Transmitter Optical Sub-Assembly (TOSA)

(Up to 25Gbps, 850nm, 1310nm, LC receptacle)

DATASHEET

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Agiltron Transmitter Optical Sub-Assemblies (TOSA) are high-performance devices packaged for data communication links. These transmitters are specifically designed to efficiently launch optical power into fibers ranging from single-mode to multimode for up to 25GHz data transmission speed. These products combine features including high bandwidth, high optical power, and efficient coupled power, making them ideal transmitters for integration into all types of data communication equipment.

The mechanical package is intended for PC Board or panel mounting.

Features

- High Bandwidth
- Low Threshold Current
- Wide Operating Temperature

Applications

- Ethernet
- Video Transmission

Specifications

Parameter		Min	Typical	Max	Unit
Output Power		0.5		1.0	mW
Threshold Current	T = 25°C		12		mA
	T = 85°C		30		mA
Supply Current (CW)				100	mA
Wavelength		850		1550	nm
Spectral Bandwidth (Iop=6mA, RMS)				1	nm
Rise/Fall time (CW)		20			ps
Differential Resistance (Iop=6mA, RMS)		25	50	65	Ω
Monitor Current (PD) (Iop=6mA, RMS)				1	mA
Dark Current (PD) (-3V, P=0mW)				100	nA
Storage Temperature			-40 ~ +100		°C
Operating Temperature			-5 ~ +85		°C
Lead Solder Temperature			260		°C
PD Max Forward Current			1		mA
PD Max Reverse Voltage			5		V

Rev 11/11/25

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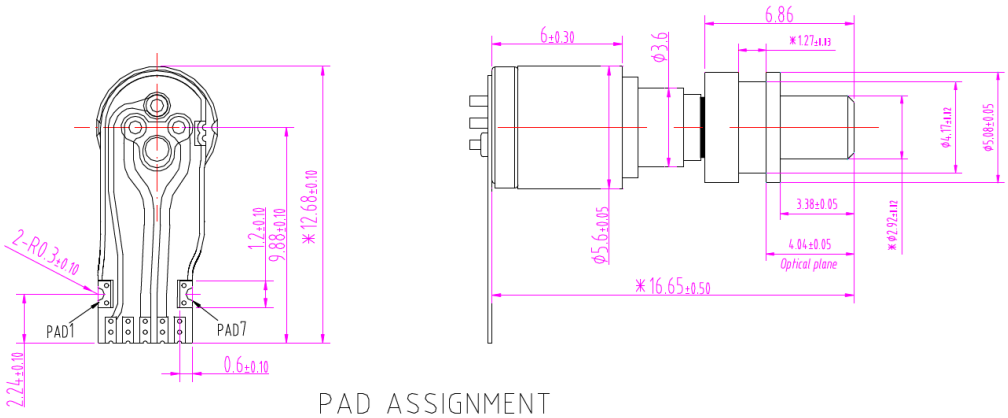
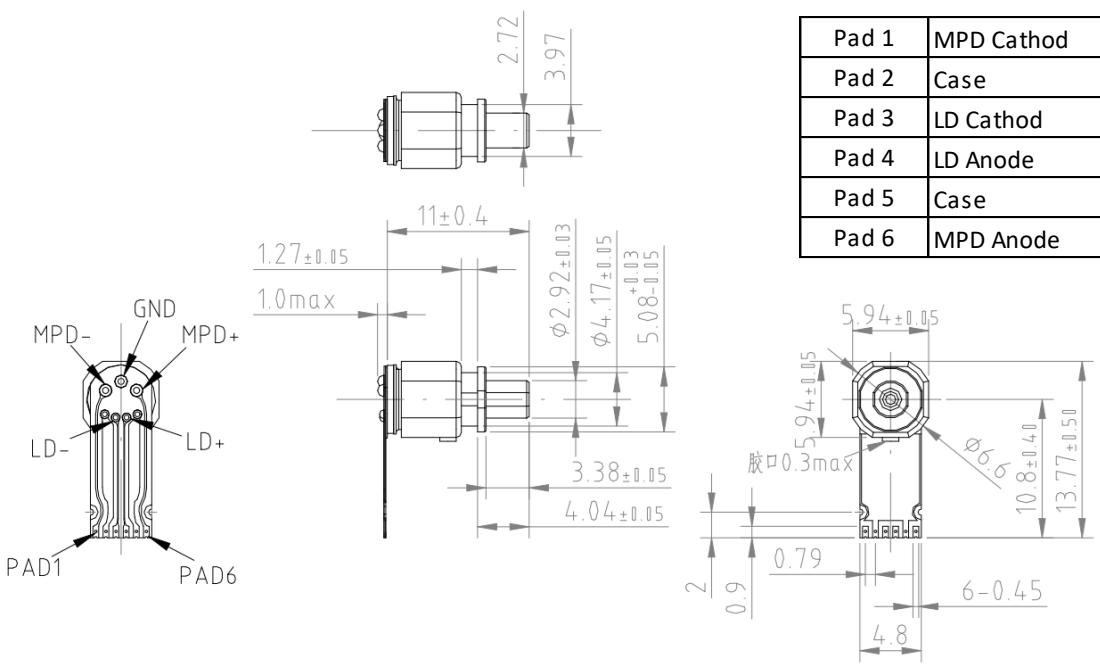
Mechanical Dimensions (mm)



PAD ASSIGNMENT

PAD1	PD+/CASE
PAD2	PD-
PAD3	PD+/CASE
PAD4	LD-
PAD5	LD+
PAD6	PD+/CASE
PAD7	PD+/CASE

25Gbps 1310nm TOSA with DFB transmitter, LC receptacle, and flexible PCB



Pad 1	MPD Cathod
Pad 2	Case
Pad 3	LD Cathod
Pad 4	LD Anode
Pad 5	Case
Pad 6	MPD Anode

25Gbps 850nm TOSA with flexible circuit and LC receptacle

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

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(Up to 25Gbps, 850nm, 1310nm, LC receptacle)

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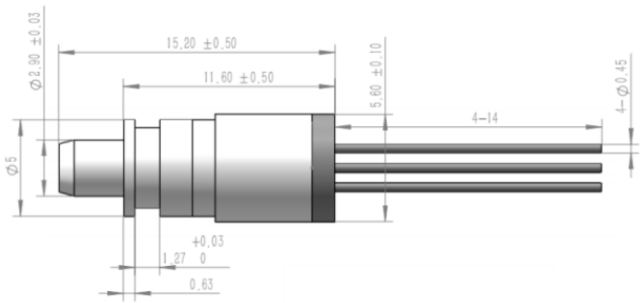
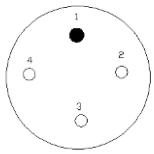
Mechanical Dimensions (mm)





1	2	3	4
GND	LD-	PD+	PD-/LD+

2.5Gbps 1310nm TOSA with LC receptacle

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Ordering Information (Part Number)

	□□□□	□	□	□	□	□
Prefix	**Wavelength**	**Bandwidth**	**Model**	**Flexible PCB [2]**	**Package**	**Receptacle**
TOSA-	850nm = 0850 1310nm = 1310 1550nm = 1550 Special = 0000	0.1GHz = 1 1.25 GHz = 2 2.5 GHz = 3 10GHz = 4 25 GHz = 5 Special = 0	Single mode = 1 Multimode [1] = 2	Yes = 1 No = 2	Standard = 1 Special = 0	LC = 1 Special = 0

[1]. For 850nm only
[2]. Flexible PCB is for device with 10GHz or higher bandwidth.

Application Notes

Fiber Core Alignment
Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

Fiber Cleanliness
Fibers with smaller core diameters (<5 μm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power
Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the how handling by expanding the core side at the fiber ends.

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