



Description

QCW500-20-50-CC is the high 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.

Per standard rise time control is attenuated to ca. 1 μ s to allow for operation with non-optimized cable setups. Down to 500 ns rise/fall time is 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:

QCW500-05-xx, up to 5 A, down to 50 ns rise/fall time

QCW500-10-50, up to 10 A, typ. 500 ns rise/fall time

Features

- Output current up to 20 A
- Controlled rise/fall time typ. 500 ns .. 1 μ s^{*1)}
- Pulse width 1 μ s to DC
- Analog modulation to 100 kHz^{*2)}
- Compliance voltage 0 .. 50 V
- 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. 20 A ^{*3)}
Compliance voltage	0 .. 50 V at 20 A
Rise/fall time	typ. 500 ns .. 1 μ s
Current programming	0 - 10 V = 0 - 20 A (1 A/V) into 20 k Ω (SSMB)
Setpoint accuracy	Offset \pm 50 mA \pm 1.5 % of setpoint value
Monitoring I	$I_{mon} = 0.25$ V/A into 1 M Ω 0.05 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
Power dissipation	ca. 1.5 W + $(U_{in} - U_{out}) * I_{out}$ (total avg. max. 25 W)
Supply (aux)	+12 V, max. 150 mA
Supply (main)	Allowed range 0 .. 55 V DC ^{*4)}
Input (main) capacity	typ. 500 μ F
Environment	-20 $^{\circ}$ C .. +50 $^{\circ}$ C (non condensing)
Cooling	Conductively via baseplate, max. power dissipation 25 W
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 1 .. 20 A

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

