

QCW Mini-Stacked Array QD-Q1S09-D(n) / QD-Q1R12-D(n)

DESCRIPTION

QD-Q1S09-D(n) or QD-Q1R12-D(n) are conductively cooled laser diode stacked arrays with a specific design adapted for the realization of highly compact laser diode source.

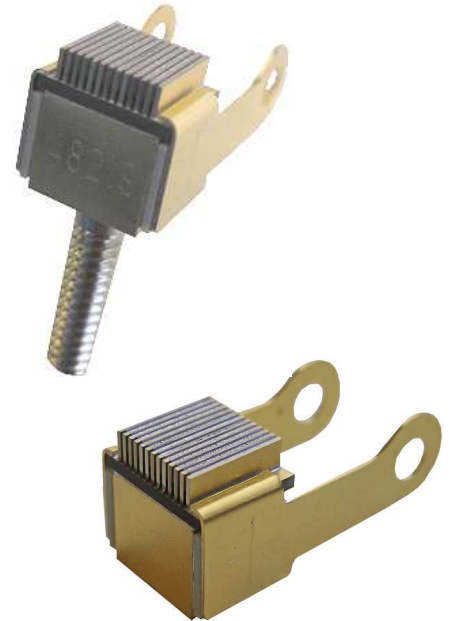
These Stacks are designed to integrate reduced size diode bars allowing an emission of square shape with high optical power density:

- with 9 mini-bars 3mm → ~3 X 3 mm² emission
- with 12 mini-bars 5 mm → 5 X 5 mm² emission

Heat-sink has been adapted for such mini-bars with a small foot-print and qualified for stable operation over large temperature range.

Option is proposed with mini-bars of different wavelengths (to broaden the optical spectrum) which is well appropriate for operation under environment with non stabilized temperature.

This compact stack is well adapted to be tightly packed in customer-designed manifolds for optimized small size and efficient diode pumped solid state lasers.



MAIN FEATURES

- QCW operation
- Highly compact design
- Square emission area
- Possibility of Multi-color emission and collimation
- High operating Temperature range
- Mechanically robust, shock and vibration qualified
- Also available with A, B, G, K or any other QLD packaging

SPECIFICATIONS

PARAMETERS @ 25 °C	QD-Q1S09-D(n)	QD-Q1R12-D(n)	Units
Number of Mini-Diode bars	9	12	
Pitch between diode bars	330, 400 and 500		µm
Mini-bar width	3	5	mm
Emitting area	3.2 X 3	4.4 X 5	mm ²
QCW Optical Power	900	2000	W
Operating current	110 Typ. (< 120)	170 Typ. (< 190)	A
Operating voltage	<18	<24	V
Total efficiency	56% @ 808 nm, 62% @ 940/980 nm		%
Wavelength's (n = number of different wavelengths)	790 to 980 (n = 1 to 4)		nm
Wavelength variation with Temperature	0.26		nm / °C
Beam divergence (FWHM)	8 X 36		deg.

Note :

- Standard Polarisation: TM or TE mode @ 808 nm, TE @ 9xx nm
- Spectral width (for single wavelength) is ≤ 3 nm FWHM
- Standard tolerance on wavelength is +/- 3nm
- Possibility of pitch between diode bars of 500µm
- Specifications are for nominal lifetime > 1. 10⁸ pulses @ +25°C and > 0.5 10⁸ pulses @ +75°C (for 200µs pulse width)

Quantel Laser Diodes reserves the right to change specifications without prior notice

ABSOLUTE MAXIMUM RATINGS

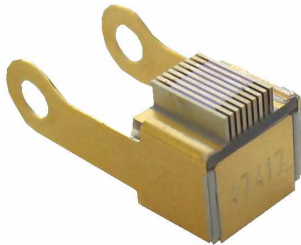
PARAMETERS	QD-Q1S09-D(n)	QD-Q1R12-D(n)	Units
Pulse width	500		µs
Maximum duty cycle	1	0.5	%
Reverse voltage	3		Volt
Operating temperature	-40 to +75		°C
Storage temperature	-55 to +85		°C

Note : Operation at temperature below dew point requests to use dry N2 environment

PACKAGE SPECIFICATIONS

- dimensions are in mm
- standard tolerances are ± 0.2 mm

QD-Q1yzz-D



This Mini-stack "D" type can be proposed with a total number of diode bars:

- ❖ 9 mini-bars of 3mm
- ❖ 12 mini-bars of 5mm

Other mechanical designs are available

