



Shenzhen Sinovo Telecom Co.,Ltd

● Features :

- Duplex LC Connector
- Data Rate 2.125G to 2.488G/s
- CWDM Wavelengths, uncooled DFB laser and pin photodetector for 40KM
- CWDM Wavelengths, uncooled DFB laser and APD photodetector for 80KM
- +3.3V single power supply
- Power consumption less than 1W
- Operating case temp
 Standard temp: 0~+70°C
 Industrial temp:-40~+85°C
- Compliant with RoHS

● Absolute Maximum Ratings

Table 1- Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Supply Voltage	V _{CC3}	-0.5	-	+3.6	V	
Storage Temperature	T _s	-40	-	85	°C	
Operating Humidity	RH	+5	-	+95	%	

● Recommended Operating Conditions

Table 2- Recommended operating Conditions

Parameter		Symbol	Min.	Typical	Max.	Unit	Notes
Operating Case Temperature	Standard	T _c	0	-	+70	°C	
	Industrial		-40	-	+85	°C	
Power Supply Voltage		V _{cc}	3.14	3.3	3.47	V	
Power Supply Current		I _{cc}	-	-	300	mA	



Power Dissipation	Pd	-	-	1	W	
Data Rate		-	2488	-	Mbps	

● Electrical Characteristics

Table 3- Electrical Characteristics

Parameter	Symbol	Unit	Min.	Typ.	Max.	Notes
Electrical Characteristics						
Supply Current	I _{CC}	mA	-	-	300	
Differential Data Input Swing		mV	200	-	2400	1
Differential Data Output Swing		mV	1450	1600-	1750	2
Differential Data input impedance		Ω	-	100	-	1
Signal Level(LVTTL H)		V	2.4	-	V _{CC}	
Signal Level(LVTTL L)		V	0	-	0.8	

Note:

1. Internally AC coupled, input termination may be required for CML or LVPECL applications.
2. Internally AC coupled, CML differential output stage.

● Optical Characteristics

Table 4-Optical Characteristics

SOSCB-5424-40D (CWDM DFB and PIN,40KM, DDMI,0~+70°C)

SOSCB-5424-40ID (CWDM DFB and PIN,40KM, DDMI, -40~+85°C)

Parameter	Symbol	Unit	Min.	Typ.	Max.	Notes
Optical transmitter Characteristics						
Data Rate		Mbps	-	2488		
Mean Wavelength	λ	nm	1xx1-6.5	1xx1	1xx1+6.5	
Average Launch power Tx_off	P _{off}	dBm	-	-	-45	
Launch Optical Power	P ₀	dBm	-5	-	0	1
Extinction Ratio	ER	dB	8.2	-	-	
Optical Jitter Random	JR	ps	-	-	147	
Optical Jitter	JD	ps	-	-	80	

SFP 2.125G&2.488G CWDM Transceiver
SOSC-4524-40D SOSC-5424-40D
SOSC-4524-80D SOSC-5424-80D



Deterministic						
Total Jitter	Tj	ps	-	-	200	
Optical Rise/Fall time	Tr/tf	ps	-	-	260	
Eye Diagram	Compliant with Telcordia GR-253-CORE and ITU-T G.957					
Optical receive Characteristics						
Data Rate		Mbps	-	2488	-	
Receiver Sensitivity		dBm	-	-	-19	2
Overload Input Optical Power	P _{IN}	dBm	-3	-	-	2
Center Wavelength Range	λ _c	nm	1260	-	1625	
LOS	LOS _A	dBm	-30	-	-	
	LOS _D		-	-	-20	
LOS Hysteresis		dB	0.5	-	-	

Note:

1. Coupled into 9/125 SMF.
2. Measured with PRBS 2²³-1 test pattern @2.488Gbps.BER=10E-12

Table 5-Optical Characteristics

SOSCB-5424-80D (CWDM DFB and APD,80KM, DDMI,0~+70°C)

SSSCB-5424-80ID (CWDM DFB and APD,80KM, DDMI, -40~+85°C)

Parameter	Symb ol	Unit	Min.	Typ.	Max.	Notes
Optical transmitter Characteristics						
Data Rate		Mbps	-	2488	-	
Mean Wavelength	λ	nm	1xx1-6.5	1xx1	1xx1+6.5	
Average Launch power Tx _{off}	P _{off}	dBm	-	-	-45	
Launch Optical Power	P ₀	dBm	0	-	+5	1
Extinction Ratio	ER	dB	8.2	-	-	
Optical Jitter Random	JR	ps	-	-	147	
Optical Jitter Deterministic	JD	ps	-	-	80	
Total Jitter	Tj	ps	-	-	200	
Optical Rise/Fall time	Tr/tf	ps	-	-	260	
Eye Diagram	Compliant with Telcordia GR-253-CORE and					

SFP 2.125G&2.488G CWDM Transceiver
 SOSC-4524-40D SOSC-5424-40D
 SOSC-4524-80D SOSC-5424-80D



		ITU-T G.957					
Optical receive Characteristics							
Data Rate		Mbps	-	2488	-		
Receiver Sensitivity		dBm	-	-	-27	2	
Overload Input Optical Power	P_{IN}	dBm	-8	-	-	2	
Center Wavelength Range	λ_c	nm	1260	-	1625		
SD(LVTTL)	Optical Assert	dBm	-38	-	-		
	Optical Deassert		-	-	-28		
SD Hysteresis		dB	0.5	-	-		

Note:

1. Coupled into 9/125 SMF.
2. Measured with PRBS $2^{23}-1$ test pattern @2.488Gbps.BER=10E-12



● Recommended Interface Circuit

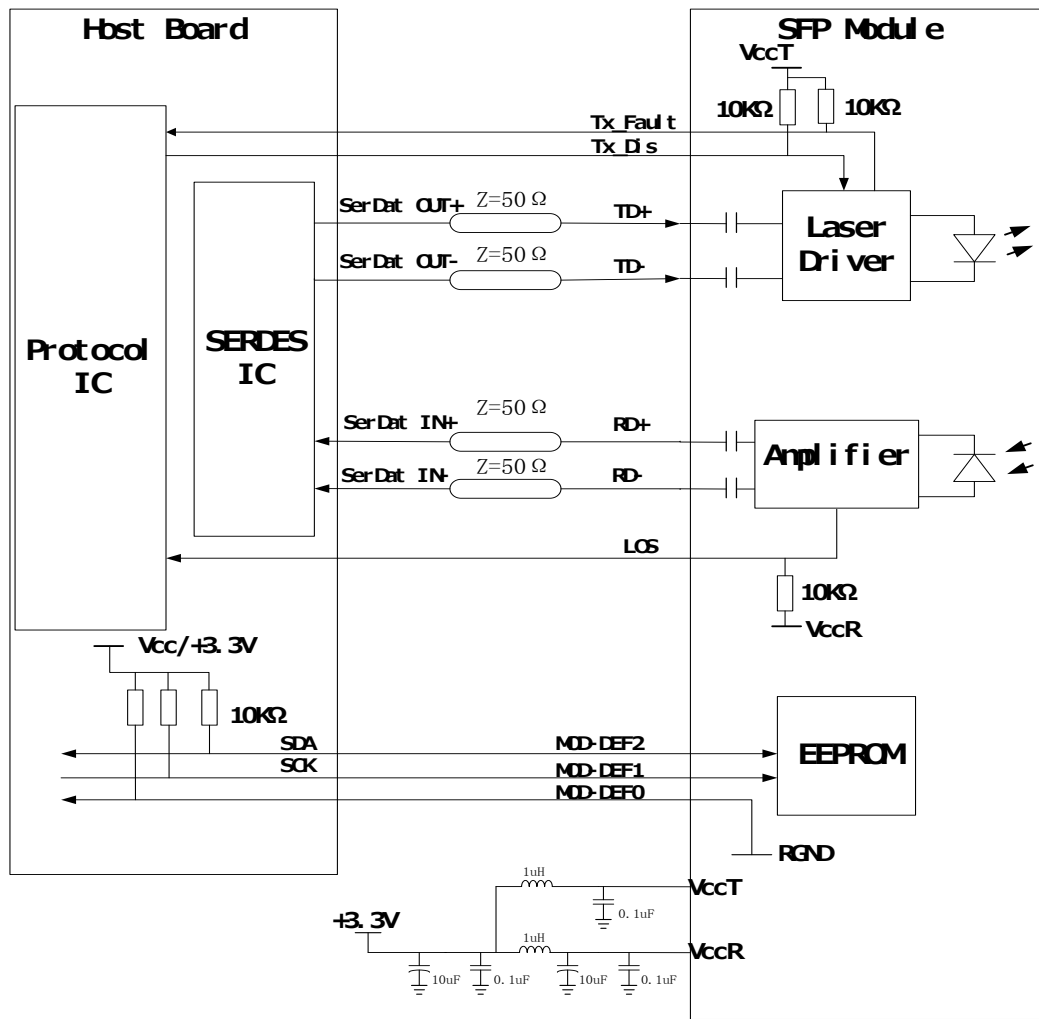


Figure 1, Recommended Interface Circuit

● Recommended Host Board Power Supply Circuit

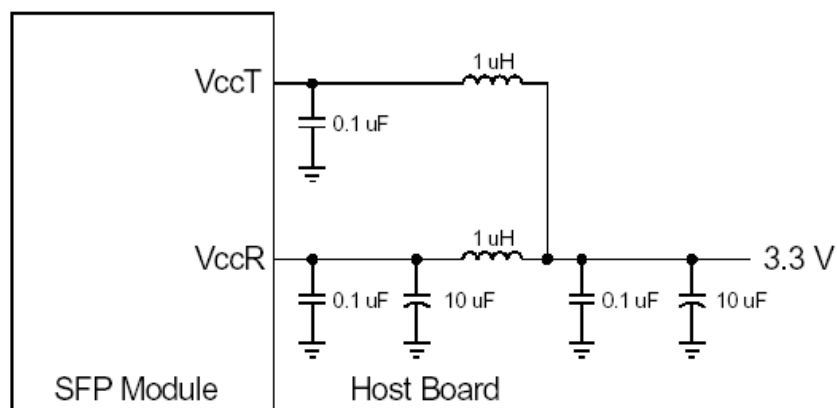




Figure 2, Recommended Host Board Power Supply Circuit

● Pin arrangement

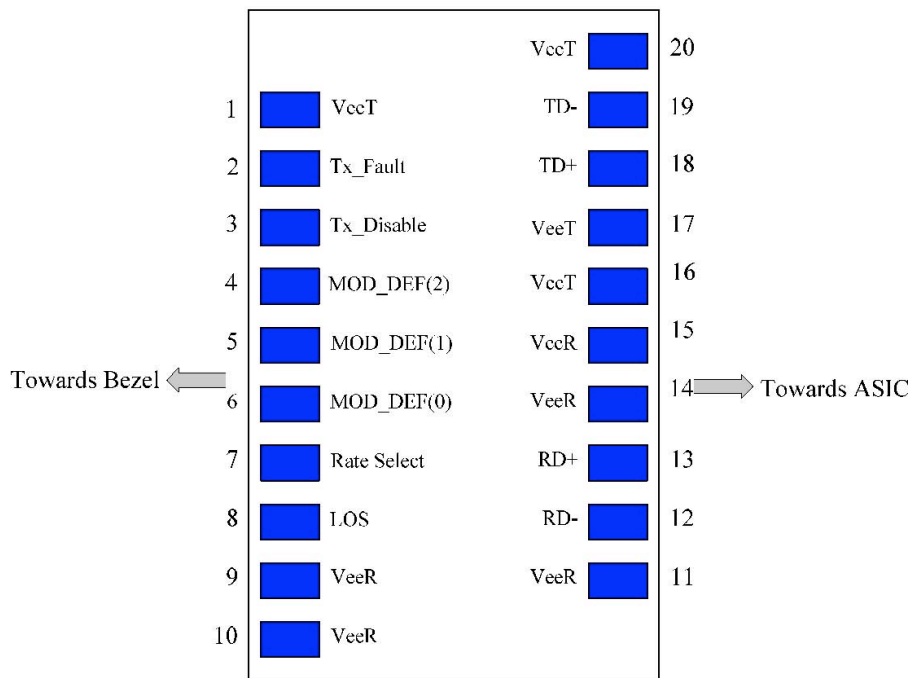


Figure 3, Pin View

Table 6-Pin Function Definitions

Pin	Name	FUNCTION	Plug Seq.	Notes
1	VeeT	Transmitter Ground	1	
2	TX Fault	Transmitter Fault Indication	3	Note 1
3	TX Disable	Transmitter Disable	3	Note 2, Module disables on high or open
4	MOD-DEF2	Module Definition 2	3	Note 3, Data line for Serial ID.
5	MOD-DEF1	Module Definition 1	3	Note 3, Clock line for Serial ID.
6	MOD-DEF0	Module Definition 0	3	Note 3, Grounded within the module.
7	Rate Select	Not Connect	3	Function not available
8	LOS	Loss of Signal	3	Note 4

SFP 2.125G&2.488G CWDM Transceiver
SOSC-4524-40D SOSC-5424-40D
SOSC-4524-80D SOSC-5424-80D



9	VeeR	Receiver Ground	1	Note 5
10	VeeR	Receiver Ground	1	Note 5
11	VeeR	Receiver Ground	1	Note 5
12	RD-	Inv. Received Data Out	3	Note 6
13	RD+	Received Data Out	3	
14	VeeR	Receiver Ground	1	Note 5
15	VccR	Receiver Power	2	3.3 ± 5%
16	VccT	Transmitter Power	2	3.3 ± 5%
17	VeeT	Transmitter Ground	1	Note 5
18	TD+	Transmit Data In	3	
19	TD-	Inv. Transmit Data In	3	
20	VeeT	Transmitter Ground	1	Note 5

Note:

1. TX Fault is open collector output which should be pulled up externally with a 4.7K ~10KΩ resistor on the host board to voltage between 2.0V and V_{CC}+0.3V. Logic 0 indicates normal operation; logic 1 indicates a laser fault of some kind. In the low state, the output will be pulled to less than 0.8V.
2. TX Disable input is used to shut down the laser output per the state table below. It is pulled up within the module with a 4.7~ 10K resistor.
 Low (0- 0.8V): Transmitter on
 Between (0.8V and 2V): Undefined
 High (2.0 – VccT): Transmitter Disabled
3. MOD-DEF 0, 1, 2. These are the module definition pins. They should be pulled up with a 4.7~10K resistor on the host board to supply less than VccT+0.3V or VccR+0.3V.
 MOD-DEF 0 is grounded by the module to indicate that the module is present.
 MOD-DEF 1 is clock line of two wire serial interface for optional serial ID.
 MOD-DEF 2 is data line of two wire serial interface for optional serial ID.
4. LOS (Loss of signal) is an open collector output, which should be pulled up with a 4.7k~10kΩ resistor on the host board to a voltage between 2.0V and Vcc+0.3V. Logic 0 indicates normal operation; logic 1 indicates loss of signal. In the low state, the output will be pulled to less than 0.8V.
5. These are the differential receiver outputs. They are AC-coupled 100Ω differential lines which should be terminated with 100Ω differential at the user SERDES. The AC coupling is done inside the module and thus not required on the host board.
6. These are the differential transmitter inputs. They are AC-coupled, differential lines with 100Ω differential termination inside the module.



● **Digital Diagnostic Memory Map**

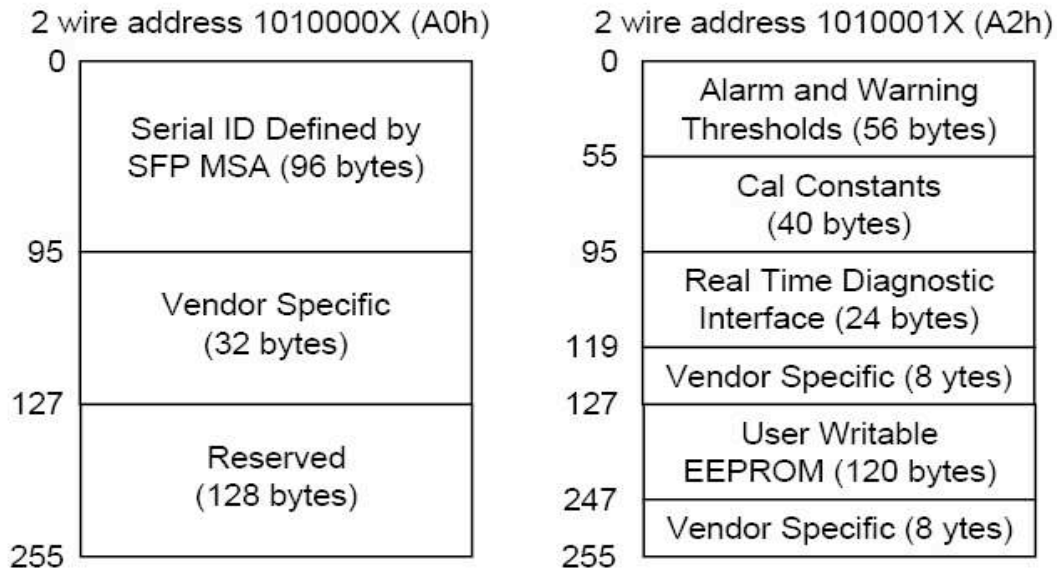


Figure 4, memory map

● **Mechanical Diagram**

SFP 2.125G&2.488G CWDM Transceiver
 SOSC-4524-40D SOSC-5424-40D
 SOSC-4524-80D SOSC-5424-80D

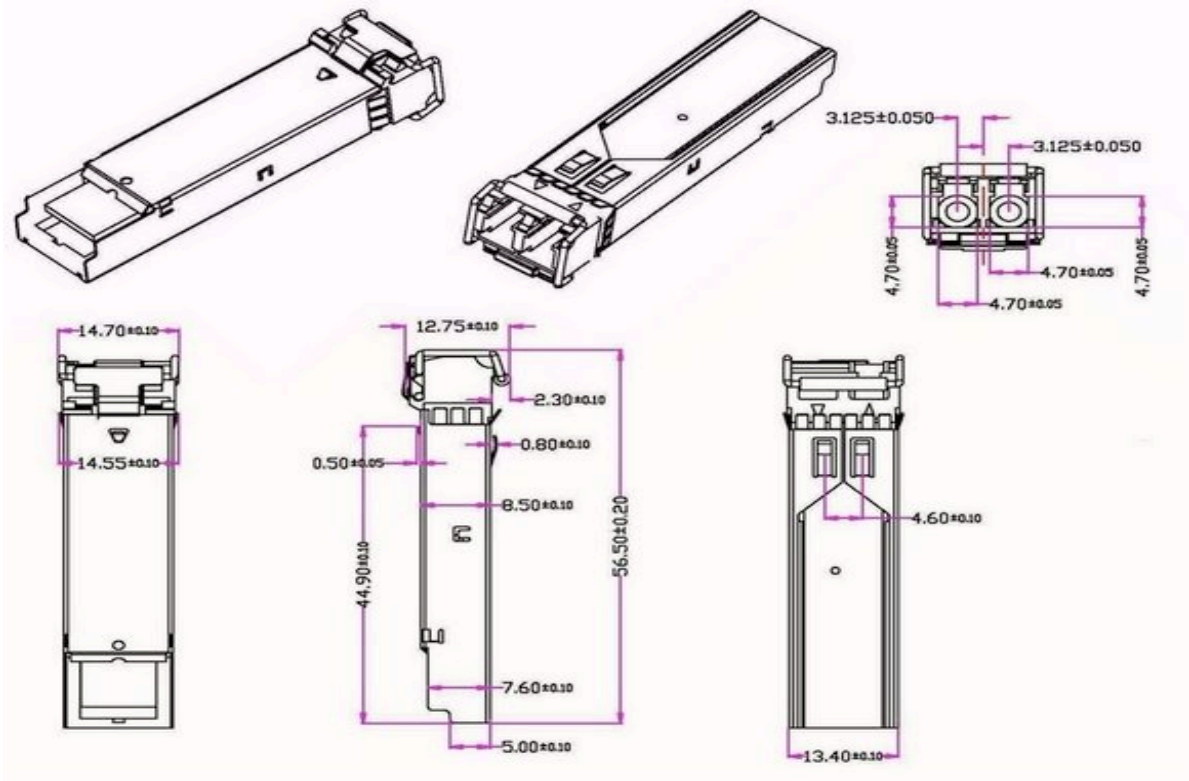


Figure 5, mechanical diagram

● Order Information

- SOSC-4524-40D (CWDM DFB and PIN,40KM, DDMI,0~+70°C)
- SOSC -4524-40ID (CWDM DFB and PIN,40KM, DDMI,-40~+85°C)
- SOSC-4524-80D (CWDM DFB and APD,80KM, DDMI,0~+70°C)
- SOSC -4524-80ID (CWDM DFB and APD,80KM, DDMI,-40~+85°C)

Table 7-λc Wavelength Guide

λc Wavelength Guide					
Code	λc	unit	Code	λc	unit
27	1270	nm	45	1450	nm
29	1290	nm	47	1470	nm
31	1310	nm	49	1490	nm
33	1330	nm	51	1510	nm
35	1350	nm	53	1530	nm
37	1370	nm	55	1550	nm

SFP 2.125G&2.488G CWDM Transceiver
SOSC-4524-40D SOSC-5424-40D
SOSC-4524-80D SOSC-5424-80D



39	1390	nm	57	1570	nm
41	1410	nm	59	1590	nm
43	1430	nm	61	1610	nm

● Notice

SINOVO reserves the right to make changes to or discontinue any optical link product or service identified in this publication, without notice, in order to improve design and/or performance. Applications that are described herein for any of the optical link products are for illustrative purposes only. SINOVO makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

● Contact

Shenzhen Sinovo Telecom Co.,Ltd

Tel:+86(0)0755-32959919 Fax:+86(0)755 32959918

Email: sales@sinovocorp.com

Web:www.sinovocorp.com

Factory ADD: 5/F Chuang Park,Taoyuan Street,Baoan District,Shenzhen,China 518000

Head Quarter:11/F,Taibang Technology Building,Gaoxin South 4th,Science and Technology Park South,Nanshan,Shenzhen,China 518040