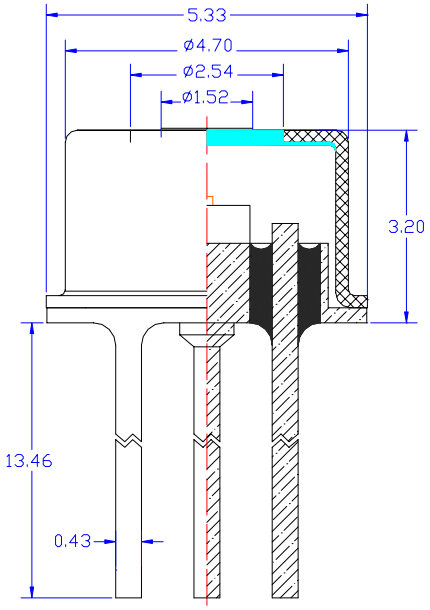
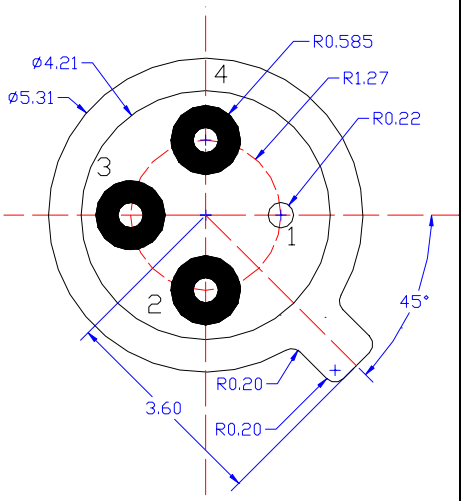
850nm VCSEL in To-46 Package

VCSEL/LD Division





Unit:mm

Bottom View

1. Case
2. VCSEL Anode
3. VCSEL Cathode/Photodiode Anode
4. Photodiode Cathode

1. Feature:

a. Oxidation process
b. Flat window
c. Monitor Photodiode
d. High speed ≥2.5Gbps

2. Application:

a. High-speed data communications and telecommunications applications
b. Gigabit Ethernet
c. Fiber Channel
e. ATM transceiver modules and system

3. Part Number: VX-TO11-4FP1

4. Optical and Electrical Characteristics

Parameter	Symbol	Min.	TYP.	Max.	Unit	Test Condition
Peak Wavelength	λ_p	830	845	860	nm	I_f = 8mA@RT
Spectral Width (RMS)	$\Delta\lambda$			0.85	nm	I_f = 8mA@RT
Beam Divergence	Θ		25	30	Deg	Full width at $1/e^2$; I_f = 8mA@RT
Forward Voltage	V_f	1.7	1.9	2.2	V	I_f = 8mA@RT
Threshold Current	I_{th}		2.2	3	mA	
Slope Efficiency	dP/dI	0.12	0.32	0.4	W/A	I_f = 8mA@RT
Optical output power	P_{out}		1.85		mW	I_f = 8mA@RT
Dynamic Resistance	dV/dI	20	40	65	Ω	I_f = 8mA@RT
Rise / Fall Time	tr / tf		50	100	ps	20%-80%
Jitter p-p	t_j		35		ps	
λ_P Temperature Coefficient	$\delta\lambda_P/\delta T$		0.06		nm/°C	T_A=0~70°C, I_f = 8mA
Operating Temperature Range	T_{op}	-5	25	80	°C	
Monitor Current	Im	100			uA	I_f = 8mA@RT

5. Maximum Ratings

Parameter	Min.	Max.	Unit	Condition
Storage Temperature	-40	100	°C	
Operating Temperature	0	85	°C	
Continuous Forward Current		10	mA	
Continuous Reverse Voltage		5	V	@10μA

6. Monitoring PIN Specs

Parameter	Symbol	Min.	TYP.	Max.	Unit	Test Condition
Dark current	I_r		0.2	1	nA	V_r = 10 V
Shunt resistance	P_p	100	200		GΩ	
Breakdown voltage	V_{br}		50		V	
Junction capacitance	C_p		40		pF	@ V_r = 10 V, 10 KHz

Note. These specifications are subject to change without notice.

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