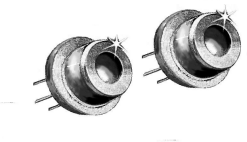
# DFB Laser Diode 1742nm 5mW

## FNPL-5S-1742-DFB



**FNPL-5S-1742-DFB** is a CW DFB semiconductor laser diode operating at 1742nm. It is delivered in standard TO-5.6 and TO-9 packages with optional monitor diode to stabilize power output and TO-5 and butterfly packages with integrated TEC, thermistor and monitor diode. Custom mounts are available upon request.

### Key Features

Very high spectral purity
Narrow Line width <3MHz
Excellent reliability
Variety of packaging options

### Applications

High performance gas sensing, HCl
Precision metrology
Atomic clocks
Spectroscopy
Space technology

## Optical and electrical characteristics:

| Operating parameters | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Optical Output Power | $P_{out}$ | | 5 | | mW |
| Lasing Wavelength | $\lambda$ | 1741 | 1742 | 1743 | nm |
| Threshold Current | $I_{th}$ | 20 | 35 | 65 | mA |
| Forward Current | $I_f$ | | 70 | | mA |
| Operating Voltage | $V_{op}$ | | 2 | | V |
| Beam Divergence Parallel | $\Theta_{\|\|}$ | 20 | 30 | 40 | deg. |
| Beam Divergence Perpendicular | $\Theta_{\perp}$ | 40 | 50 | 60 | deg. |
| Emitting Area | WxH | 2.0x1.0 | 3.0x1.5 | 5.0x2.0 | µm |
| Side mode suppression | | 30 | 35 | 40 | dB |
| Spectral Width (FWHM) | $\Delta\lambda$ | - | - | 3 | MHz |
| Slope Efficiency | $dP_o/dI_{op}$ | 0.05 | 0.1 | 0.25 | mW/mA |
| Temp. Tuning Coefficient | $C_T$ | 0.07 | 0.1 | 0.14 | nm/K |
| Current Tuning Coefficient | $C_I$ | 0.01 | 0.02 | 0.03 | nm/mA |
| Operating Temperature | $T_C$ | -20 | | +50 | ℃ |
| Storage Temperature | $T_S$ | -40 | | +80 | ℃ |



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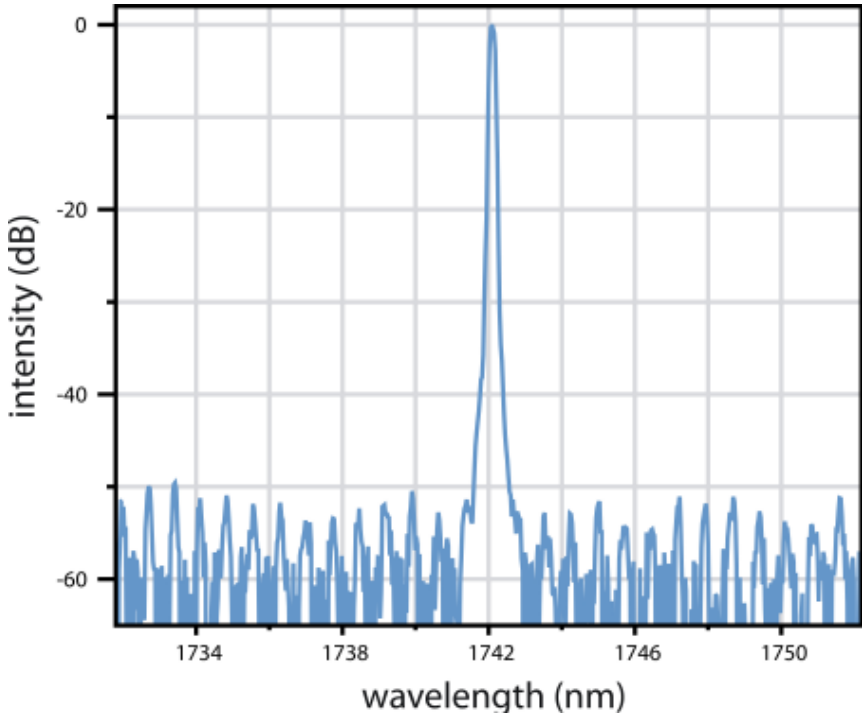
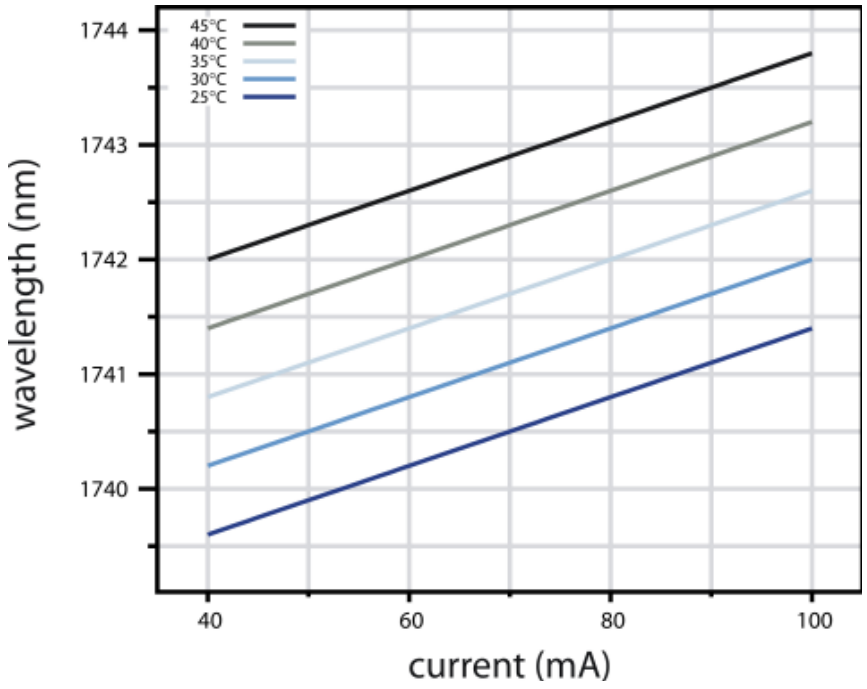
## TYPICAL PERFORMANCE

Room Temperature CW Spectrum at 1742nm




Mode-hop free Wavelength Current Tuning at Different Temperatures



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