



Standard 850 nm Oxide VCSEL Specs

(High-speed datacom & general purpose, $\geq 2.5\text{Gbps}$)

Available in singlet die and m x n Array forms

Dimension (250 X m)X(305 X n)X(120) μm^3 (m=1,...,4; n=1,...,12)

Parts number: **VX-Comn** (m=1,...,4; n=1,...,9,A,B,C)

1. Optical and Electrical Characteristics

Parameter	Symbol	Min.	TYP.	Max.	Unit	Test Condition
Peak Wavelength	λ_p	830	845	860	nm	$I_f = 8\text{mA@RT}$
Spectral Width (RMS)	$\Delta\lambda$			0.85	nm	$I_f = 8\text{mA@RT}$
Beam Divergence	Θ		25	30	Deg	Full width at $1/e^2$; $I_f = 8\text{mA@RT}$
Forward Voltage	V_f	1.7	1.9	2.2	V	$I_f = 8\text{mA@RT}$
Threshold Current	I_{th}		2.2	3	mA	
Slope Efficiency	dP/dI	0.25	0.4	0.7	W/A	$I_f = 8\text{mA@RT}$
Optical output power	P_{out}		2.3		mW	$I_f = 8\text{mA@RT}$
Dynamic Resistance	dV/dI	25	40	65	Ω	$I_f = 8\text{mA@RT}$
Rise / Fall Time	t_r / t_f		50	100	ps	20%-80%
Jitter p-p	t_j		35		ps	
λ_p Temperature Coefficient	$\delta\lambda_p/\delta T$		0.06		nm/ $^{\circ}\text{C}$	$T_A = 0 \sim 70^{\circ}\text{C}$, $I_f = 8\text{mA}$

2. Maximum Ratings

Parameter	Min.	Max.	Unit	Condition
Storage Temperature	-40	100	$^{\circ}\text{C}$	
Operating Temperature	0	85	$^{\circ}\text{C}$	
Continuous Forward Current		10	mA	
Continuous Reverse Voltage		5	V	@10 μA

3. Physical dimensions

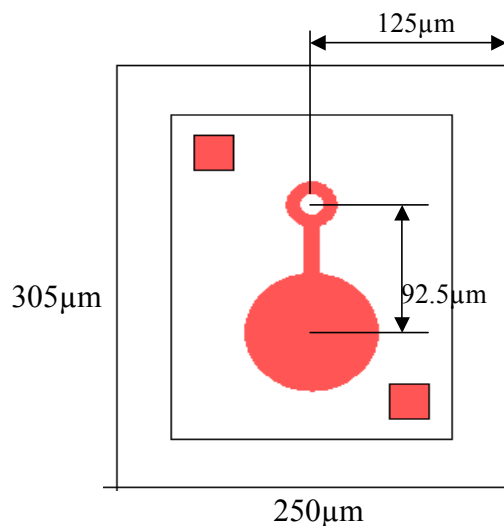
Parameter	Unit	TYP.
Die Length	μm	305
Die Width	μm	250
Die Height	μm	120
Bondpad Diameter	μm	85

Note: These specifications are subject to change without notice.

E-mail: VCSEL@axt.com
 Tel: 323-278-0820
 Fax: 323-278-0096

2019 Saturn Street
 Monterey Park, California 91754

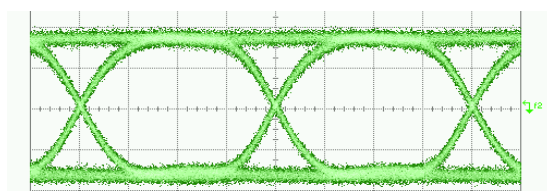
DEVICE TOP VIEW



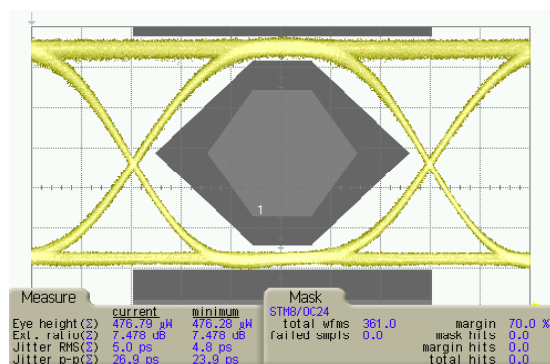
(Only metal patterns and scribe-channel mesa are shown here.)

TYPICAL EYE DIAGRAMS

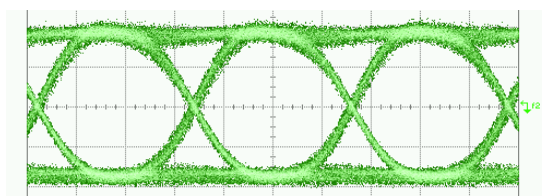
2.5Gbps eye diagram



1.25Gbps eye diagram



3.125Gbps eye diagram



Note: These specifications are subject to change without notice.

E-mail: VCSEL@axt.com
 Tel: 323-278-0820
 Fax: 323-278-0096

2019 Saturn Street
 Monterey Park, California 91754