



Description

QCW500-05-xx-CC is the low current model of a linear regulated diode driver series to provide short pulsed to DC current into laser diodes like VCSELs or single emitter diode modules. The linear regulation allows not only fast pulsed operation, but also analog modulation at highest bandwidths. Per standard the modulation bandwidth is limited to 100 kHz, but lower or higher analog input filter bandwidth is available on request. Shortest rise time of down to 50 ns allow also for high speed analog modulated or pulsed operation. Rise/fall time adaption to meet specific setups available on request.

Besides standard industrial use, its low current noise makes it also especially suitable for sensitive laboratory applications.

Full current controlled rise/fall times protect the diode load against any over current/overshots.

By external adaption of the driver input voltage level, power losses and pulse performance can be optimized to meet individual application demands.

Further available models:

- QCW500-10-50, up to 10 A, ca. 100 .. 500 ns rise/fall time
- QCW500-20-50, up to 20 A, typ. 1 μ s rise/fall time
- Custom models / output terminals / load cables on request

Features

- Output current up to 5 A
- Controlled rise/fall time typ. 50 ns ^{*1)}
- Pulse width 100 ns to DC
- Analog modulation to 100 kHz ^{*2)}
- Compliance voltage 0 .. 50 V ^{*5)}
- Very low current noise
- Especially suitable for fiber laser amplifiers and burn-in systems with multiple single emitter or VCSELs strings

Specifications

Output current	max. 5 A ^{*3)}
Compliance voltage	0 .. 50 V at 5 A ^{*5)}
Rise/fall time	typ. 50 ns
Current programming	0 - 10 V = 0 - 5 A (0.5 A/V) into 20 k Ω (SSMB)
Setpoint accuracy	Offset \pm 10 mA \pm 1.5 % of setpoint value
Monitoring I	$I_{mon} = 1$ V/A into 1 M Ω 0.2 V/A into 50 Ω
Monitoring U	$U_{mon} = 0.1$ V/V (real time), into 1 M Ω
Monitoring accuracy	typ. \pm 2 % (of set-point within specified range) t.b.d.
Protective features	Soft start, transient protection, over temp., UVL
Control interface	Connector JST 6pin, S6B-PH SSMB for analog programming input ca. 1.5 W + $(U_{in} - U_{out}) * I_{out}$ (total avg. max. 25 W)
Power dissipation	+12 V, max. 150 mA
Supply (aux)	Allowed range 0 .. 55 V DC ^{*4)}
Supply (main)	typ. 500 μ F
Input (main) capacity	-20 $^{\circ}$ C .. +50 $^{\circ}$ C (non condensing)
Environment	Conductively via baseplate, max. power dissipation 25 W
Cooling	max. +50 $^{\circ}$ C
Baseplate temperature	max. +50 $^{\circ}$ C
Main connectors in/out	Screw terminals M3, max. 5 mm depth
Size (LxWxH)	80 x 40 x 37 mm, PCB 60 x 40 mm Baseplate mounting via M3 through holes

^{*1)} For optimized user setups down to 100 ns available

^{*2)} For optimized user setups up to 500 kHz available

^{*3)} Specified output current range 0.25 .. 5 A

^{*4)} $(U_{in} - U_{out}) \leq 5$ V and $(U_{in} - U_{out}) * I_{avg} < 25$ W

^{*5)} Higher input/output voltage to 100 V or 200 V on request

