

TH-Q1210-B / TH-Q1310-B / TH-Q1410-B

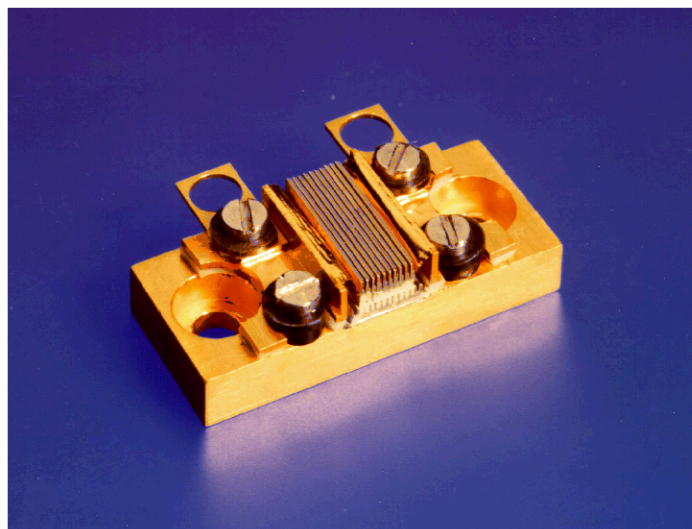
600W / 800W / 1000W QUASI-CW STACKED ARRAYS

DESCRIPTION

TH-Q1X10-B are high optical power laser diode sources. These products are based on 10 highly efficient 1cm linear bar arrays which are piled up to form a stack operating in Quasi-CW mode. The 'X' in TH-Q1X10-B characterises the optical power of each bar. For X = 2, 3, 4 respectively, peak optical power of the stack are 600W, 800W, 1000W with power densities from 1.7 to 2.8kW/cm².

The quality of the process of these laser diodes leads to longer lifetime and improved reliability. The TH-Q1X10-B stacked arrays are therefore ideal for different applications: pumping solid state lasers, illuminators,...

Assembly in a compact and rugged package allows easy connection to a heat exchanger to get good temperature control.



MAIN FEATURES

- 795nm to 860nm
- High conversion efficiency
- Very high temperature stability of operation
- Mechanically robust, shock and vibration resistant
- Highly reproducible MOCVD process

Products are designed for 2 to 12 linear bar array

SPECIFICATIONS

Case temperature : 25° C

Quasi-continuous mode : pulse width = 200µs
repetition rate = 100Hz

PARAMETERS	TH-Q1210-B	TH-Q1310-B	TH-Q1410-B	UNITS
QCW output power	600	800	1 000	Watt
Energy per pulse	120	160	200	mJ
Emitting area	10 x 3.6	10 x 3.6	10 x 3.6	mm x mm
Threshold current, typical	14	14	14	Amp.
max	18	18	18	
Operating current (If), typical	65	86	102	Amp.
max.	70	94	113	
Operating voltage	< 20	< 20	< 20	Volt
Total efficiency, typical	50	50	51	%
min.	44	44	44	
$\Delta I / (I \times \Delta T)^1$	0.4	0.4	0.4	%/K
$\Delta \lambda / \Delta T$	0.26	0.26	0.26	nm/K
Spectral width (FWHM)	< 3.5	< 3.5	< 4	nm
Beam divergence (FWHM)	10 x 40	10 x 40	10 x 40	degree

¹ Variation of operating current with temperature

Note :

- Operation at temperature below dew point requests to use dry N2 environment
- Standard wavelength is 808nm
- Tolerance on wavelength is +/- 3nm
- Other wavelength selections are available in the range of 795nm to 860nm
- Specifications are for nominal lifetime 10^9 pulses (for 200µs pulse width)

ABSOLUTE MAXIMUM RATINGS

QCW output power	630	840	1 050	Watt
Reverse voltage	3	3	3	Volt
Operating temperature	+5 to +60	+5 to +60	+5 to +60	°C
Storage temperature	-40 to +85	-40 to +85	-40 to +85	°C

PACKAGE SPECIFICATION

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

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