

FEATURES

- High speed low cost VCSEL.
- Industry standard ST-LP fibre connector.
- Designed for drive currents between 5 and 15mA
- Optimised for low temperature dependence



DESCRIPTION

The HFE3637-001/XBA is a high-performance 850nm VCSEL (vertical cavity surface emitting laser) intended for medium to high speed data communications. It combines many of the desirable features of an LED with the desirable features of a laser diode, operating in a single longitudinal mode but with multiple transverse modes reducing coherence and consequent modal noise in multimode fibre applications.

APPLICATION

The HFE3637-001/XBA is a high radiance VCSEL packaged in a TO-46 header with a metal can assembled in a ST-LP connector.

The component produces a circularly symmetric, narrow divergence beam. The stability of operating characteristics with temperature allows operation without continuous photo diode control, simplifying drive current considerably. The HFE3637-001/XBA is designed to be used with inexpensive silicon or gallium arsenide detectors, but excellent performance can also be achieved with some indium gallium arsenide detectors.

The low drive current of the HFE3637-001/XBA makes direct drive from PECL or ECL logic gates feasible and eases driver design.

Note : ST is a trademark of AT&T

ABSOLUTE MAXIMUM RATINGS

Storage temperature	-40 to +100°C
Operating temperature	0 to +70°C
Forward current	15mA
Reverse voltage	5V @ 10µA

NOTICE

Stresses greater than those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operations section for extended periods of time may affect reliability.

ELECTRO-OPTICAL CHARACTERISTICS (Tests made at 25°C unless otherwise stated)

Parameter	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Coupled power 50/125µm fibre	P _{OC}	100 -10.0	400 -4.0		µW dBm	I _F = 10mA ⁽¹⁾
Rise / Fall Time	t _r /t _f		400		pS	I _F = 10mA
Threshold Current	I _{TH}	1.5	3.5	7	mA	I _F = 10mA
Threshold current temperature variation	ΔI _{TH}	-1.9		1.9	mA	I _F = 10mA. T _A = 0°C to 70°C
Slope Efficiency	η		0.3		mW/mA	I _F = 10mA
Slope efficiency temperature variation.	Δη/ΔT		-0.5		%/°C	I _F = 10mA. T _A = 0°C to 70°C
Peak Wavelength	λ _p	820	850	850	nm	I _F = 10mA DC
λ _p Temperature variation	Δλ/ΔT		0.06		nm/°C	I _F = 10mA
Spectral Bandwidth	Δλ			0.85	nm	I _F = 10mA DC
Laser forward voltage	V _F	1.5	1.75	2.2	V	I _F = 10mA
Series Resistance	r _S	15	25	40	Ω	DC
Beam divergence	Θ		10		Degrees	

1. Tested into 50/125µm graded index fibre, 0.2NA, @10mA I_F

NOTICE

The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product.

Fibre Optic LAN Components

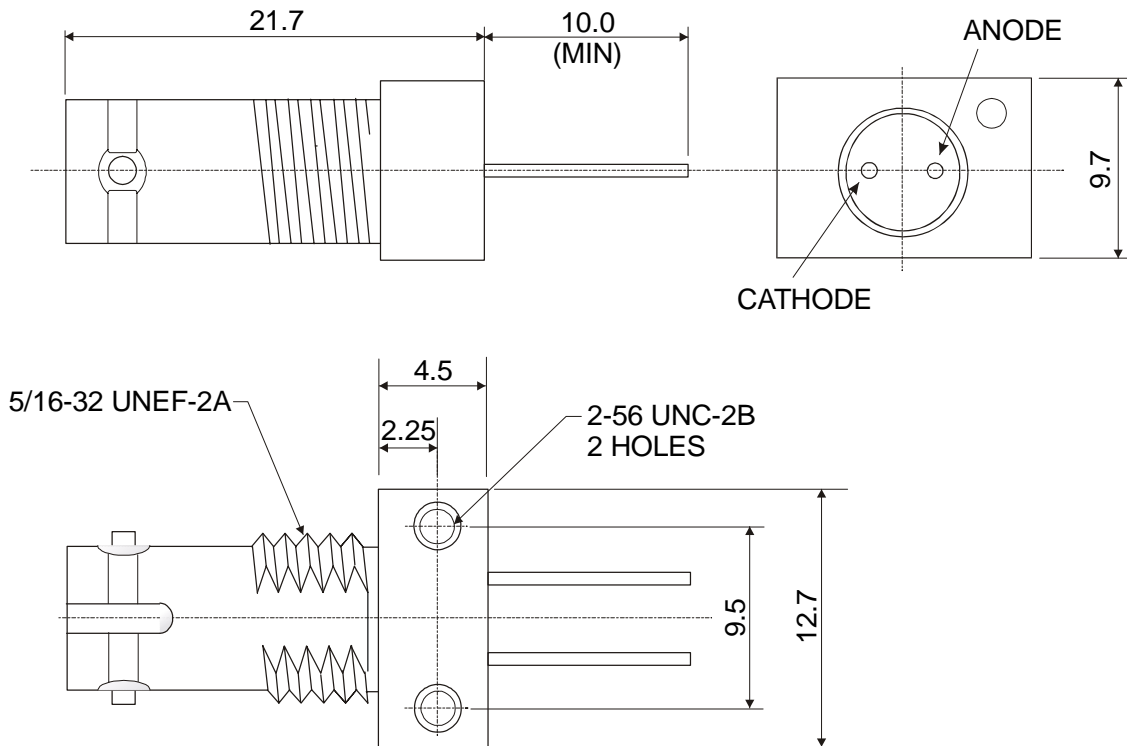
Low Cost VCSEL

HFE3637-001/XBA

ORDER GUIDE

Catalogue Listing	Description
HFE3637-001/XBA	Low cost VCSEL

MOUNTING DIMENSIONS (for reference only)



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