



1.25Gbps 850nm VCSEL SC-TOSA with Monitor PD, -10 to 70°C

Part No.TSC-P85A416-2 (Common cathode) | TSC-P85A426-2 (Common anode)

Features

- Pre-aligned SC-type receptacle for 50/125um and 62.5/125um multi-mode fiber communication
- Packaged with attenuating coating and monitoring PD
- Data rate operation from DC to 1.25Gbps
- Common cathode or common anode pin configuration



Specifications

Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	85	°C	
Operating Temperature	-10	70	°C	
Lead Solder Temperature		260	°C	10 seconds
Laser Continuous Forward Current		20	mA	
Laser Continuous Reverse Voltage		5	V	

Electro-Optical Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I_{th}		1.7	3	mA	
Slope Efficiency	η	0.04	0.07	0.12	mW/mA	$I_F=6\text{ mA}$
Wavelength	λ_P	830	850	860	nm	$I_F=6\text{ mA}$
Forward Voltage	V_F	1.6	1.8	2.1	V	$I_F=6\text{ mA}$
Breakdown Voltage	V_{BD}	5	14		V	$I_R=10\text{ uA}$
Rise Time (20%~80%)	T_r		0.15	0.25	ns	@ $I_{bias}=6\text{ mA}$
Fall Time (20%~80%)	T_f		0.15	0.25	ns	@ $I_{bias}=6\text{ mA}$
Series Resistance	R_s	35	45	65	Ω	$I_F=6\text{ mA}$
Spectral Width (RMS)	$\Delta\lambda$			0.85	nm	$I_F=6\text{ mA}$
Relative Intensity Noise	RIN		-130	-120	dB/Hz	$I_F=6\text{ mA}$, $f=1\text{GHz}$
Monitor Current	I_M	200		800	μA	$V_R=5\text{V}$, $P_{OC}=350\text{uW}^{(2)}$

Notes:

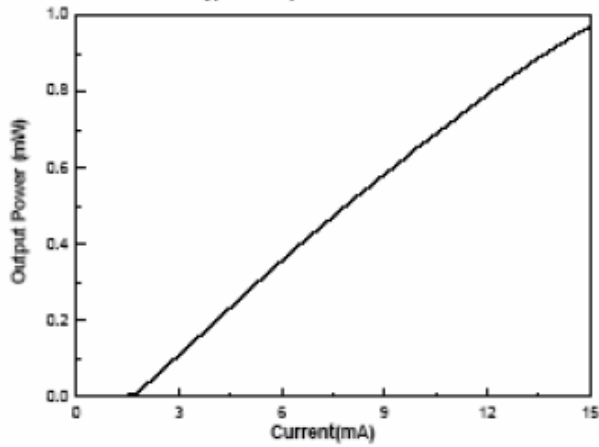
1. All parameters except mentioned are measured at $I_F=6\text{ mA}$, 25°C , CW.
2. P_{OC} =Coupled Optical Power, measured with a multi-mode 50/125um fiber and ambient temperature 25°C .

Thermal Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
I_{th} Temperature Variation	ΔI_{th}	-1.5		1.5	mA	$T_A=0\sim 70^\circ\text{C}$
η Temperature Coefficient	$\Delta\eta/\Delta T$	-0.1		-0.5	%/°C	$T_A=0\sim 70^\circ\text{C}$, $I_F=6\text{ mA}$
λ_P Temperature Coefficient	$\Delta\lambda_P/\Delta T$		0.06		nm/°C	$T_A=0\sim 70^\circ\text{C}$, $I_F=6\text{ mA}$

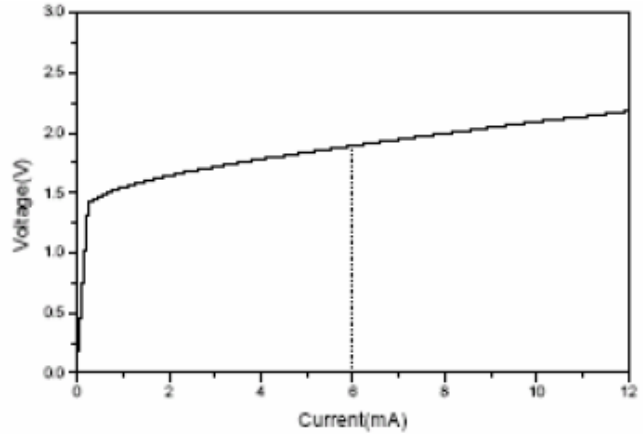


Typical Characteristics

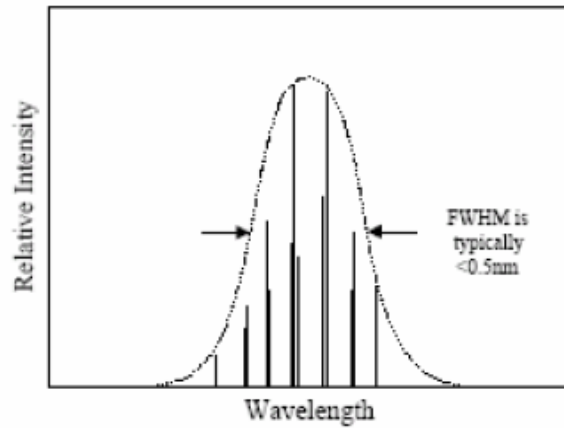
Typical Output Characteristics



Typical Electrical Characteristics



Spectrum at Driving Current 6mA



Temperature Dependence of Threshold Current

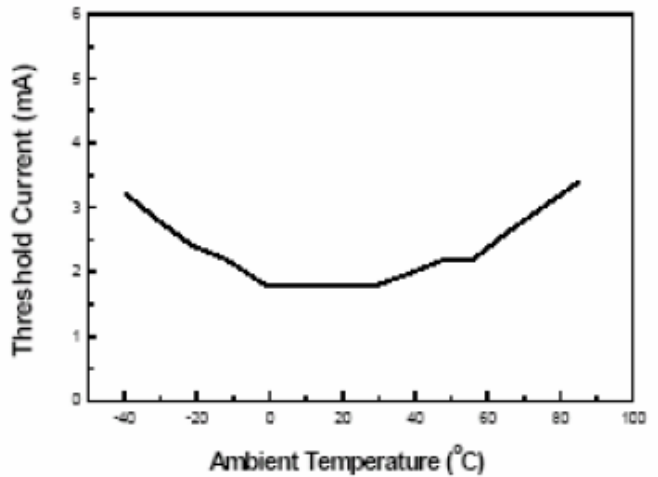
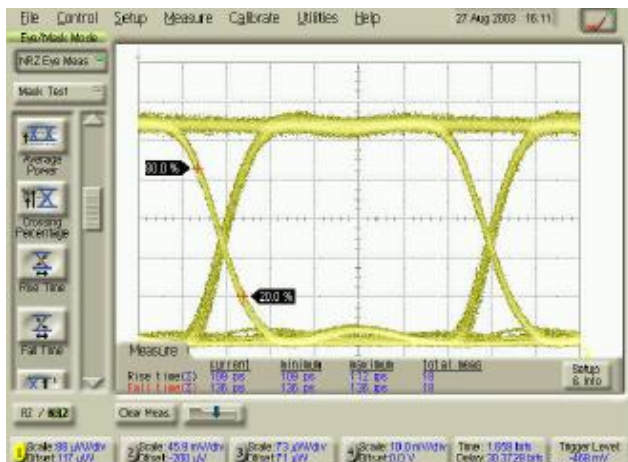
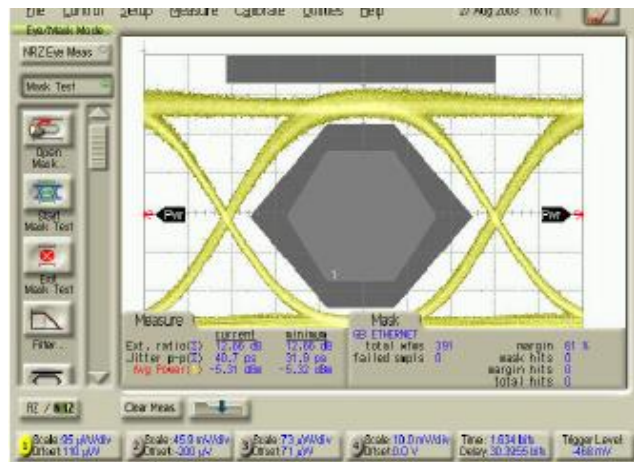


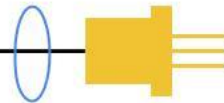
Illustration of Eye Performance at 1.25Gbps

Without Filter

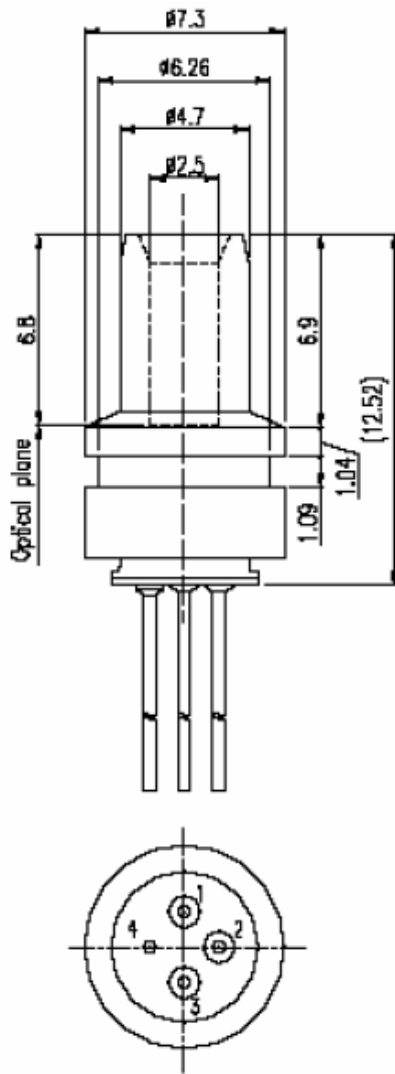


With Filter





Outline Dimensions (unit: mm)



Pin Configuration

TSC-P85A416-2		TSC-P85A426-2	
Number	Function	Number	Function
1	VCSEL Anode	1	VCSEL Cathode
2	VCSEL Cathode/PD Anode	2	VCSEL Anode/PD Cathode
3	PD Cathode	3	PD Anode
4	Case	4	Case

Note: Specifications are subject to change without notice.