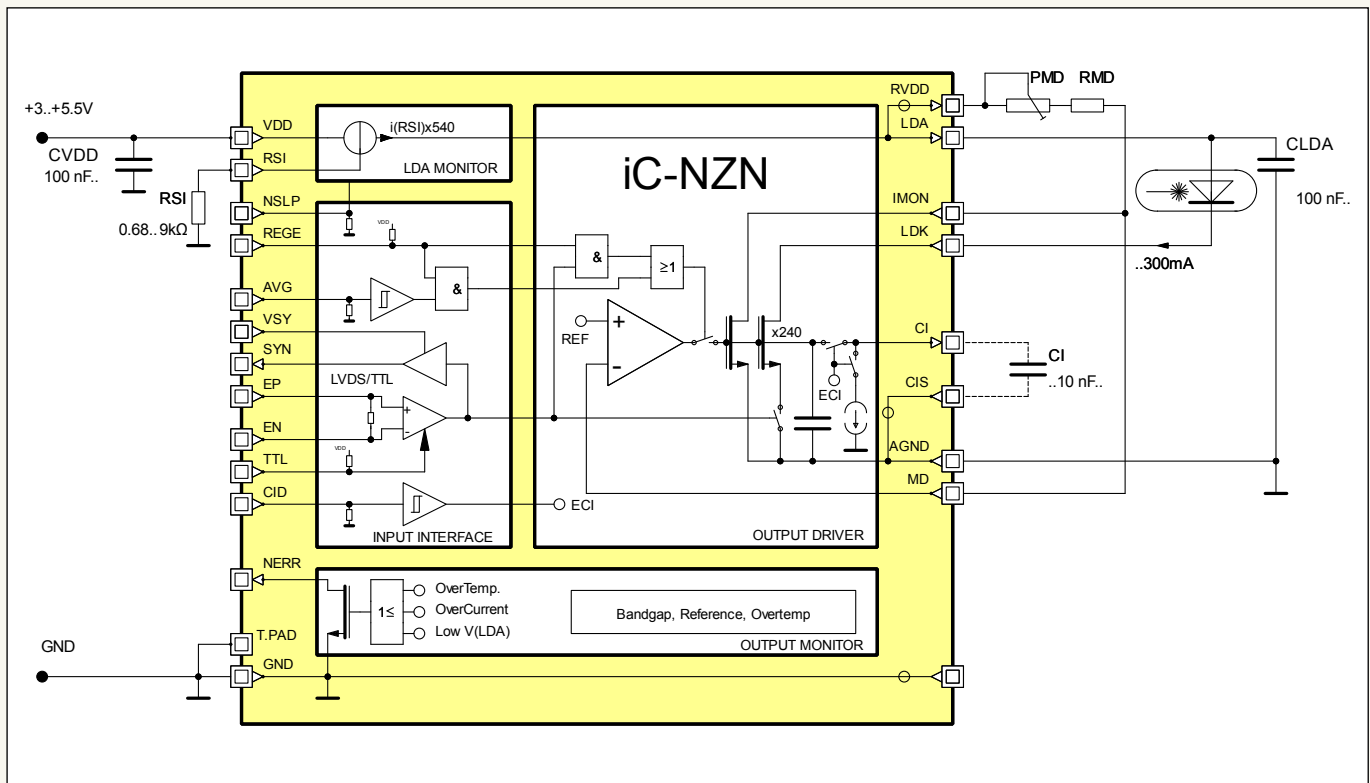
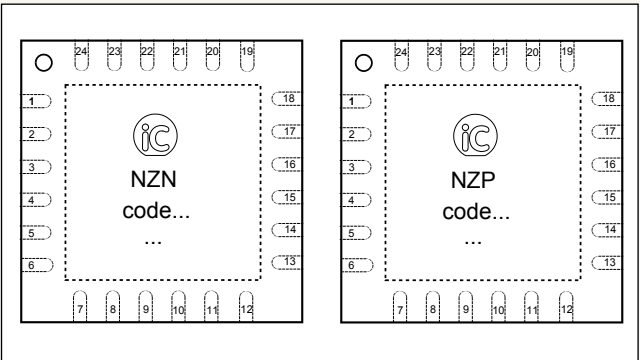
### Key Specifications

General	
Permissible Supply Voltage	3 to 5.5 V
Laser Drive Current	0.5 to 300 mA

Laser Driver	
Saturation Voltage I() = 300 mA, VDD = 4.5...5.5 V	3 V max.
I() = 100 mA, VDD = 4.5...5.5 V	2 V max.
I() = 60 mA, VDD = 3...3.5 V	1.3 V max.
Laser Current Rise/Fall Time	1.5 ns max.
Propagation Delay	10 ns max.

Monitor Current in IMON	
iC-NZN	typ. 1/240 I(LDK)
iC-NZP	typ. 1/280 I(LDA)

### Pin Configuration QFN24 4x4 mm<sup>2</sup>



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