

# iC-NZ EVAL NZ1D

## EVALUATION BOARD DESCRIPTION



Rev B2, Page 1/4

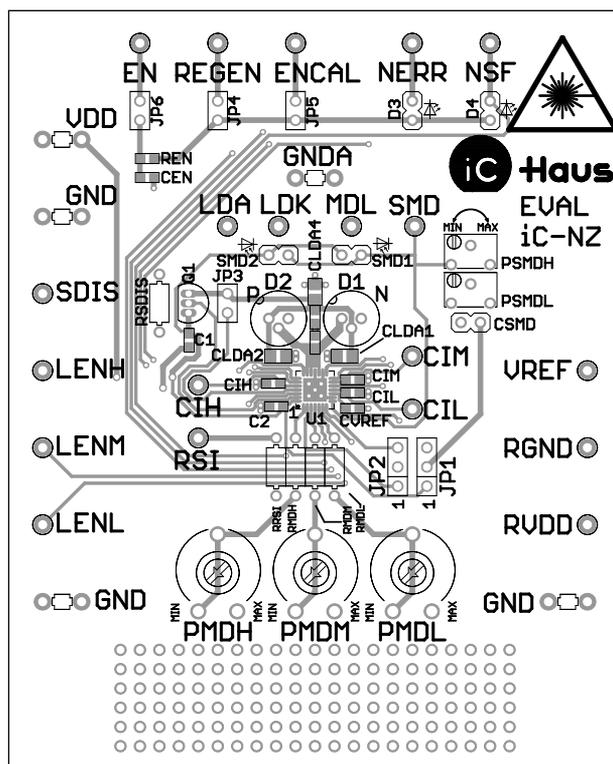
### ORDERING INFORMATION

Type	Order Designation	Description and Options
Evaluation Board	iC-NZ EVAL NZ1D	iC-NZ Evaluation Board

### BOARD NZ1D

(size 100 mm x 80 mm)

### TERMINAL DESCRIPTION



VDD	+5 V Supply Voltage
GND	Ground
SDIS	External Current Limitation
LENH	Enable Laser Channel Hi
LENM	Enable Laser Channel Mid
LENL	Enable Laser Channel Lo
RVDD	Reference (P-type laser diodes)
RGND	Internal Ground
VREF	Reference Voltage
NSF	No-Safety Signal
NERR	Error Output (low active)
ENCAL	Enable Calibration
REGEN	Regulator Enable
EN	Enable Input
GNDA	Analog Ground
LDA	Anode Laser Diode
LDK	Cathode Laser Diode
MDL	APC Setup, Monitor Input Lo
SMD	Safety Monitor Diode
RSI	Current Monitor Setup

Figure 1: Component side

# iC-NZ EVAL NZ1D

## EVALUATION BOARD DESCRIPTION



Rev B2, Page 2/4

### RELATED DOCUMENTS

- iC-NZ Data Sheet - Specification -
- <http://www.ichaus.de/product.php?prod=iC-NZ>

### SCHEMATIC

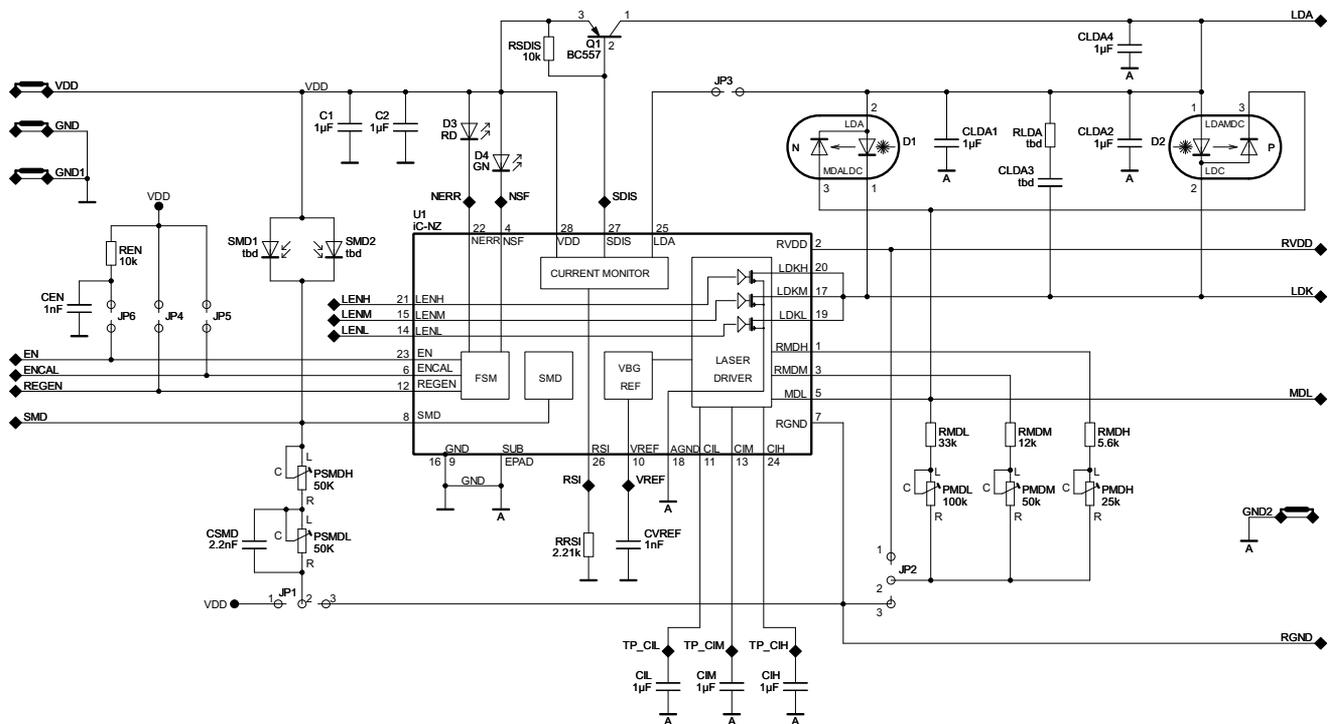


Figure 2: Circuit diagram including optional components

# iC-NZ EVAL NZ1D

## EVALUATION BOARD DESCRIPTION



Rev B2, Page 3/4

### JUMPER DESCRIPTION

Jumper	Jumper Configuration	Comments
JP1, JP2	1-2 (JP1) & 1-2 (JP2)	No-Safety mode for P-type laser diode (ENCAL level: HIGH)
	<b>1-2 (JP1) &amp; 2-3 (JP2)</b>	No-Safety mode for N-type laser diode (ENCAL level: HIGH)
	2-3 (JP1) & 1-2 (JP2)	Safety mode for P-type laser diode (ENCAL level: LOW)
	2-3 (JP1) & 2-3 (JP2)	Safety mode for N-type laser diode (ENCAL level: LOW)
JP3	<b>bridged</b>	Laser supply
JP4	<b>bridged</b>	Enable Regulator
JP5	<b>bridged</b>	Enable No-Safety mode
JP6	bridged	Enable iC-NZ

**Note:** Highlighted jumper configurations indicate shipment setup.

### ASSEMBLY PART LIST

Device	Value (typical)	Comment
U1	iC-NZ	Fail-Safe Laser Diode Driver IC
C1	1 uF	Blocking capacitor (ceramic)
C2	1 uF	Optional: Blocking capacitor (ceramic)
CIL	1 uF	Low channel control capacitor (SMT 0603, ceramic)
CIM	1 uF	Medium channel control capacitor (SMT 0603, ceramic)
CIH	1 uF	High channel control capacitor (SMT 0603, ceramic)
CLDA	1 uF	LDA backup capacitor (SMT 0603, ceramic)
CSMD	2.2 uF	Capacitor for peak power monitoring (ceramic)
CVREF	1 uF	Reference voltage capacitor (Ceramic)
CEN	1 nF	
JP7, JP8	0 $\Omega$	Ground connect
REN	10 k $\Omega$	
D1		N-type laser diode
D2		P-type laser diode
SMD1		Optional: Safety monitor photo diode N
SMD2		Optional: Safety monitor photo diode P
JP1, JP2		See jumper configuration
JP3 - JP6		See jumper configuration
D3	LED	Error indicator LED; on = error
D4	LED	No-Safety indicator LED; on = safety mode

# iC-NZ EVAL NZ1D

## EVALUATION BOARD DESCRIPTION



Rev B2, Page 4/4

Device	Value (typical)	Comment
PMDH	25 k $\Omega$	High channel power setup
PMDM	50 k $\Omega$	Medium channel power setup
PMDL	100 k $\Omega$	Low channel power setup
PSMDH	50 k $\Omega$	Peak power monitor level adjustment (SMD multi-turn potentiometer)
PSMDL	50 k $\Omega$	Average power monitor level adjustment (SMD multi-turn potentiometer)
RMDH	5.6 k $\Omega$	High channel level limiting resistor
RMDM	12 k $\Omega$	Medium channel limiting resistor
RMDL	33 k $\Omega$	Low channel limiting resistor
RRSI	2.21 k $\Omega$	Current adjustment resistor
Q1	BC557	Optional: External laser current control from SDIS (PNP transistor)
RSDIS	10 k $\Omega$	Optional: Q1 emitter-base resistor

### REVISION HISTORY

Rev	Notes	Pages affected
A3	Initial version	
A4	Values for CIH, CIL, CIM, PSMDH, PSMDL, RMH, Start-up hints	All
B1	PCB re-design	All
B2	PCB optimisation	1-2

iC-Haus expressly reserves the right to change its products and/or specifications. An Infoletter gives details as to any amendments and additions made to the relevant current specifications on our internet website [www.ichaus.de/infoletter](http://www.ichaus.de/infoletter); this letter is generated automatically and shall be sent to registered users by email.

Copying – even as an excerpt – is only permitted with iC-Haus approval in writing and precise reference to source.

iC-Haus does not warrant the accuracy, completeness or timeliness of the specification on this site and does not assume liability for any errors or omissions in the materials. The data specified is intended solely for the purpose of product description. No representations or warranties, either express or implied, of merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information/specification or the products to which information refers and no guarantee with respect to compliance to the intended use is given. In particular, this also applies to the stated possible applications or areas of applications of the product.

iC-Haus conveys no patent, copyright, mask work right or other trade mark right to this product. iC-Haus assumes no liability for any patent and/or other trade mark rights of a third party resulting from processing or handling of the product and/or any other use of the product.

As a general rule our developments, IPs, principle circuitry and range of Integrated Circuits are suitable and specifically designed for appropriate use in technical applications, such as in devices, systems and any kind of technical equipment, in so far as they do not infringe existing patent rights. In principle the range of use is limitless in a technical sense and refers to the products listed in the inventory of goods compiled for the 2008 and following export trade statistics issued annually by the Bureau of Statistics in Wiesbaden, for example, or to any product in the product catalogue published for the 2007 and following exhibitions in Hanover (Hannover-Messe).

We understand suitable application of our published designs to be state-of-the-art technology which can no longer be classed as inventive under the stipulations of patent law. Our explicit application notes are to be treated only as mere examples of the many possible and extremely advantageous uses our products can be put to.