

iC-NZ EVAL NZ1D EVALUATION BOARD DESCRIPTION

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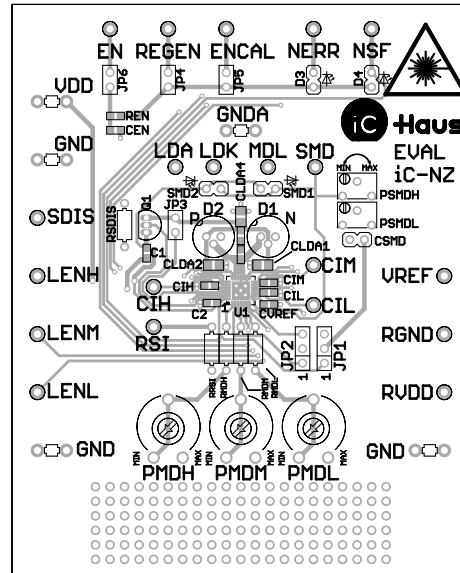
ORDERING INFORMATION

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
GND _A	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

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RELATED DOCUMENTS

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

SCHEMATIC

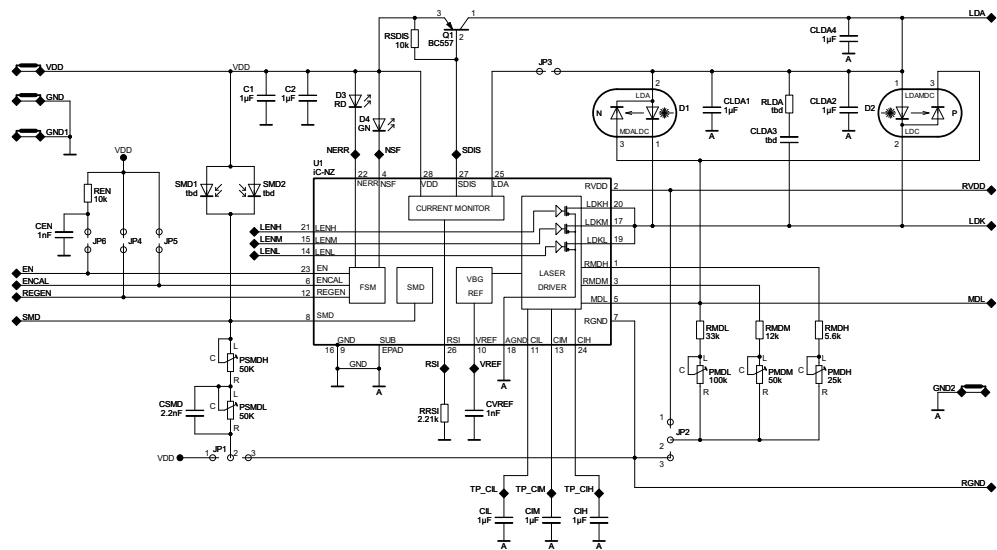


Figure 2: Circuit diagram including optional components

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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)
	1-2 (JP1) & 2-3 (JP2)	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	bridged	Laser supply
JP4	bridged	Enable Regulator
JP5	bridged	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 Ω	Ground connect
REN	10 k Ω	
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

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

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