iC-WK DEMO WK4D
DEMO BOARD DESCRIPTION

iC-Haus

ORDERING INFORMATION

Type	Order Designation	Description/Options
iC-WK Demo	WK4D DEMO	Evaluation boards for iC-WK, iC-WKL and
iC-WKL Demo	WKL4D DEMO	iC-WKN; easy to set up for the booster circuit
iC-WKN Demo	WKN4D DEMO	from the iC-WK/L Application Notes

BOARD WK4D

(size 100 mm x 80 mm)

Figure 1: Component side of WK4D board

TERMINAL DESCRIPTIONS

Name	Function
VCC	Supply Voltage
GND	Ground
CI	Capacitor for Power Control
AGND	Reference Ground for CI, RM
EN	Switching Input for Booster Circuit
MDK	Monitor Input for P-Type Laser Diodes
MDA	Monitor Input for N/M-Type Laser Diodes
LDK	Driver Output
LDA	Laser Supply/Positive Supply Terminal of Booster Circuit
CIQ	Internal Ground of iC-WK/WKL with Booster Circuit
RVN	Sense Resistor for Overcurrent Shutdown of Booster Circuit
VN	Ground Terminal of Booster Circuit

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The iC-WK/L/N evaluation boards come pre-assebled for use with the RLD-65NE laser diode. The default assembly and current path is highlighted in the below schematic diagram. For hints on dimensioning and other configurations (eg. an external booster circuit) see the the application notes on iC-WK/L, available as a separate document.
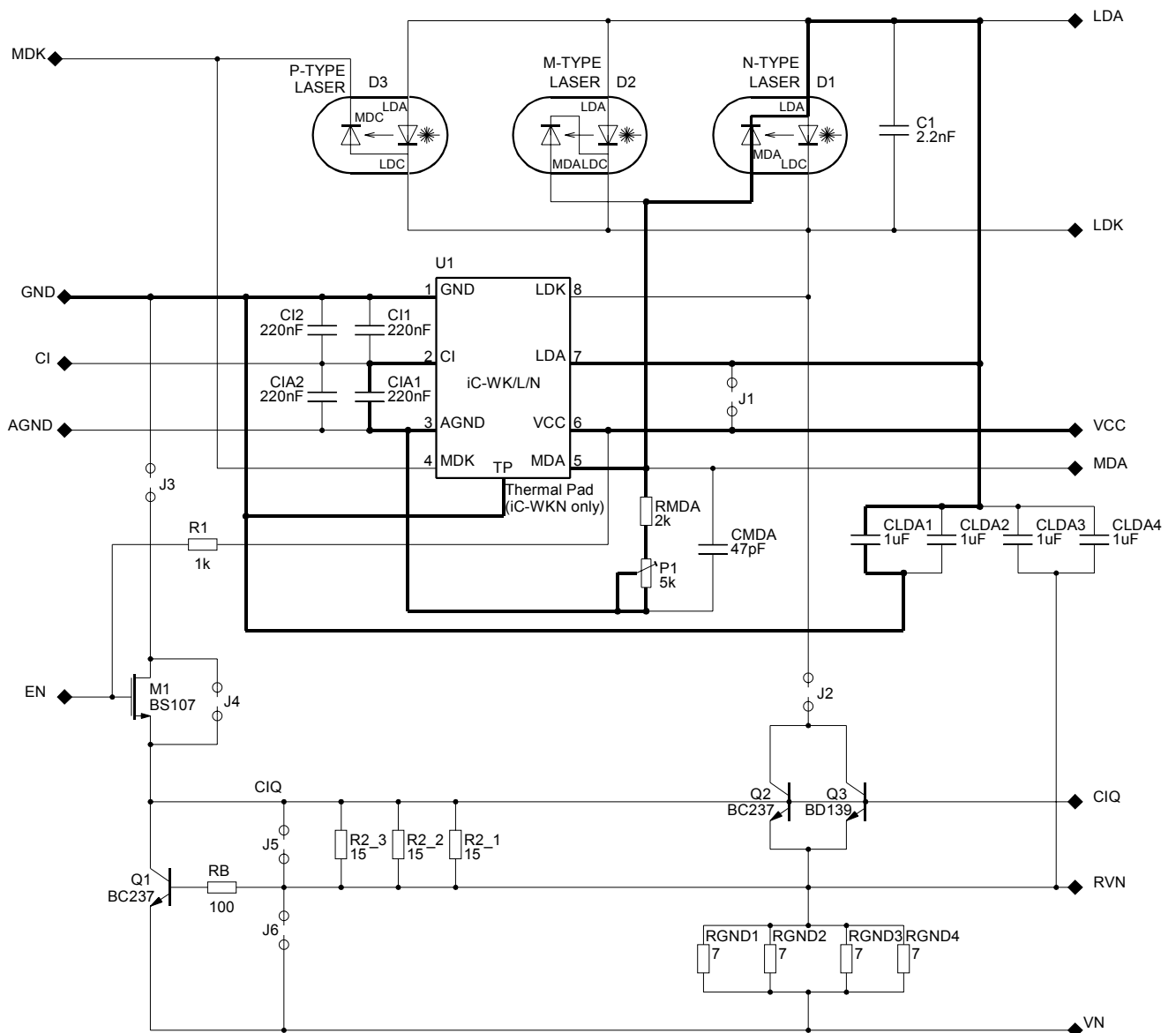

Figure 2: Schematic diagram of WK4D board (default configuration highlighted).

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ASSEMBLY PART LIST

Device	Value (typ)	Comment
C1	2.2 nF	optional: ESD protection for the laser diode; use with longer leads to the laser diode
CI#, CIA#	100 nF	power control capacitors
CLDA#	1 µF	blocking capacitors; use CLDA3 or CLDA4 with booster circuit
CMDA	47 pF	optional: blocking capacitor, reduces sensivity to external interferences; P1 + RMDA has to be limited to 25kΩ, increase CI/CIA to ≥220nF and CLDA to 2µF; check for oscillation at pin MDA, increase CI/CIA if necessary
D1		n-type laser diode
D2		m-type laser diode
D3		p-type laser diode
J1	open	short for laser currents > 70mA (iC-WK/L only)
J2	open	short for booster
J3	open	short for booster
J4	open	open to activate M1 (with booster)
J5	open	
J6	open	
M1	BS107	optional: switching transistor
P1	5kΩ	trimmer to set the laser output power
Q1	BC237	optional: overcurrent shutdown for booster
Q2	BC237	optional: booster
Q3	BD139	optional: booster for high currents
R1	1kΩ	optional: pull-up for M1
R2	15Ω	optional: sets the laser current current iC-WK/L takes when the booster is used; R2 = Ube(Q2 or Q3) / 45 mA
RB	100Ω	optional: use with Q1
RGND#	open	optional: sets the overcurrent shutdown threshold (Ioff) of the booster; RGND = Ube(Q1) / Ioff
RMDA	2kΩ	sets the maximum output power (P1 turned to 0 Ω)
U1	iC-WK/L/N	