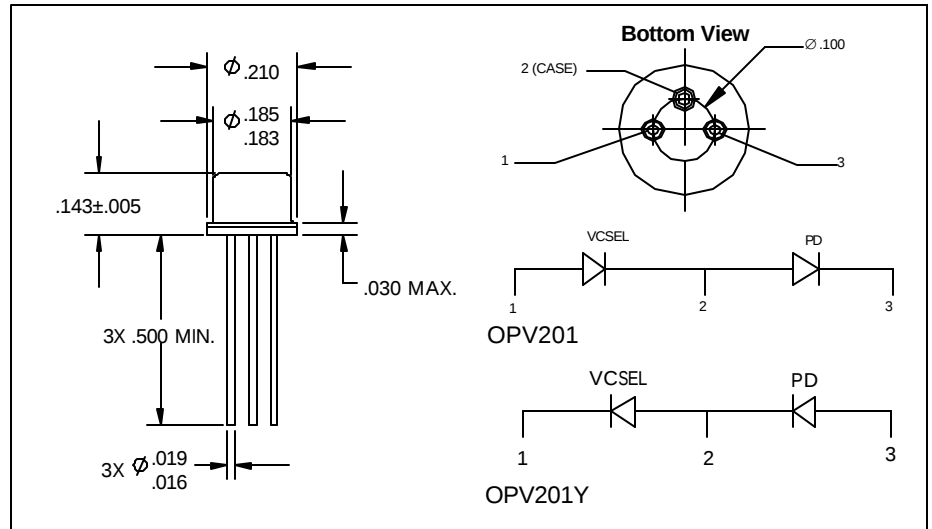
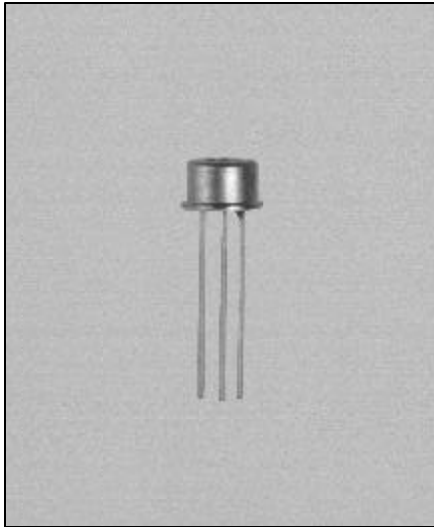


Vertical Cavity Surface Emitting Laser Types OPV210, OPV210Y



Features

- Backmonitor photodiode
- 850 nm VCSEL technology
- High thermal stability
- High output density
- Narrow and concentric beam angle
- Up to 1.25 Gbps
- Recommended for multimode fiber applications
- Flat window
- Pin out and attenuation options available on request
- Burned in for communication level reliability

Description

The OPV210 and OPV210Y is a high performance 850 nm VCSEL packaged for high speed communication links. OPV210 and OPV210Y combines all the performance advantages of a VCSEL with the option of a power monitor diode. Attenuated outputs available on request. This product is an ideal light source and is designed for easy integration into applications in Fibre Channel, Gigabit Ethernet, ATM, VSR (Very Short Reach) and in intra-system or optical backplane interconnects.

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Storage Temperature	-40° C to +125° C
Operating Temperature	-40° C to +85° C
Soldering Lead Temperature	260° C for 10 seconds
Maximum Forward Peak Current	30 mA
Maximum Reverse Voltage	5 V
Maximum Continuous Output Power at 70° C.	1.1 mW

Warning: This product is classified as a Class II laser per ANSI Z136.1. Therefore this part is capable of causing eye damage under certain operating conditions. Optek recommends ANSI Z136.1 as a source for proper handling and labeling of equipment using this product.

OPV210	
Pin	Connection
1	VCSEL Anode
2	VCSEL Cathode/PD Anode
3	PD Cathode

OPV210Y	
Pin	Connection
1	VCSEL Cathode
2	VCSEL Anode/PD Cathode
3	PD Anode

Types OPV210, OPV210Y

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
P_{ot}	Power Out Total	1.45		4.5	mW	$I_F = 12\text{ mA}$
I_{th}	Threshold Current	2.0		5.0	mA	Note 1
V_F	Forward Voltage			2.2	V	$I_F = 12\text{ mA}$
I_R	Reverse Current, VCSEL			35	nA	$V_r = 5\text{ V}$
R_s	Series Resistance	15		40	ohms	Note 2
η	Slope Efficiency	.20		.57	mW/mA	Note 3
	Linearity	0.0		1.0		Note 4
I_{rpd}	Reverse Current, photo diode			30	nA	$I_F = 0$
I_m	Monitor Current	30			μA	$I_F = 12\text{ mA}$, $V_R = 5\text{ V}$
λ	Wavelength	830	850	860	nm	
$\Delta\lambda$	Optical Bandwidth			.85	nm	
θ	Beam Divergence		16		Degree	$I_F = 12\text{ mA}$
t_r/t_f	Rise and Fall Time		200		ps	20% to 80%
Nri	Relative Intensity Noise		-123		db/Hz	
$\Delta I_{th}/\Delta T$	Temp Coefficient of Theshold Current		± 1.5		mA	$0^\circ - 70^\circ\text{C}$, Note 1
$\Delta\lambda/\Delta T$	Temp Coefficient of Wavelength		.06		$\%/\text{C}$	$0^\circ - 70^\circ\text{C}$, $I_F = 12\text{ mA}$
$\Delta V_f/\Delta T$	Temperature Coefficient for VF		-2.5		mv/ $^\circ\text{C}$	$0^\circ - 70^\circ\text{C}$, $I_F = 12\text{ mA}$
$\Delta h/\Delta T$	Temperature Coefficient for Efficiency		-.4		$\%/\text{C}$	$0^\circ - 70^\circ\text{C}$, Note 3

VCSEL
COMPONENTS

NOTES:

- (1) Thresh old Cur rent is based on the two line in ter sec tion method speci fied in Tel cor dia GR- 468- Core. Line 1 from 6 mA to 12 mA. Line 2 from 0 mA to 2 mA.
- (2) Se ries Re sis tance is the slope of the Voltage- Current line from 8 to 12mA.
- (3) Slope ef fi ciency, is the slope of the best fit LI line from 1 mA above thresh old to 12 mA.
- (4) Us ing data points taken for slope ef fi ciency above, delta L/delta I shall be cal cu lated for each ad ja cent pair of .5 mA points. The mini mum shall be 0.0. (No nega tive val ues per mit ted).

Op tek re serves the right to make changes at any time in or der to im prove de sign and to sup ply the best prod uct pos si ble.

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