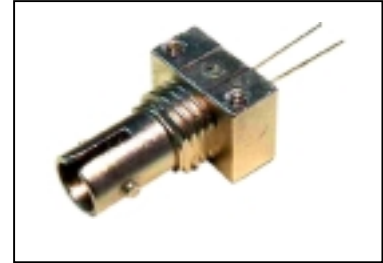


TTR-2A22/TTR-2A23

Connectorized VCSEL Light Source

FEATURES:

- Industry standard connector of metallic ST^{*}-type receptacle.
- Pre-aligned for multi-mode fiber communication.
- Copper leadframe, low dependence of thermal variation.
- Suitable for 10/100 Mbps applications.
- Cost-effective LED transmitter alternative.



ELECTRO-OPTICAL CHARACTERISTICS:

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Threshold Current	I_{th}		3	6	mA	
Fiber Coupled Power (50/125, 62.5/125 μ m MMF) ⁽²⁾	P_o	-15		-10	dBm	$I_F=12$ mA
Slope Efficiency	η		0.1		mW/mA	$I_F=12$ mA
Wavelength	λ_p	820	850	870	nm	$I_F=12$ mA
Spectral Width (RMS)	$\Delta\lambda$			0.85	nm	$I_F=12$ mA
Transverse Mode Number		2	3			$I_F=12$ mA
Forward Voltage	V_F	1.7	1.8	2.1	V	$I_F=12$ mA
Breakdown voltage	V_{BD}	10	15		V	$I_R=10$ μ A
Series Resistance	R_S		30		Ω	$I_F=12$ mA
Capacitance	C		5		pF	$V_R=0$ V, $f=1$ MHz
Rise/Fall Time (10%~90%)	T_R/T_F			1	ns	$T_A=25^\circ\text{C}$, Extinction Ratio > 10dB

Notes:

1. TTR-2A22 is specified for 50/125 μ m MMF, and TTR-2A23 is specified for 62.5/125 μ m MMF.
2. Specific power range can be provided under request.

THERMAL CHARACTERISTICS:

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Thermal Resistance	R_{th}		1000		$^\circ\text{C}/\text{W}$	$T_A=25^\circ\text{C}$
I_{th} Temperature Variation	ΔI_{th}	-1.5		1.5	mA	$T_A=0\sim 70^\circ\text{C}$
V_F Temperature Coefficient	$\Delta V_F/\Delta T$		-3.0	-3.5	mV/ $^\circ\text{C}$	$T_A=0\sim 70^\circ\text{C}$, $I_F=12$ mA
η Temperature Coefficient	$\Delta\eta/\Delta T$		-0.25		%/ $^\circ\text{C}$	$T_A=0\sim 70^\circ\text{C}$, $I_F=12$ mA
λ_p Temperature Coefficient	$\Delta\lambda_p/\Delta T$		0.07		nm/ $^\circ\text{C}$	$T_A=0\sim 70^\circ\text{C}$, $I_F=12$ mA

ABSOLUTE MAXIMUM RATINGS:

PARAMETERS	MIN	MAX	UNIT	CONDITIONS
Storage Temperature	-40	100	$^\circ\text{C}$	
Operating Temperature	-20	70	$^\circ\text{C}$	
Lead Solder Temperature		260	$^\circ\text{C}$	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

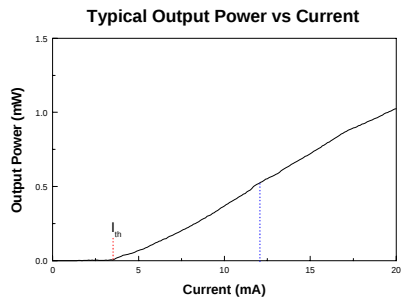


Fig. 2 Typical Electrical Characteristics

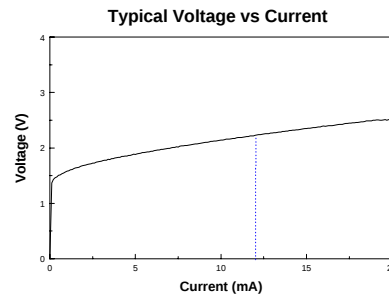
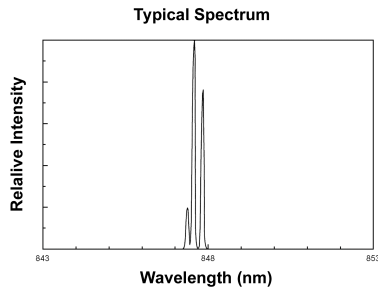
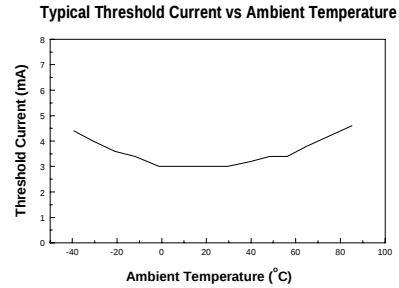


Fig. 3 Spectrum When Driving Current 12 mA



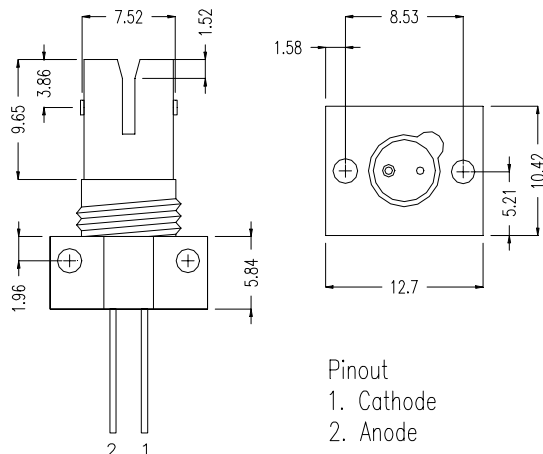
3 transverse modes typically.

Fig. 4 Temperature Dependence of Threshold Current



OUTLINE DIMENSIONS:

• Unit: mm



WARNING:

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

