

10.8 μ m 3mW DFB Quantum Cascade Laser

FNPL-3S-10800-DFB



FNPL-3S-10800-DFB is a DFB quantum cascade semiconductor laser diode operating at 10.8 μ m. It is delivered in standard TO-5 and TO-8 packages with integrated TEC, thermistor and monitor diode, it is also available in a C-mount package. Custom mounts are available upon request.

Key Features

Very high spectral purity
 Excellent reliability
 Variety of packaging options
 Intrapulse and interpulse tuning

Applications

High performance gas sensing
 Gas Sensing NH₃
 Sensing of liquids
 Free space communications
 Illumination

Optical and electrical characteristics:

Operating parameters	Symbol	Min	Typ	Max	Unit
Optical Peak Output Power	$P_{out\ peak}$	1	3	5	mW
Lasing Wavelength	λ		10.8		μ m
Threshold Current	I_{th}	7,5	8	9	A
Forward Current	I_f	8	9	10	A
Operating Voltage	V_{op}		15		V
Beam Divergence Parallel	$\Theta_{ }$	35	40	45	deg.
Beam Divergence Perpendicular	Θ_{\perp}	55	60	65	deg.
Emitting Area	WxH		8x20		μ m
Slope Efficiency	dP_o/dI_{op}	1.5	2	2.5	mW/A
Temperature Tuning rate	C_T	0.7	0.8	0.9	nm/K
Repetition Rate		0Hz		1	MHz
Duty Cycle		0		3	%
Pulse Width	T_p	10	-	300	ns

Absolute maximum ratings

- Operating temperature 0°C to +30°C
- Storage temperature -40°C to +85°C

TYPICAL PERFORMANCE

Room Temperature Spectrum at 10.8 μ m

