



## FEATURES

- Duplex LC Connector
- Support hot-pluggable
- Metal with lower EMI
- Excellent ESD protection
- DFB Transmitter and PIN Receiver
- Typical Center Wavelength: 1310nm
- Max link length up to 10Km on SMF
- RoHS Compliant and Lead-Free
- Digital diagnostic compatible with SFF-8472
- Case Operation Temperature: -5°C~+70°C
- Single 3.3V power supply and Low power dissipation <1.0W

## ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Maximum Supply Voltage	Vcc3	-0.5	-	4.0	V	
Storage Temperature	TS	-40	-	85	°C	
Operating Humidity	-	5	-	95	%	
Maximum Supply Voltage	Vcc3	-0.5	-	4.0	V	

# SA-SFPP-10GLD

10.3125Gbps Long Wavelength SFP+ Optical Transceiver

## DESCRIPTION

SA-SFPP-10GLD is specifically designed for the high performance integrated duplex data transmission over single mode optical fiber. This transceiver module is compliant with the Small Form-factor Pluggable Plus (SFP+) Multisource Agreement (SFF-8431 Rev4.1). This transceiver type is specifically optimized for transport of serial data at up to 10.3125 Gbps, with link characteristics complied with 10-Gigabit Ethernet 10GBASE-LR base IEEE 802.3ae and 10G Fibre Channel 1200-SM-LL-L. 5

## APPLICATIONS

- 10GBASE-LR/LW 10G Ethernet
- 1200-SM-LL-L 10G Fibre Channel

## RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	V <sub>CC</sub>	3.13	3.30	3.47	V	
Power Supply Current	I <sub>CC</sub>	-	-	300	mA	
Case Operating Temperature	T <sub>op</sub>	-5	-	70	°C	
Data Rate	-	-	10.3125	-	Gb/s	
9/125um G652 SMF	L <sub>max</sub>	-	-	10	Km	
Baud Rate Tolerance		-100		+100	ppm	

## PERFORMANCE SPECIFICATIONS - TRANSMITTER

(-5°C<T<sub>c</sub><+70°C; +2.97V<V<sub>CC</sub><+3.63V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes	
Input Differential Impedance	Z <sub>in</sub>	90	100	110	Ω		
Tx_Fault	Normal Operation	VOL	-0.3	-	0.4	V	
	Transmitter Fault	VOH	2.4	-	V <sub>CC</sub>	V	
TX_Disable (Note 1)	Disable	VIH	2.0	-	V <sub>CC</sub> +0.3	V	
	Enable	VIL	-0.3	-	0.8	V	
Average Launch Optical Power	P <sub>out</sub>	-8.2	-	0.5	dBm		
Optical modulation amplitude	P(OMA)	-5.2	-2		dBm		
Extinction Ratio	ER	3.5	5	-	dB		
Transmitter and Dispersion Penalty	TDP	-	-	3.2	dB		
Average Launch power of OFF TX	P <sub>off</sub>	-	-	-30	dBm		
Optical Wavelength	λ	1260		1355	nm		
Side mode Suppression Ratio	SMSR	30			dB		
Relative Intensity Noise(OMA)	RIN12			-130	dB/Hz		
Optical Return Loss Tolerance	ORLT			12	dB		
Eye Diagram	Compatible with IEEE 802.3-2005						

## PERFORMANCE SPECIFICATIONS - RECEIVER

(-5°C < T<sub>c</sub> < +70°C; +2.97V < V<sub>cc</sub> < +3.6V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Differential Data Output Swing	V <sub>out</sub>	300	-	800	mV	
Output Differential Impedance	Z <sub>in</sub>	90	100	110	Ω	
Receiver sensitivity (max) in OMA	PIN-SENS(OMA)	-	-	-12.6	dBm	BER < 10E-12; PRBS2^31
Receiver Sensitivity	PIN-SENS	-	-	-14.4	dBm	
Overload		0.5	-	-	dBm	
Receiver reflectance	-	-	-	-12	dB	
Optical Center Wavelength	λ <sub>C</sub>	1270	-	1600	nm	
Los Assert		-32	-	-	dBm	
Los De-assert		-	-	-18	dBm	
Los hysteresis		0.5	-	-	dB	

## REGULATORY COMPLIANCE<sup>1</sup>

- Compliant with SFP+ MSA: SFF-8431 Rev4.1
- Compliant with SFF-8472 Rev4.4
- Compliant with IEEE802.3ae
- ESD to the Electrical PINs: compatible with MIL-STD-883E Method 3015.7
- ESD to the Duplex LC Receptacle: compatible with IEC 61000-4-2 GR-1089-CORE
- Immunity compatible with IEC 61000-4-3
- EMI compatible with FCC Part 15 Class B EN55022 Class B (CISPR 22B) VCCI Class B
- Laser Eye Safety compatible with FDA 21CFR 1040.10 and 1040.11 EN60950, EN (IEC) 60825-1,2
- RoHS compliant with 2002/95/EC 4.1&4.2 2005/747/EC

## MONITOR SPECIFICATION

The digital diagnostic monitoring interface also defines another 256-byte memory map in EEPROM, which makes use of the 8 bit address 1010001X (A2h). The monitoring specification of this product is described in this table.

<sup>1</sup> The listed certifications are issued for markets in different regions. For the current status of the listed certifications in your region, please contact an authorized Starview representative.

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## MONITOR SPECIFICATION (CONT.)

Parameter	Range	Accuracy	Calibration
Temperature	-5 to +85°C	±3°C	Internal
Supply Voltage	2.97 to 3.63V	±3%	Internal
Bias Current	3mA to 80mA	±10%	Internal
TX Power	-8.2~0.5dBm	±3dB	Internal
RX Power	-15~0.5dBm	±3dB	Internal

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