

VCSEL

KODENSHI

KVCB1-8512

VCSEL, or Vertical Cavity Surface Emitting Laser, is semiconductor microlaser diode that emits light in a cylindrical beam vertically from the surface of a fabricated wafer.

FEATURES

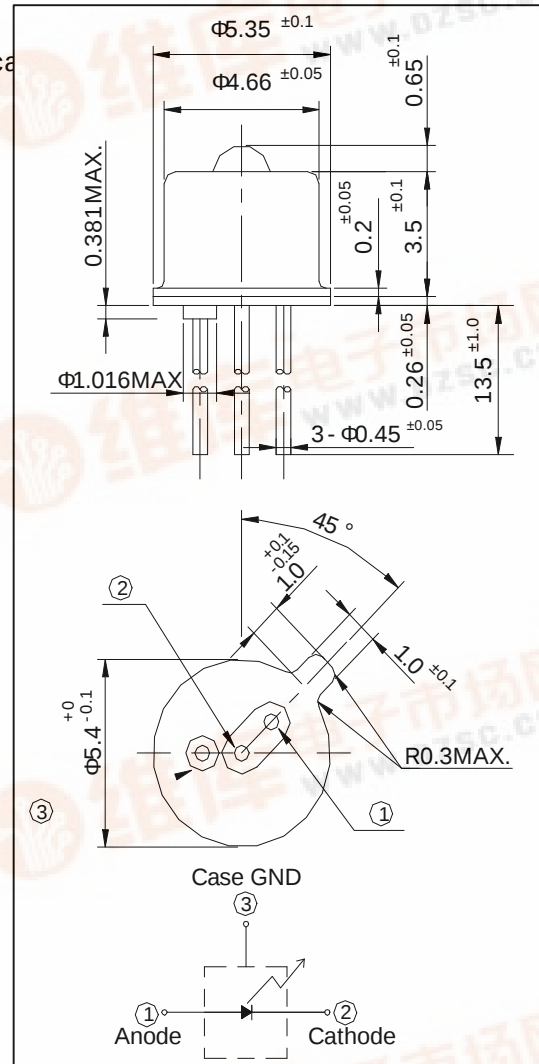
- 850nm wavelength range
- High data rate $\geq 2.5\text{Gbps}$
- High reliability
- Low current and voltage
- Other configurations available on request

APPLICATIONS

- Fiber optic data links
- Proximity Sensors
- Encoders
- Laser range finders
- Laser printing
- Bar code scanning
- Optical storage

DIMENSIONS

Unit:(mm)



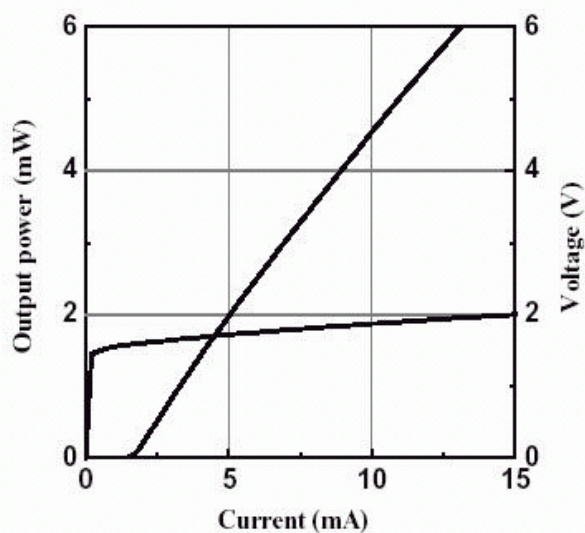
ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Ratings	Unit
Operating Temperature	$T_{opr.}$	0~+70	
Storage Temperature	$T_{stg.}$	-40~+100	
Lead Solder Temperature (10sec)	T_{sol}	260	
Continuous Forward Current	I_F	10	mA
Continuous Reverse Voltage	V_R	5	V

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ELECTRO-OPTICAL CHARACTERISTICS

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Threshold Current	I_{th}		1.5	3	mA	CW
I_{th} Temperature Variation	ΔI_{th}		1		mA	$T_a=0$ to 70
Slope Efficiency	η	0.3	0.5	0.7	mW/mA	$I_F=6$ mA
η Temperature Coefficient	$\Delta\eta/\Delta T$		-0.5		%/	$T_a=0$ to 70 at 6mA
Optical Output Power	P_o		2.5		mW	$I_F=6$ mA
Peak Wavelength	λ_p	840	850	860	nm	$I_F=6$ mA
λ_p Temperature Coefficient	$\Delta\lambda_p/\Delta T$		0.06		nm/	$T_a=0$ to 70 at 6mA
Spectral Bandwidth	$\Delta\lambda$		0.5	0.85	nm	$I_F=6$ mA
Beam Divergence	Θ	5	10	15	°	$P_o=1.5$ mW, Full Width, $1/e^2$
Forward Voltage	V_f		1.8	2.2	V	$I_F=6$ mA
Breakdown Voltage	V_b		-10		V	
Dynamic Resistance	R_d	25	35	55	Ω	$I_F=6$ mA

L-I-V Curve2.5Gbps Eye Diagram