



Connectorized 2.5Gbps 850nm VCSEL SC-TOSA with Monitor PD, -40~85°C

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

Features

- Pre-aligned SC-type receptacle for 50/125um multi-mode fiber communication
- Data rate operation from DC to 2.5Gbps
- Wide operation temperature range -40°C to 85°C
- Common cathode or common anode pin configuration



Specifications

Absolute Maximum Ratings				
Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	100	°C	
Operating Temperature	-40	85	°C	
Lead Solder Temperature		260	°C	10 seconds
Continuous Forward Current		20	mA	
Continuous Reverse Voltage		10	V	

Electro-Optical Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I_{th}		1.5	2.75	mA	
Forward Voltage	V_F	1.6	1.8	2.1	V	$I_F=6\text{ mA}$
Slope Efficiency	η	0.05	0.08	0.12	mW/mA	$I_F=6\text{ mA}$
Series Resistance	R_S	30	45	60	Ω	$I_F=6\text{ mA}$
Wavelength	λ_P	830	850	860	nm	$I_F=6\text{ mA}$ ⁽³⁾
Rise/Fall Time	tr/tf			0.15	ns	$I_F=6\text{ mA}$
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=1GHz
PD Monitor Current	I_M	200		800	uA	$V_R=5V$, $P_{OC}=350\text{uW}$ ⁽²⁾
PD Dark Current	I_d			20	nA	$V_R=5V$
PD Capacitance	C_M		12		pF	$V_{im}=0V$

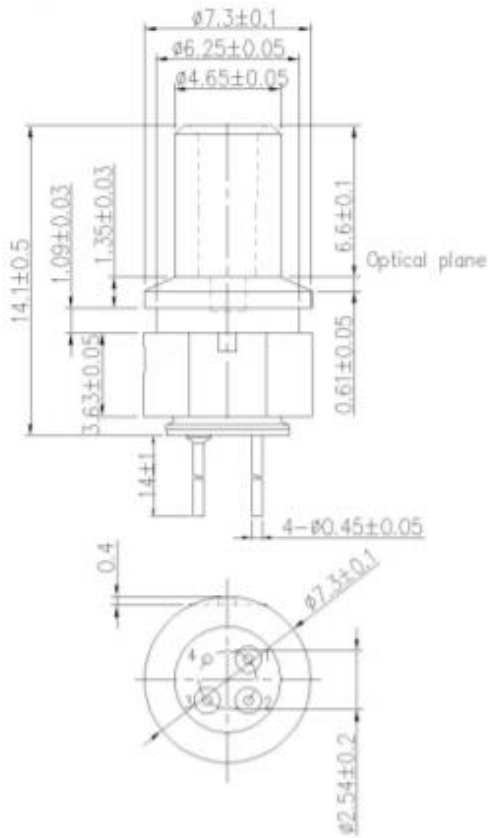
Notes:

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.
3. Minimum and Maximum values are valid over the entire ambient temperature range.

Thermal Characteristics						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
I_{th} Temperature Variation	ΔI_{th}			2.0	mA	$T_A=0\sim 70^\circ\text{C}$
				2.0		$T_A=25\sim 85^\circ\text{C}$
			-0.6			$T_A=-40\sim 25^\circ\text{C}$
η Temperature Coefficient	$\Delta\eta/\Delta T$	-0.7	-0.5		%/ $^\circ\text{C}$	$T_A=25\sim 85^\circ\text{C}$
				0.35		$T_A=-40\sim 25^\circ\text{C}$
λ_P Temperature Coefficient	$\Delta\lambda_P/\Delta T$		0.06		nm/ $^\circ\text{C}$	$T_A=0\sim 70^\circ\text{C}$, $I_F=6\text{ mA}$
Series Resistance	R_S			65	Ω	$T_A=-40^\circ\text{C}$, $I_F=6\text{ mA}$
		30				$T_A=85^\circ\text{C}$, $I_F=6\text{ mA}$
PD Monitor Current Coefficient	ΔI_M			0.15	%/ $^\circ\text{C}$	$T_A=25\sim 85^\circ\text{C}$
				-0.15		$T_A=-40\sim 25^\circ\text{C}$



Outline Dimensions (unit: mm)



Pin Configuration

TSC-P85A416-3M		TSC-P85A426-3M	
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.