

Bi-Di SFP 1.25Gb/s Optical Transceiver without DDMI
(OP-MP435S1SD-3 & OP-MP453S1SD-3)
Hot Pluggable, 1310/1550 SFP with SC Receptacle



Features:

- * Single Mode bi-directional Transmission
- * SFP Multi-source Package with SC Receptacle
- * Up to 1.25Gb/s Data Links
- * Hot-Pluggable Capability
- * Single +3.3V Power Supply
- * Isolation > 30dB, Cross Talk < -45dB
- * Compliant with Specifications for IEEE802.3Z
- * Compliant with Bellcore TA-NWT-000983
- * Eye Safety Designed to Meet Laser Class1, Compliant with IEC60825-1

Applications:

- * Gigabit Ethernet
- * Fiber Channel
- * WDM Application

Specification:

Electrical and Optical Characteristics: (Condition: $T_a=T_{OP}$)

	+/-TX_DAT	200		2400	mV p-p
	I _{CC}		130	180	mA
	V _{IL}	0		0.8	V
	V _{IH}	2.0		V _{CC}	V
	V _{OL}	0		0.8	V
	V _{OH}	2.0		V _{CC}	V
	+/-RX_DAT	600		1400	mV p-p
	V _{OL}	0		0.8	V
	V _{OH}	2.0		V _{CC}	V

Transmitter Section (OP-MP435L1SN-3):

	B	-	1250	-	Mb/s
	c	1270	1310	1355	nm
	(RMS)	-	-	4	nm
	P _o	-9.5	-	-3	dBm
	EXT	9	-	-	dB
	V _{IHS}	V _{CC} -1.16	-	V _{CC} -0.89	V

Shenzhen Optostar Co., Ltd.

Address: 14F, Building A, Haide Building, the Intersection of Nanxin Road
 and Haide Second Road Nanshan District, Shenzhen, P.R. China,
 Tel: 0086 - 755 - 2640 0288 Fax: 0086 - 755 - 2641 1001
 E-mail: info@optostar.com.cn Http://www.optostar.com.cn

Bi-Di SFP 1.25Gb/s Optical Transceiver without DDMI
(OP-MP435S1SD-3 & OP-MP453S1SD-3)
Hot Pluggable, 1310/1550 SFP with SC Receptacle



	V_{ILS}	$V_{cc}-1.82$	-	$V_{cc}-1.48$	V
	I_{CC}	-	90	150	mA
Compliant with IEEE802.3Z					
Receiver Section (OP-MP435L1SN-3):					
	P_{min}	-	-	-21	dBm
	P_{MAX}	-3	-	-	dBm
	SD_{HIGH}	-	-	-22	dBm
	SD_{LOW}	-32	-	-	dBm
	-	-	3.0	-	dBm
	V_{OH}	$V_{cc}-1.03$	-	$V_{cc}-0.89$	V
	V_{OL}	$V_{cc}-1.82$	-	$V_{cc}-1.63$	V
	c	1480	1550	1580	nm
	I_{CC}	-	80	110	mA

Transmitter Section (OP-MP453L1SN-3):

	B	-	1250	-	Mb/s
	c	1480	1550	1580	nm
	(-20dB)	-	-	1	nm
	P_o	-12	-	-9	dBm
	EXT	9	-	-	dB
	V_{IHS}	$V_{cc}-1.16$	-	$V_{cc}-0.89$	V
	V_{ILS}	$V_{cc}-1.82$	-	$V_{cc}-1.48$	V
	I_{CC}	-	90	150	mA
Compliant with IEEE802.3Z					

Receiver Section (OP-MP453L1SN-3):

	P_{min}	-	-	-21	dBm
	P_{MAX}	-3	-	-	dBm
	SD_{HIGH}	-	-	-22	dBm
	SD_{LOW}	-32	-	-	dBm
	-	-	3.0	-	dBm
	V_{OH}	$V_{cc}-1.03$	-	$V_{cc}-0.89$	V
	V_{OL}	$V_{cc}-1.82$	-	$V_{cc}-1.63$	V

Shenzhen Optostar Co., Ltd.

Address: 14F, Building A, Haide Building, the Intersection of Nanxin Road and Haide Second Road Nanshan District, Shenzhen, P.R. China,
 Tel: 0086 - 755 - 2640 0288 Fax: 0086 - 755 - 2641 1001
 E-mail: info@optostar.com.cn Http://www.optostar.com.cn

Bi-Di SFP 1.25Gb/s Optical Transceiver without DDMI
(OP-MP435S1SD-3 & OP-MP453S1SD-3)
Hot Pluggable, 1310/1550 SFP with SC Receptacle



	c	1260	1310	1360	nm
	I _{CC}	-	80	110	mA

Absolute Maximum Ratings:

	T _{ST}	-40	+85		
	T _{IP}	-40	+80		
	T _{CC}	0	+5		V

Recommended Operating Environment:

	V _{CC}	+3.1	+3.3	+3.5	V
	T _{OP}	-40	-	+80	

Timing Characteristics:

	t _{off}		3	10	usec
	t _{on}		0.5	1	msec
	t _{int}		30	300	msec
	t _{fault}		20	100	usec
	t _{reset}	10			usec
	T _{A,RX_LOS}			100	usec
	T _{d,RX_LOS}			100	usec

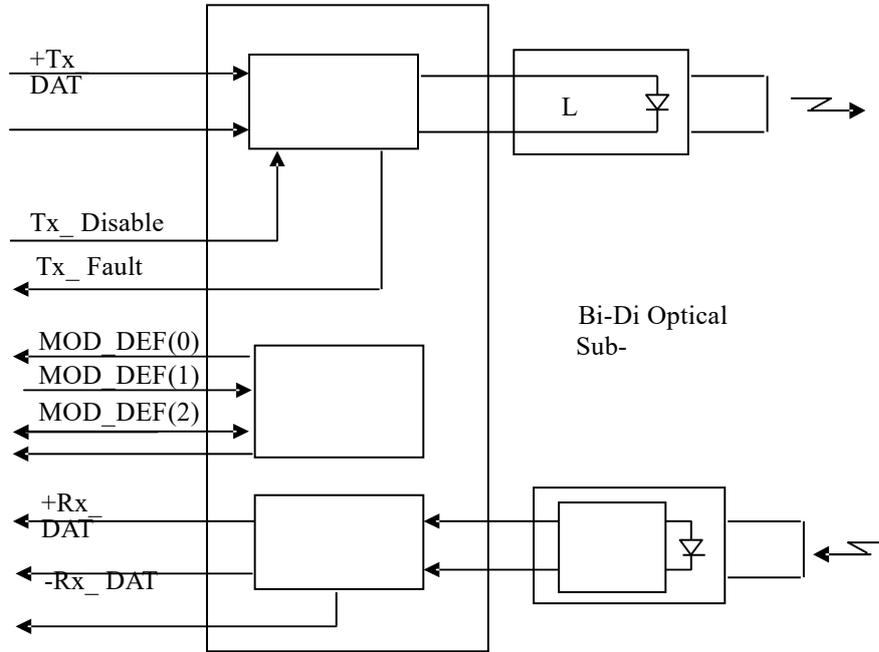
Shenzhen Optostar Co., Ltd.

Address: 14F, Building A, Haide Building, the Intersection of Nanxin Road and Haide Second Road Nanshan District, Shenzhen, P.R. China,
 Tel: 0086 - 755 - 2640 0288 Fax: 0086 - 755 - 2641 1001
 E-mail: info@optostar.com.cn Http://www.optostar.com.cn

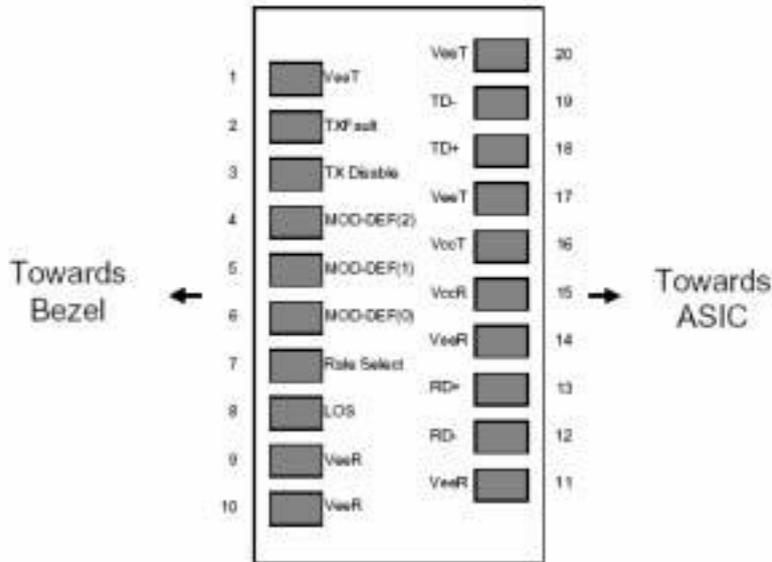
Bi-Di SFP 1.25Gb/s Optical Transceiver without DDMI
(OP-MP435S1SD-3 & OP-MP453S1SD-3)
Hot Pluggable, 1310/1550 SFP with SC Receptacle



Block Diagram of Transceiver:



Pin Assignment:



Pin out of Connector Block on Host Board

Shenzhen Optostar Co., Ltd.

Address: 14F, Building A, Haide Building, the Intersection of Nanxin Road and Haide Second Road Nanshan District, Shenzhen, P.R. China,
 Tel: 0086 - 755 - 2640 0288 Fax: 0086 - 755 - 2641 1001
 E-mail: info@optostar.com.cn Http://www.optostar.com.cn

Bi-Di SFP 1.25Gb/s Optical Transceiver without DDMI
(OP-MP435S1SD-3 & OP-MP453S1SD-3)
Hot Pluggable, 1310/1550 SFP with SC Receptacle



Pin Description:

Pin	Symbol	Name/Description	Ref.
1	V _{DET}	Transmitter Ground (Common with Receiver Ground)	1
2	T _{FAULT}	Transmitter Fault. Not supported.	
3	T _{DIS}	Transmitter Disable. Laser output disabled on high or open.	2
4	MOD_DEF(2)	Module Definition 2. Data line for Serial ID.	3
5	MOD_DEF(1)	Module Definition 1. Clock line for Serial ID.	3
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	3
7	Rate Select	No connection required	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	4
9	V _{EER}	Receiver Ground (Common with Transmitter Ground)	1
10	V _{EER}	Receiver Ground (Common with Transmitter Ground)	1
11	V _{EER}	Receiver Ground (Common with Transmitter Ground)	1
12	RD-	Receiver Inverted DATA out. AC Coupled	
13	RD+	Receiver Non-inverted DATA out. AC Coupled	
14	V _{EER}	Receiver Ground (Common with Transmitter Ground)	1
15	V _{CCR}	Receiver Power Supply	
16	V _{CCT}	Transmitter Power Supply	
17	V _{DET}	Transmitter Ground (Common with Receiver Ground)	1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	V _{DET}	Transmitter Ground (Common with Receiver Ground)	1

Notes:

1. Circuit ground is internally isolated from chassis ground.
2. Laser output disabled on TDIS >2.0V or open, enabled on TDIS <0.8V.
3. Should be pulled up with 4.7k – 10kohms on host board to a voltage between 2.0V and 3.6V.
MOD_DEF(0) pulls line low to indicate module is plugged in.
4. LOS is open collector output. Should be pulled up with 4.7k – 10kohms on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.

Serial ID Memory Contents:

Address	Size	Identifier	Description
0	1	Identifier	Type of Serial transceiver (03h=SFP)
1	1	Reserved	Extended identifier of type serial transceiver (04h)
2	1	Connector	Code of optical connector type (07=LC)
3-10	8	Transceiver	Gigabit Ethernet 1000Base-SX & Fiber Channel
11	1	Encoding	8B10B (01h)
12	1	BR,Nominal	Nominal baud rate, unit of 100Mbps
13-14	2	Reserved	(0000h)
15	1	Length(9um)	Link length supported for 9/125um fiber, units of 100m
16	1	Length(50um)	Link length supported for 50/125um fiber, units of 10m
17	1	Length(62.5um)	Link length supported for 62.5/125um fiber, units of 10m
18	1	Length(Copper)	Link length supported for copper, units of meters
19	1	Reserved	

Shenzhen Optostar Co., Ltd.

Address: 14F, Building A, Haide Building, the Intersection of Nanxin Road
 and Haide Second Road Nanshan District, Shenzhen, P.R. China,
 Tel: 0086 - 755 - 2640 0288 Fax: 0086 - 755 - 2641 1001
 E-mail: info@optostar.com.cn Http://www.optostar.com.cn

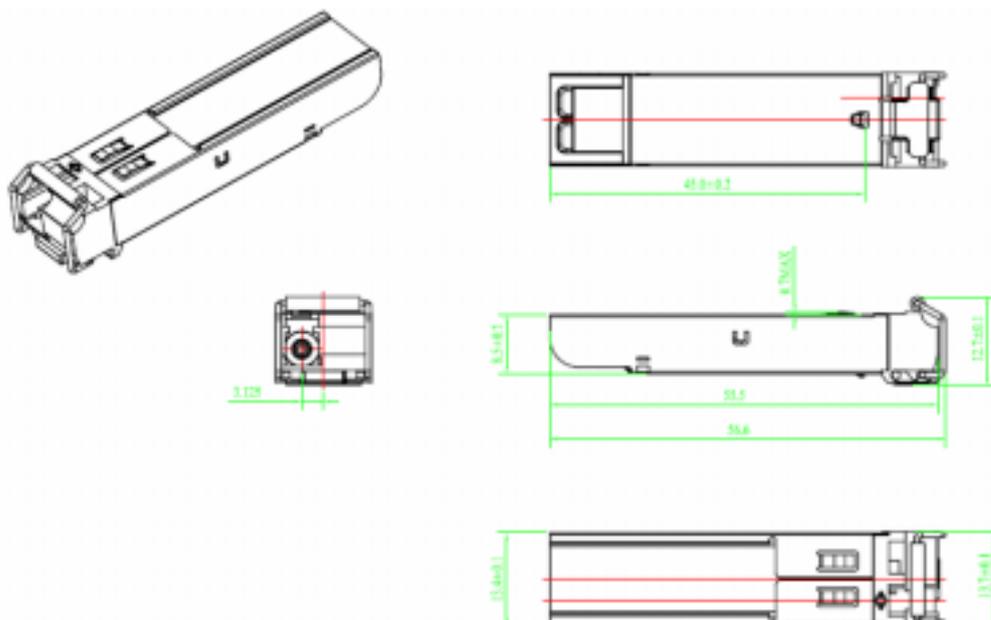
Bi-Di SFP 1.25Gb/s Optical Transceiver without DDMI (OP-MP435S1SD-3 & OP-MP453S1SD-3)



Hot Pluggable, 1310/1550 SFP with SC Receptacle

20-35	16	Vendor Name	SFP vendor name: Optostar
36	1	Reserved	
37-39	3	Vendor OUI	SFP transceiver vendor OUI ID
40-55	16	Vendor PN	Part Number: "OP-MP-xxxxxx" (ASCII)
56-59	4	Vendor rev	Revision level for part number
60-62	3	Reserved	
63	1	CCID	Least significant byte of sum of data in address 0-62
64-65	2	Option	Indicates which optical SFP signals are implemented (001Ah = LOS, TX_FAULT, TX_DISABLE all supported)
66	1	BR, max	Upper bit rate margin, units of %
67	1	BR, min	Lower bit rate margin, units of %
68-83	16	Vendor SN	Serial number (ASCII)
84-91	8	Date code	Optostar's Manufacturing date code
92-94	3	Reserved	
95	1	CCEX	Check code for the extended ID Fields (addresses 64 to 94)
96-127	32	Readable	Optostar specific date, read only

Mechanical Dimensions:



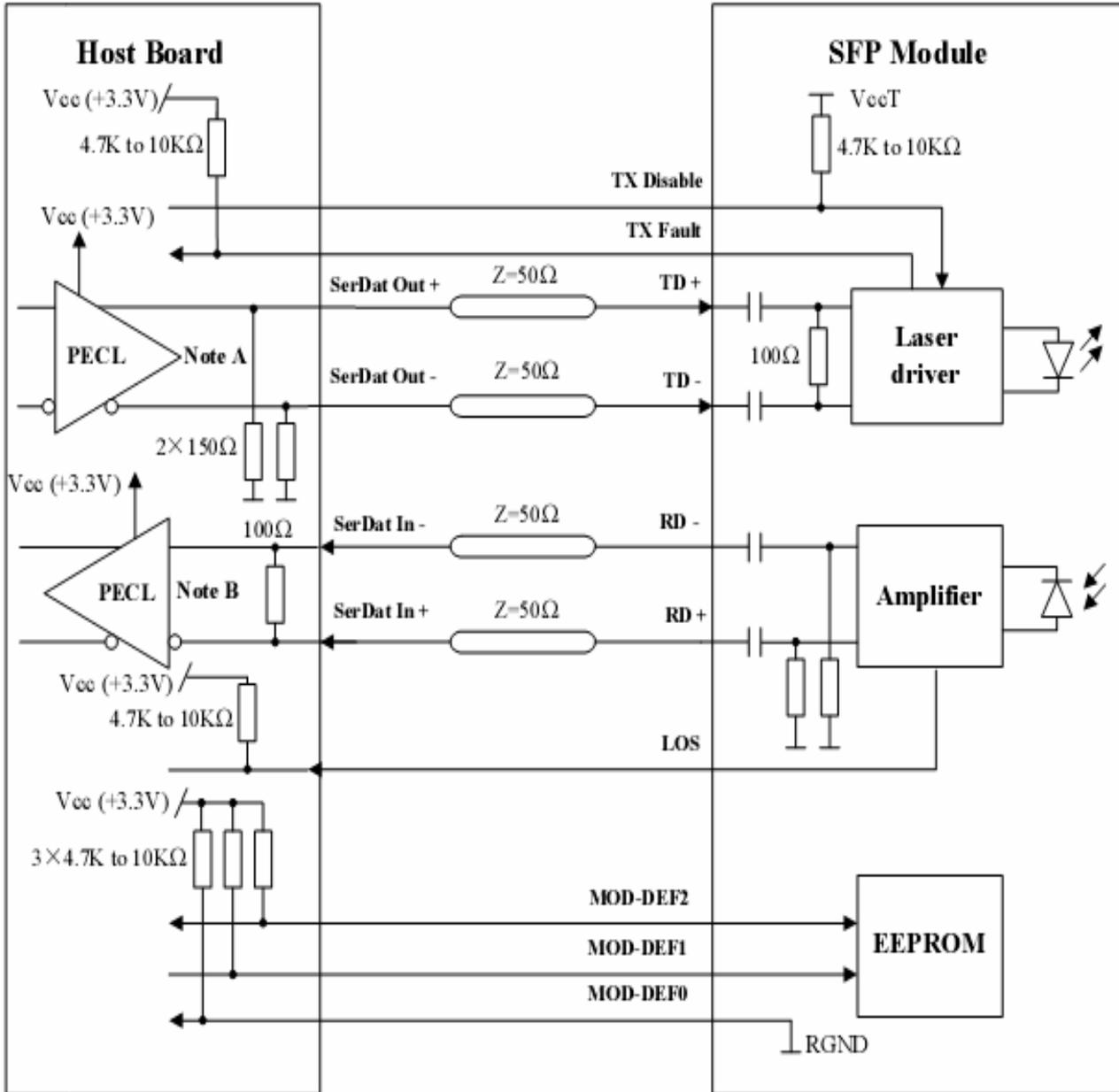
Shenzhen Optostar Co., Ltd.

Address: 14F, Building A, Haide Building, the Intersection of Nanxin Road and Haide Second Road Nanshan District, Shenzhen, P.R. China,
Tel: 0086 - 755 - 2640 0288 Fax: 0086 - 755 - 2641 1001
E-mail: info@optostar.com.cn Http://www.optostar.com.cn

Bi-Di SFP 1.25Gb/s Optical Transceiver without DDMI
(OP-MP435S1SD-3 & OP-MP453S1SD-3)
Hot Pluggable, 1310/1550 SFP with SC Receptacle



Recommended Circuit:



Note A: Circuit assumes open emitter output

Note B: Circuit assumes high impedance internal bias @Vcc-1.3V

https://www.optostar.com.cn/optostar-en/a/Active_products/Optical_Transceiver/SFP_Transcei/2017/0312/36.html

Shenzhen Optostar Co., Ltd.

Address: 14F, Building A, Haide Building, the Intersection of Nanxin Road and Haide Second Road Nanshan District, Shenzhen, P.R. China,
 Tel: 0086 - 755 - 2640 0288 Fax: 0086 - 755 - 2641 1001
 E-mail: info@optostar.com.cn Http://www.optostar.com.cn