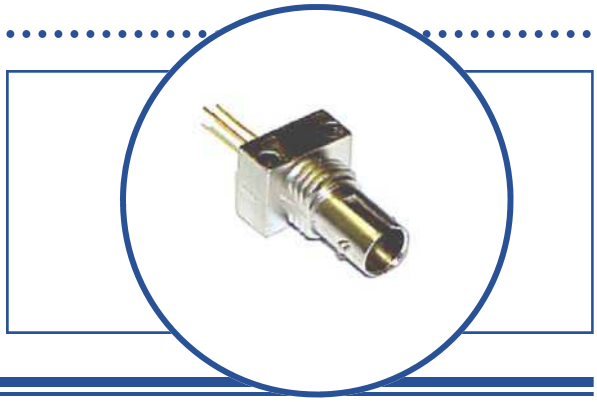
Vertical Cavity Surface Emitting Laser in ST Optical Sub-Assembly
OPV315AT, OPV315BT, OPV315YAT, OPV315YBT

TT electronics
OPTEK Technology

Features:

- 850 nm VCSEL technology
- High thermal stability
- Up to 2.5 Gbps
- Recommended for multimode fiber applications
- Microbead lens
- Pin out and attenuation options available on request
- Burned in for communication level reliability
- High optical coupling to MM fiber
- ST* style receptacle



Description:

The OPV315AT and OPV315BT are high performance 850nm VCSEL packaged for high speed communication links. OPV315AT and OPV315BT combines all the performance advantages of a VCSEL with the addition of a power monitor diode for precise control of optical power.

The OPV315YAT and OPV315YBT are identical electrically and optically and differ only in pin out. Refer to mechanical drawings for details.

This product's combination of features including high speed, high output power and concentric beam makes it an ideal transmitter for integration into all types of data communications equipment.

Applications:

- Fibre Channel
- Gigabit Ethernet
- ATM
- VSR (Very Short Reach)
- Intra-system links
- Optical backplane interconnects

* - ST is a registered trademark of AT&T

Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

Storage Temperature	-40° C to +125° C
Operating Temperature	0° C to +85° C
Soldering Lead Temperature	260° C for 10 Seconds
Maximum Forward Peak Current, Continuous	12 mA
Maximum Reverse Voltage	5 V
Maximum Forward Current, pulsed (1µs P.W., 10% D.C.)	48mA



Additional laser safety information can be found on the Optek website. See application #221. Classification is not marked on the device due to space limitations. See package outline for center-line of optical radiance. Operating devices beyond maximum rating may cause devices to exceed rated classification

Pb
RoHS

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

Electrical/Optical Characteristics (at 25 °C unless otherwise specified)

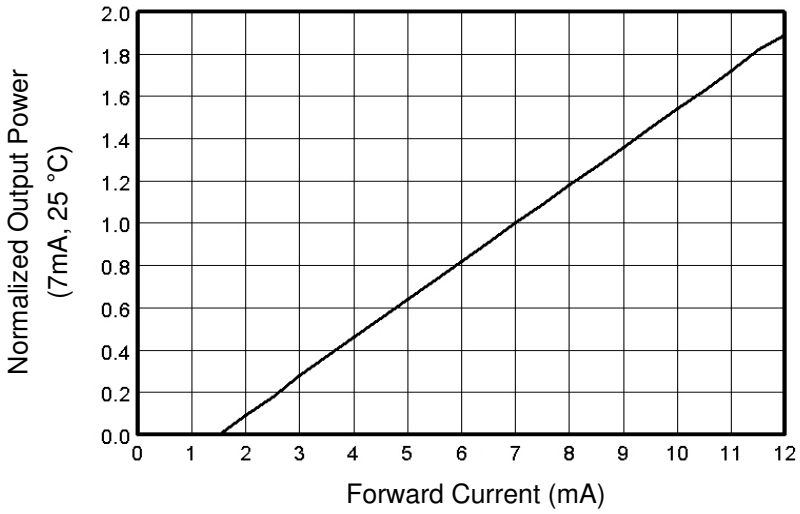
SYMBOL	PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
P_{T50}	Total Coupled Power	OPV315AT, OPV315YAT	300			μW	I_F = 7 mA
	50/125 μm Fiber	OPV315BT, OPV315YBT	200			μW	I_F = 7 mA
I_{TH}	Threshold Current		0.8		3.0	mA	Note1
V_F	Forward Voltage		1.6		2.2	V	I_F = 7 mA
I_R	Reverse Current				100	nA	V_R = 5 V
R_S	Series Resistance		20		55	ohms	Note 2
η	Slope Efficiency	OPV315AT, OPV315YAT	30			μW/mA	Note 3
		OPV315BT, OPV315YBT	20			μW/mA	Note 3
I_{RPD}	Reverse Current, photodiode				35	nA	V_R = 40 V
	Linearity		0.00				Note 4
I_M	Monitor Current		30			μA	I_F = 7 mA, V_R = 5 V
λ	Wavelength		840		860	nm	
Δλ	Optical Bandwidth				0.85	nm	
t_r	Rise Time			90		ps	20% to 80%
t_f	Fall Time			120		ps	80% to 20%
N_{RI}	Relative Intensity Noise			-123		db/Hz	
Δη/ΔT	Temp Coefficient of Slope Efficiency			-0.5		%/°C	0° - 70° C
ΔI_{TH}	Temp Variance of Threshold Current			±1.0		mA	0° - 70° C
Δλ/ΔT	Temp Coefficient of Wavelength			0.06		nm/°C	0° - 70° C
ΔVf/ΔT	Temperature Coefficient for V_F			-2.5		mV/°C	

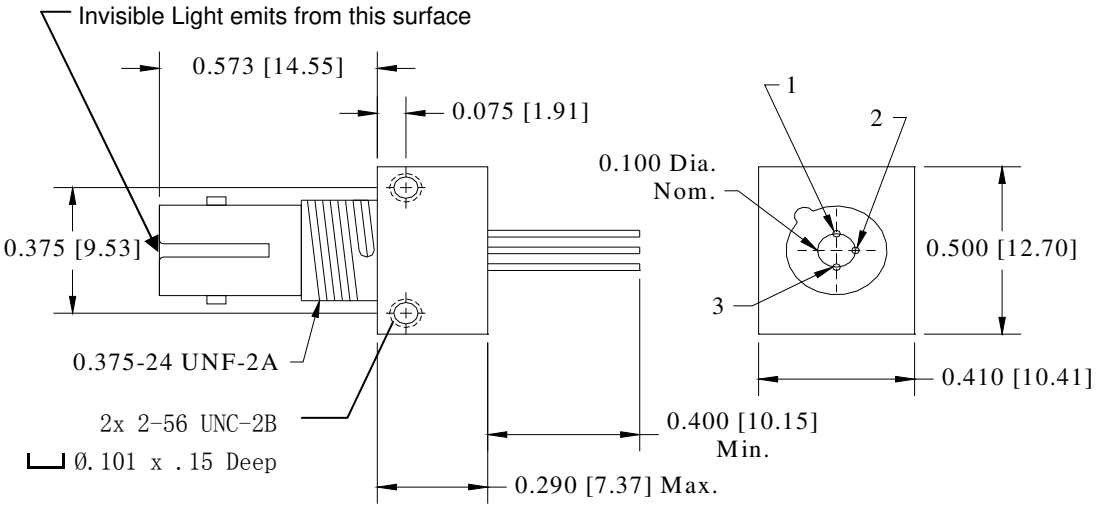
NOTES:
(1) Threshold Current is based on the two line intersection method specified in Telcordia GR-468-Core. Line 1 from 4 mA to 6 mA. Line 2 from 0 mA to 0.5 mA.
(2) Series Resistance is the slope of the Voltage-Current line from 5 to 8 mA.
(3) Slope efficiency, is the slope of the best fit LI line from 5 mA to 8 mA using no larger than .25 mA test interval points. Measured with a 50/125 μm fiber.
(4) Linearity—Using data points taken for slope efficiency above, data L/delta I shall be calculated for each adjacent pair of points.

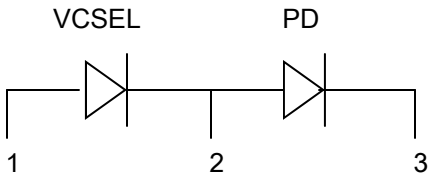
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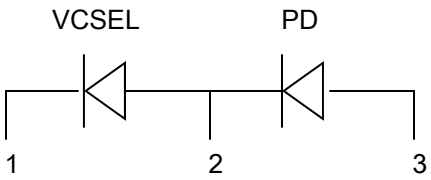
Normalized Output Power vs. Forward Current







OPV315AT, OPV315BT	
Pin	**Connection**
1	VCSEL Anode
2	VCSEL Cathode/PD Anode
3	PD Cathode



OPV315YAT, OPV315YBT	
Pin	**Connection**
1	VCSEL Cathode
2	VCSEL Anode/PD Cathode
3	PD Anode

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