



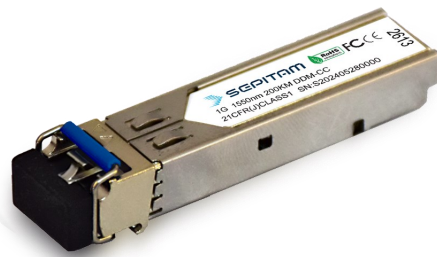
SEPITAM

ONE STEP SMARTER

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SEPITAM
SFP1G-SM-DX-200



TYPE:

Sepitam-SFP1G-SM-DX-200

Sepitam SFP optical transceiver modules support data transmission rates ranging from 1Gbps to 10Gbps. These modules operate at basic and WDM wavelengths and are available in both industrial and non-industrial grades. They are compatible with single-mode and multi-mode optical fibers, covering different transmission distances .



- ▶ TYPE: Sepitam-SFP1G-SM-DX-200
- ▶ RoHS Compliant 1Gbps SFP+ 1550nm
- ▶ 200km Optical Transceiver

▶ Description:

The Sepitam-SFP1G-SM-DX-200 is a high performance, cost effective module which have a duplex LC optics interface. Standard AC coupled CML for high speed signal and LVTTTL control and monitor signals.

The high performance DWDM COOLED DFB transmitter and high sensitivity APD receiver provide superior performance for Ethernet applications at up to 42dB link budge ensure this module 1000Base Ethernet 200km application.

The SFP Module compliants with SFF-8431, SFF-8432 Digital diagnostics functions are available via a 2-wire serial interface as specified in SFF-8472.

The fully SFP compliant form factor provides hot pluggability, easy optical port upgrades and low EMI emission.

▶ Properties:

- Up to 1.25Gb/s Data Links
- Hot-Pluggable
- Duplex LC connector
- Up to 200km on 9/125µm SMF
- 1550nm DFB laser transmitter
- APD Receiver
- Single +3.3V Power Supply
- Monitoring Interface Compliant with SFF-8472
- Maximum Power <1W
- Industrial /Extended/ Commercial operating temperature range: -40°C to 85°C/-5°C to 85°C/-0°C to 70°C Version available
- RoHS compliant and Lead Free



► Applications:

Metro/Access Networks

1.25 Gb/s 1000Base-EZX Ethernet

1xFibre Channel ² Other Optical Links

► Absolute Maximum Ratings:

Parameter	Symbol	Min.	Typical	Max.	Note
Storage Temperature	T _s	-40		+85	°C
Supply Voltage	VCC	-0.5		4	V
Relative Humidity	RH	0		85	%

► Recommended Operating Environ-

Parameter	Type	Symbol	Min.	Typical	Max.	Unit
Case operating Temperature	Industrial	TC	-40		85	°C
	Extended		-5		85	°C
	Commercial		0		+70	°C
Supply Voltage		VCC	3.135		3.465	V
Supply Current		I _{cc}			300	mA
Inrush Current		I _{surge}			I _{cc} +30	mA
Maximum Power		P _{max}			1	W



▶ Electrical Characteristics (TOP = -40 to 85°C, VCC = 3.135 to 3.465 Volts)

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Transmitter						
Input differential impedance	Rin	90	100	110		
Differential input voltage swing	Vin PP	180		700	mVp-p	
Transmit Disable Voltage	VD	Vcc - 1.3		Vcc	v	2
Transmit Enable Voltage	VEN	Vee		Vee+0.8	V	
Transmit Disable Assert Time	Tdessert			10	us	
Receiver						
Single ended data output swing	Vout,pp	300		850	mv	3
LOS Fault	Vlosfault	Vcc - 0.5		VCC_host	V	5
LOS Normal	Vlos norm	Vee		Vee+0.5	V	5
Power Supply Rejection	PSR	100			mVpp	6

Note:

- AC coupled.
- Or open circuit.
- Into 100 ohm differential termination.
- 20 - 80 %
- LOS is LVTTTL. Logic 0 indicates normal operation; logic 1 indicates no signal detected.
- All transceiver specifications are compliant with a power supply sinusoidal modulation of 20 Hz to 1.5MHz up to specified value applied through the power supply filtering network shown on page 23 of the Small Form-factor Pluggable (SFP) Transceiver Multi-Source Agreement (MSA), September 14, 2000.



▶ Optical Parameters (TOP = -40 to 85°C, VCC = 3.135 to 3.465 Volts)

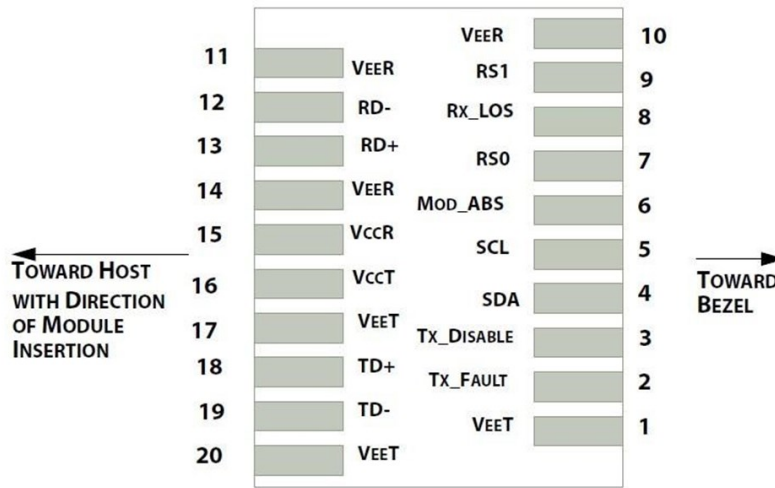
Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Transmitter						
Optical Wavelength-End Of Life	λ	X-100	X	X+100	pm	
Optical Wavelength-Beginning Of Life	λ	X-25	X	X+25	pm	
Average Optical Power	Pavg	+2		+5	dBm	1
Laser Off Power	Poff			-30	dBm	
Extinction Ratio	ER	9			dB	
Transmitter Dispersion Penalty	TDP			3.0	dB	
Relative Intensity Noise	Rin			-128	dB/Hz	2
Optical Return Loss Tolerance		20			dB	
Receiver Section:						
Center Wavelength	λ_r	1480		1580	nm	
Receiver Sensitivity (OMA)	Sen			-38	dBm	2
Los Assert	LOS _A	-48		-	dBm	
Los Dessert	LOS _B			-39	dBm	
Los Hysteresis	LOS _H	0.5			dB	
Overload	Sat	-8			dBm	3
Receiver Reflectance	Rrx			-12	dB	
General Specifications:						
Data Rate	BR		1.25		Gb/s	
Bit Error Rate	BER			10-12		
Max. Supported Link Length on 9/125 μ m SMF@1.25Gb/s	LMAX			200	km	
Total System Budget	LB	36			dB	



Note

- Average power figures are informative only Fiber channel
- 12dB reflection.
- Receiver overload specified in OMA and under the worst comprehensive stressed condition.

► Pin Definitions and Functions:



PIN#	Name	Function	Notes
1	VeeT	Module transmitter ground	1
2	Tx Fault	Module transmitter fault	2
3	Tx Disable	Transmitter Disable; Turns off transmitter laser output	3
4	SDL	2wire serial interface data input/output (SDA)	
5	SCL	2wire serial interface clock input (SCL)	
6	MOD-ABS	Module Absent, connect to VeeR or VeeT in the module	2
7	RS0	Rate select0, optionally control SFP receiver. When high, input data rate >4.5Gb/ s; when low, input data rate <=4.5Gb/s	
8	LOS	Receiver Loss of Signal Indication	4

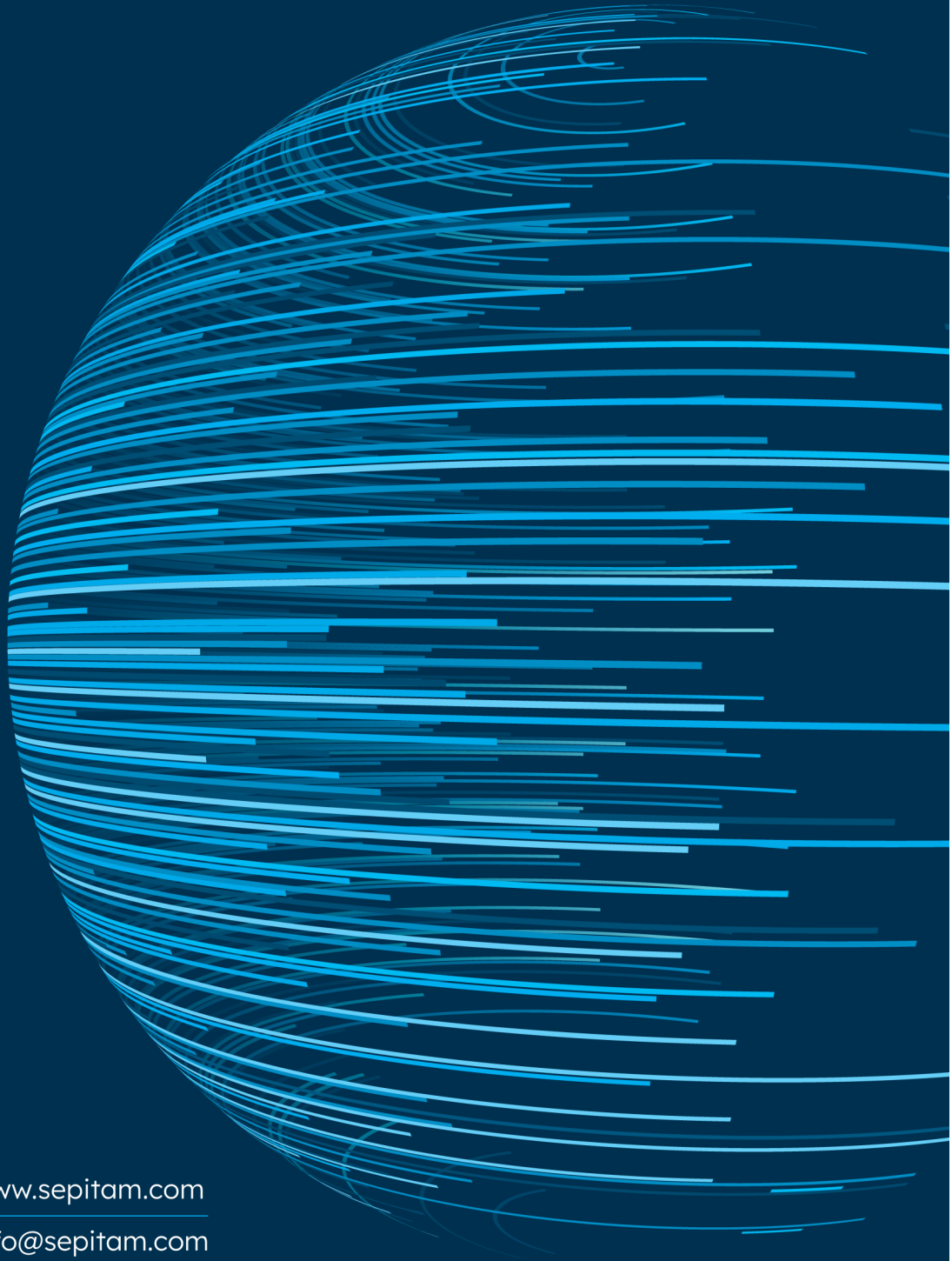


PIN#	Name	Function	Notes
9	RS1	Rate select0, optionally control SFP transmitter. When high, input data rate >4.5Gb/s; when low, input data rate <=4.5Gb/s	
10	VeeR	Module receiver ground	1
11	VeeR	Module receiver ground	1
12	RD-	Receiver inverted data out put	
13	RD+	Receiver non-inverted data out put	
14	VeeR	Module receiver ground	1
15	VccR	Module receiver 3.3V supply	
16	VccT	Module transmitter 3.3V supply	
17	VeeT	Module transmitter ground	1
18	TD+	Transmitter inverted data out put	
19	TD-	Transmitter non-inverted data out put	
20	VeeT	Module transmitter ground	1

Note:

- The module ground pins shall be isolated from the module case.
- This pin is an open collector/drain output pin and shall be pulled up with 4.7K-10Kohms to Host_Vcc on the host board.
- This pin shall be pulled up with 4.7K-10Kohms to VccT in the module.
- This pin is an open collector/drain output pin and shall be pulled up with 4.7K-10Kohms to Host_Vcc on the host board.

Technical Specification of Sepitam-SFP1G-SM-DX-200



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