

### 845398-B21-PRO

HP® 845398-B21 Compatible TAA Compliant 25GBase-SR SFP28 Transceiver (MMF, 850nm, 100m, DOM, 0 to 70C, LC)

#### Features

- SFF-8402 and SFF-8472 Compliance
- Duplex LC Connector
- Commercial Temperature 0 to 70 Celsius
- Multi-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free



#### Applications:

- 25GBase Ethernet
- Access and Enterprise

#### Product Description

This HP® 845398-B21 compatible SFP28 transceiver provides 25GBase-SR throughput up to 100m over multi-mode fiber (MMF) using a wavelength of 850nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent HP® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

Proline's transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products.



### Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max	Unit
Storage Temperature	T <sub>s</sub>	-40		85	°C
Relative Humidity	RH	5		95	%
Supply Voltage	V <sub>CC</sub>	-0.5		4.0	V
Operating Case Temperature	T <sub>c</sub>	0	25	70	°C

### Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Notes	
Supply Voltage	V <sub>CC</sub>	3.135	3.3	3.465	V		
Data Rate			25.78		GB/s		
Module Supply Current	I <sub>CC</sub>			290	mA		
Power Dissipation	P <sub>D</sub>			1000	mW		
<b>Transmitter</b>							
Input Differential Impedance	Z <sub>IN</sub>		100		Ω		
Differential Data Input Swing	V <sub>IN, P-P</sub>	180		700	mV <sub>P-P</sub>		
TX_FAULT	Transmitter Fault	V <sub>OH</sub>	2.0		V <sub>CC</sub>	V	TX_FAULT
	Normal Operation	V <sub>OL</sub>	0		0.8	V	
TX_DISABLE	Transmitter Disable	V <sub>IH</sub>	2.0		V <sub>CC</sub>	V	TX_DISABLE
	Transmitter Enable	V <sub>IL</sub>	0		0.8	V	
<b>Receiver</b>							
Output Differential Impedance	Z <sub>O</sub>		100		Ω		
Differential Data Output Swing	V <sub>OUT, P-P</sub>	300		850	mV <sub>P-P</sub>	1	
Data Output Rinse Time, Fall Time	t <sub>r</sub> , t <sub>f</sub>		30		Ps	2	
Rx_LOS	Loss of Signal (LOS)	V <sub>OH</sub>	2.0		V <sub>CC</sub>	V	RX_LOS
	Normal Operation	V <sub>OL</sub>	0		0.8	V	

### Notes:

1. Internally AC coupled, but requires a external 100Ω differential load termination.
2. 20-80%
3. LOS is an open collector output. Should be pulled up with 4.7Ω on the host board.

## Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Notes
<b>Transmitter</b>						
Launch Optical Power	$P_o$	-7.6		+2.4	dBm	1
Extinction Ratio	ER	2			dB	
Center Wavelength Range	$\lambda_c$	840	850	860	nm	
Transmitter Dispersion Penalty @25.78GB/s	TWDP			5	dB	
Spectral Width (RMS) @25.78Gb/s	$\Delta\lambda$			0.6	nm	
Optical Return Loss Tolerance	ORLT			12	dB	
Pout @TX-Disable Asserted	$P_{OFF}$			-30	dBm	1
<b>Receiver</b>						
Center Wavelength	$\lambda_c$	840		860	nm	
Receiver Sensitivity (P avg)	S			-11	dBm	2
Receiver Overload (P avg)	$P_{OL}$	2.5			dBm	
Optical Return Loss	ORL	12			dB	
LOS De-Assert	$LOS_D$			-12	dBm	
LOS Assert	$LOS_A$	-30			dBm	
LOS Hysteresis		0.5			dB	

### Notes:

- 50/125 $\mu$ m fiber with NA = 0.2, 62.5/125 $\mu$ m fiber with NA = 0.275.
- Measured with PRBS 231-1 at 10<sup>-4</sup> BER @25.78Gb/s.

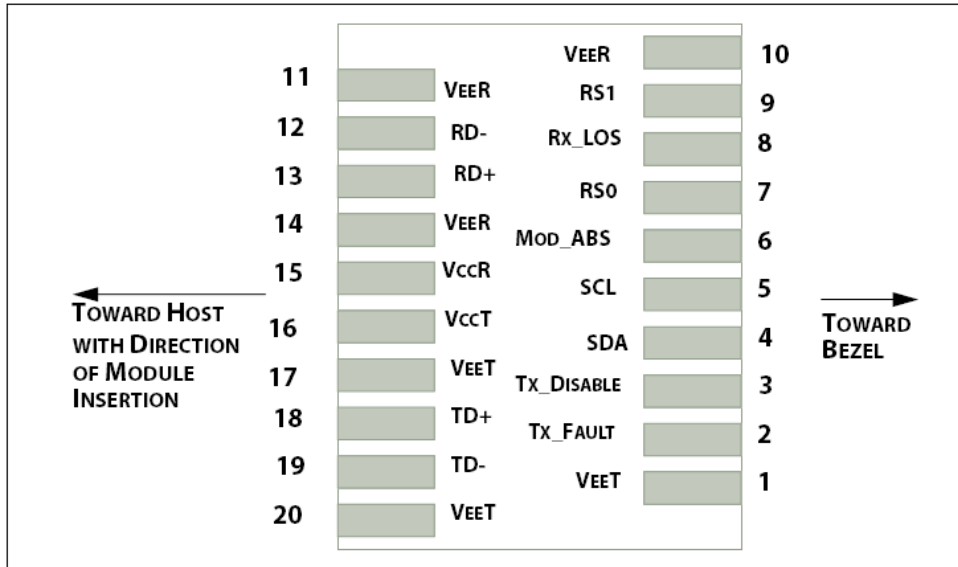
## Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	VeeT	Transmitter Ground	1
2	TX Fault	Transmitter Fault (LVTTTL-O) - High indicates a fault condition	2
3	TX Disable	Transmitter Disable (LVTTTL-I) – High or open disables the transmitter	3
4	SDA	Two wire serial interface Data Line (LVCMOS-I/O) (MOD-DEF2)	4
5	SCL	Two wire serial interface Clock Line (LVCMOS-I/O) (MOD-DEF1)	4
6	MOD_ABS	Module Absent (Output), connected to VeeT or VeeR in the module	5
7	RS0	Rate Select 0 – Not used, Presents high input impedance	6
8	RX_LOS	Receiver Loss of Signal (LVTTTL-O)	2
9	RS1	Rate Select 1 – Not used, Presents high input impedance	6
10	VeeR	Receiver Ground	1
11	VeeR	Receiver Ground	1
12	RD-	Inverse Received Data out (CML-O), AC Coupled	
13	RD+	Received Data out (CML-O), AC Coupled	
14	VeeR	Receiver Ground	
15	VccR	Receiver Power - +3.3V	
16	VccT	Transmitter Power - +3.3 V	
17	VeeT	Transmitter Ground	1
18	TD+	Transmitter Data In (CML-I), AC Coupled	
19	TD-	Inverse Transmitter Data In (CML-I), AC Coupled	
20	VeeT	Transmitter Ground	1

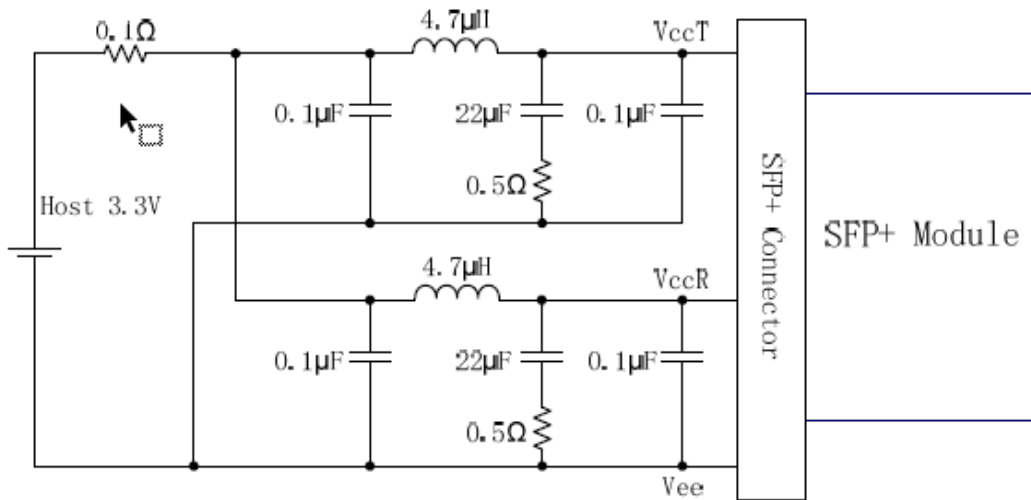
### Notes:

1. The module signal grounds are isolated from the module case.
2. This is an open collector/drain output that on the hostboard requires a 4.7KΩ to 10KΩ pull-up resistor to VccHost.
3. This input is internally biased high with a 4.7KΩ to 10KΩ pull-up resistor to VccT.
4. Two-Wire Serial interface clock and data lines require an external pull-up resistor dependent on the capacitance load.
5. This is a ground return that on the host board requires a 4.7KΩ to 10KΩ pull-up resistor to VccHost.
6. Rate select can also be set through the 2-wire bus in accordance with SFF-8472 v. 10.2, Rx Rate Select is set at Bit 3, Byte 110.  
Address A2h. Tx Rate Select is set at Bit 3, Byte 118, Address A2h.  
Note: writing a “1” selects maximum bandwidth operation. Rate select is the logic OR of the input state of Rate Select Pin and 2-wire bus.

### Host PCB SFP+ pad assignment top view



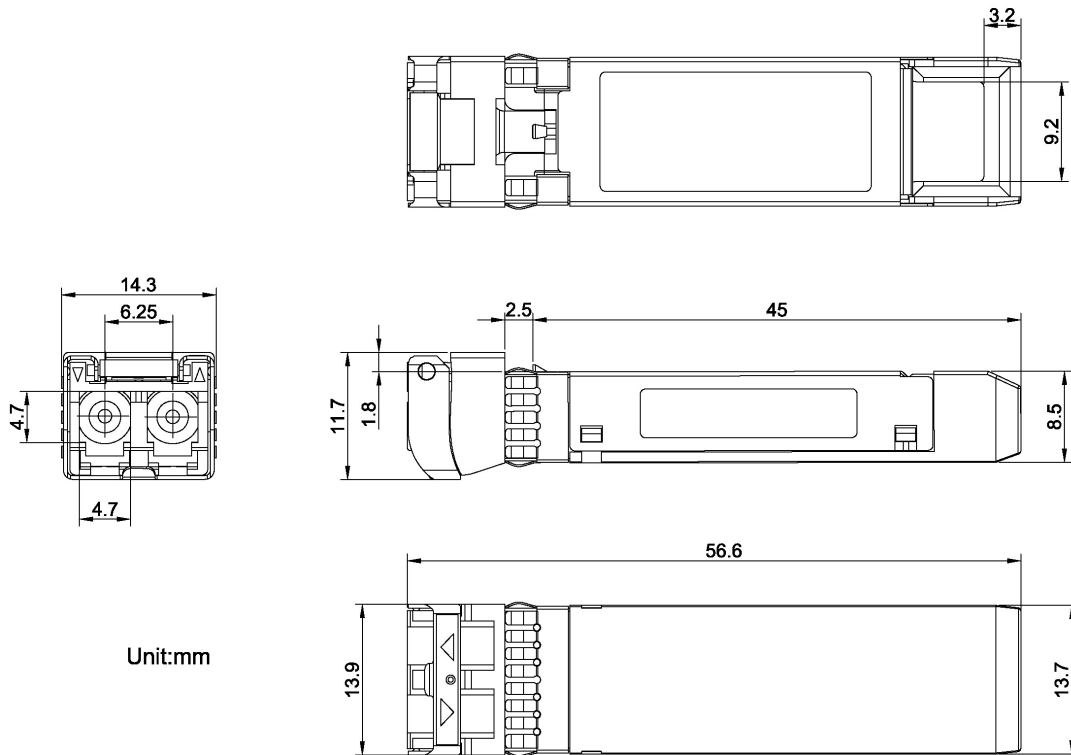
### Recommended Host Board Power Supply Filter Network



## Recommended Application Interface Block Diagram



## Mechanical Specifications



**About Us:**

Proline Options is one of North America's leading providers of transceivers and high speed cabling. With a reputation for quality, tested products that cover the connectivity spectrum, Proline Options has a solution for you regardless of the specification.

At Proline Options, every product is tested in its intended application - never batch or spec tested only. We run bandwidth, distance and IOS network tests. We have documented an impressive 0.03% failure rate over the last 10 years. To continue this rate of success we invest millions annually in our own on-site testing lab.



Tel: 855.933.3223

Email: [sales@prolineoptions.com](mailto:sales@prolineoptions.com)

Email: [techsupport@prolineoptions.com](mailto:techsupport@prolineoptions.com)

Web: <https://www.prolineoptions.com>