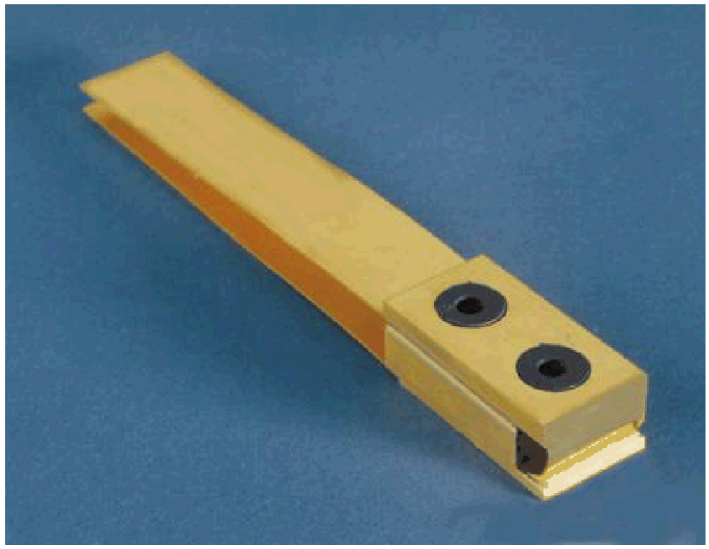
# TH-Q1201-A1 / TH-Q1301-A1 / TH-Q1401-A1

## 60W / 80W / 100W QUASI-CW LINEAR BAR ARRAYS

### DESCRIPTION



The TH-Q1X01-A1 products are a high optical power laser diodes for quasi-CW operation. The 'X' in TH-Q1X06-A characterises the optical power of each bar For X = 2, 3, 4 respectively, peak optical power are 60W, 80W, 100W.These products are based on a quantum well design to realize highly efficient 1cm linear bar arrays.The quality of the process of these laser diodes leads to longer lifetime and improved reliability.
Assembly in a compact and rugged package allows easy connection to a heat exchanger to get good temperature control.

### MAIN FEATURES

- 795nm to 860nm
- Liquid cooled package
- 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-Q1201-A1 | TH-Q1301-A1 | TH-Q1401-A1 | UNITS |
|---|---|---|---|---|
| QCW output power | 60 | 80 | 100 | Watt |
| Energy per pulse | 12 | 16 | 20 | mJ |
| Emitting area | 10 x 0.001 | 10 x 0.001 | 10 x 0.001 | mm x mm |
| Threshold current typical<br>max. | 14<br>18 | 14<br>18 | 14<br>18 | Amp. |
| Operating current (If) typical<br>max. | 65<br>70 | 86<br>94 | 102<br>113 | Amp. |
| Operating voltage | <2 | <2 | <2 | Volt |
| Total efficiency typical<br>min. | 49<br>43 | 49<br>43 | 49<br>43 | % |
| $\Delta If/(If x \Delta T)$ [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 |

[1] Variation of operating current If with temperature

**Note :**
- Standard wavelength is 808nm +/-3nm
- Tolerance on wavelength is +/- 4nm (+/- 3nm upon request)
- **TH-Q1201-A1** can operate at higher duty cycles of over 20% (up to 1kHz) with optical output power up to 80W QCW

## ABSOLUTE MAXIMUM RATINGS

| PARAMETERS | TH-Q1201-A1 | TH-Q1301-A1 | TH-Q1401-A1 | UNITS |
|---|---|---|---|---|
| QCW output power | 65 | 85 | 105 | Watt |
| Reverse voltage | 3 | 3 | 3 | Volt |
| Operating temperature | +5 to +50 | +5 to +50 | +5 to +50 | °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

For further information please contact:
THALES LASER DIODES - Route Départementale 128 - BP 46 - 91401 ORSAY Cedex / France
Tel : (33) 1 69 33 06 61 Fax : (33) 1 69 33 06 62
E-mail : infotld@fr.thalesgroup.com http://www.thales-laser-diodes.com