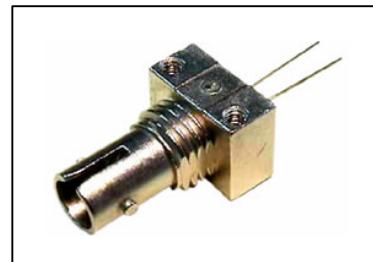


TTR-1A23

Connectorized High-speed VCSEL

FEATURES:

- Industry standard connector of metallic ST^{*}-type receptacle.
- Pre-aligned for multi-mode fiber communication.
- High stability to temperature variation.
- Solution of 10/100/622/1250 Mbps applications.
- LED transmitter alternative.



ELECTRO-OPTICAL CHARACTERISTICS:

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS ⁽¹⁾
Threshold Current	I _{th}		3	6	mA	
Fiber Coupled Power (50/125, 62.5/125 µm MMF) ⁽²⁾	P _o	-4 -9.5 -17	2 -4 -12		dBm	I _F =12 mA ⁽³⁾
Slope Efficiency	η		0.1		mW/mA	I _F =12 mA ⁽⁴⁾
Wavelength	λ _P	830	850	860	nm	I _F =12 mA
Spectral Width (RMS)	Δλ			0.85	nm	I _F =12 mA
Transverse Mode Number		2	3	4		I _F =12 mA
Forward Voltage	V _F	1.7	1.9	2.3	V	I _F =12 mA
Breakdown voltage	V _{BD}	10	15		V	I _R =10 µA
Rise/Fall Time (20%~80%)	T _R /T _F		130/200		ps	T _A =25°C, Extinction Ratio > 10dB

Notes:

- All parameters except mentioned are measured at I_F=12 mA, 25°C, CW.
- TTR-1A22 is product type specified for 50/125µm MMF, and TTR-1A23 is product type specified for 62.5/125µm MMF.
- Specific power range can be provided under request.
- Slope efficiency is defined as ΔP/(12-I_{th}) at 25°C.

THERMAL CHARACTERISTICS:

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Thermal Resistance	R _{th}		900		°C /W	T _A =25°C
I _{th} Temperature Variation	ΔI _{th}	-1	1		mA	T _A =0~70°C
V _F Temperature Coefficient	ΔV _F /ΔT	-3.5	-2.5		mV/°C	T _A =0~70°C, I _F =12 mA
η Temperature Coefficient	Δη/ΔT		-0.15		%/°C	T _A =0~70°C, I _F =12 mA
λ _P Temperature Coefficient	Δλ _P /ΔT		0.06		nm/°C	T _A =0~70°C, I _F =12 mA

ABSOLUTE MAXIMUM RATINGS:

PARAMETERS	MIN	MAX	UNIT	CONDITIONS
Storage Temperature	-40	100	°C	
Operating Temperature	-20	85	°C	
Lead Solder Temperature		260	°C	10 seconds
Continuous Forward Current		40	mA	
Continuous Reverse Voltage		10	V	

* ST is a registered trademark of AT&T.

Fig. 1 Typical Optical Characteristics

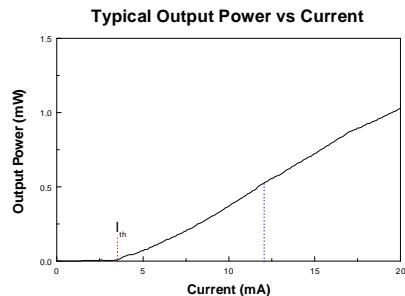


Fig. 2 Typical Electrical Characteristics

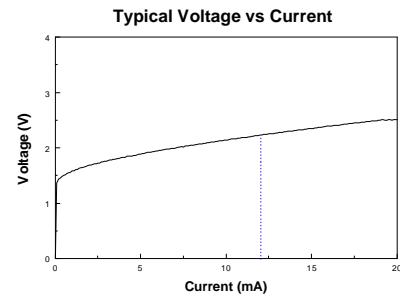
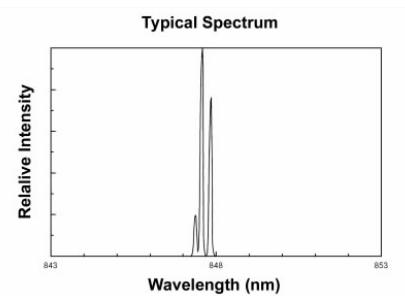
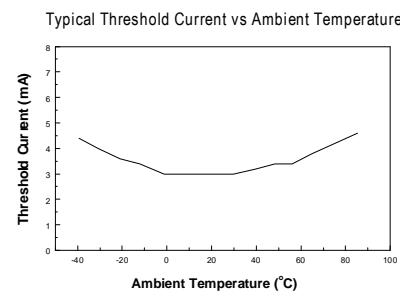


Fig. 3 Spectrum When Driving Current 12 mA



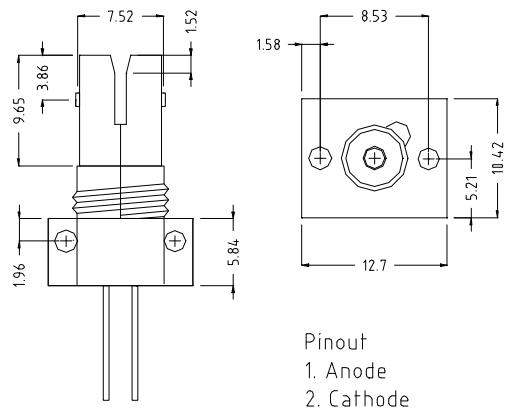
3 transverse modes typically.

Fig. 4 Temperature Dependence of Threshold Current



OUTLINE DIMENSIONS:

- Unit: mm



2 1

WARNING:

The VCSEL is a class IIIb laser in the safety standard ANSI Z136.1 and should be treated as a potential eye hazard.

