

# TH-Q1206-A / TH-Q1306-A / TH-Q1406-A

## 360W / 480W / 600W QUASI-CW STACKED ARRAYS

### DESCRIPTION

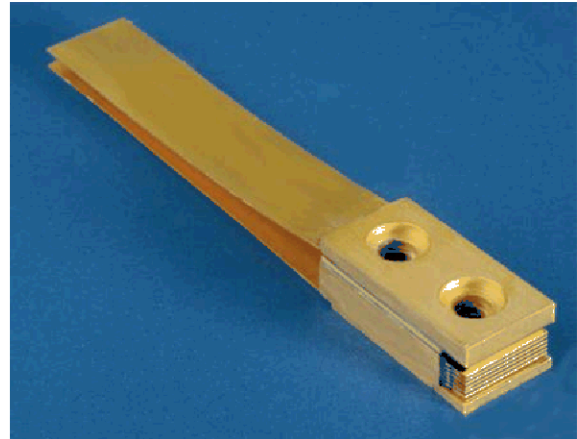
TH-Q1X06-A products are high optical power laser diodes operating in Quasi-CW mode.

They are based on 6 highly efficient 1cm linear bar arrays which are piled up to form a stack. The 'X' in TH-Q1X06-A characterises the optical power of each bar. For X = 2, 3, 4 respectively, peak optical power are 360W, 480W, 600W with power densities from 1.8 to 3kW/cm<sup>2</sup>.

This product can be designed also for 2,3,4 or 5 bars.

The quality of the process of these laser diodes leads to longer lifetime and improved reliability. So the TH-Q1X06-A stacked arrays are 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 (also available between 915 nm and 980 nm)
- High conversion efficiency
- Very high temperature stability of operation
- Mechanically robust, shock and vibration resistant
- Highly reproducible MOCVD process

### SPECIFICATIONS

Case temperature : 25° C

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

PARAMETERS	TH-Q1206-A	TH-Q1306-A	TH-Q1406-A	UNITS
QCW output power	360	480	600	Watt
Energy per pulse	72	96	120	mJ
Emitting area	10 x 2	10 x 2	10 x 2	mm x mm
Threshold current, typical max.	14 18	14 18	14 18	Amp.
Operating current (If), typical max.	65 70	86 94	102 113	Amp.
Operating voltage	<12	<12	<12	Volt
Total efficiency, typical min	50 44	50 44	51 44	%
$\Delta I_f / (I_f \Delta T)^1$	0.4	0.4	0.4	%/K
$\Delta \lambda / \Delta T$	0.26	0.26	0.26	nm/K
Beam divergence (FWHM)	10 x 40	10 x 40	10 x 40	degree
Spectral width (FWHM)	< 3.5	< 3.5	< 4	nm

<sup>1</sup> Variation of operating current  $I_f$  with temperature

#### Note :

- Standard wavelength is 808nm (other wavelength upon request)
- Tolerance on wavelength is +/- 4nm (+/- 3nm upon request)
- Specifications are for nominal lifetime 10<sup>9</sup> pulses (for 200µs pulse width)

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**ABSOLUTE MAXIMUM RATINGS**

PARAMETERS	TH-Q1206-A	TH-Q1306-A	TH-Q1406-A	UNITS
QCW output power	380	500	630	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

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

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