

OC-12/STM-4 SFP Module MM LC 2km data range (1310nm) Cisco compatible



GBIC-, SFP-, XFP-, XENPAK-Transceiver

The tde Small Form Pluggable Optical Transceiver are easy installed for enterprise and telecom applications. The tde SFP modular line provides a fully compatible, highly reliable and volume accessible supply of quality transceiver products with excellent performance for design-in manufacturing and end-user enterprise applications.



tde[®] trans data elektronik GmbH

Headquarter address:

Lingener Str. 2
D-49626 Bippen/Ohrte
Tel.: +49 5435 9511 0
Fax.: +49 5435 9511 32

Sales office address:

Prinz-Friedrich-Karl-Str. 46
D-44135 Dortmund
Tel.: +49 231 8805 61 13
Fax.: +49 231 8805 61 15

info@tde.de | www.tde.de

OC-12/STM-4 SFP Module MM LC 2km data range (1310nm) Cisco compatible

Technical Data

Features

- Operating data rate up to 622Mbps
- 1310nm Transmitter
- 2km with 50/125µm MMF
- Single 3.3V Power supply and TTL Logic Interface
- Duplex LC Connector Interface
- Hot Pluggable
- Operating Case Temperature
Standard: 0°C~+70°C
Industrial: -40°C~+85°C
- Compliant with MSA SFP Specification
- Digital diagnostic monitor interface Compatible with SFF-8472

Applications

- Fast Ethernet Links
- SONET/SDH Equipment Interconnect
- Fiber channel Links

Regulatory Compliance

Feature	Standard	Performance
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883E Method 3015.7	Class 1(>500 V) Isolation with the case
Electromagnetic Interference (EMI)	FCC Part 15 Class B	Compatible with standards
Laser Eye Safety	FDA 21CFR 1040.10 and 1040.11 EN60950, EN (IEC) 60825-1,2	Compatible with Class I laser product. Compatible with T üV standards
Component Recognition	UL and CUL	UL file E317337
Green Products	RoHS	RoHS6

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	TS	-40	+85	°C
Supply Voltage	Vcc	-0.5	3.6	V

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Case Temperature	SFP-OC12-MM SFP-OC12-MM-I	0 -40		+70 +85	°C
Power Supply Voltage	Vcc	3.15	3.3	3.45	V
Power Supply Current	Icc			300	mA
Surge Current	ISurge			+30	mA

OC-12/STM-4 SFP Module MM LC 2km data range (1310nm) Cisco compatible

Baud Rate

622

MBaud

Performance Specifications - Electrical

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
LVPECL Inputs (Differential)	V _{in}	400		2500	mVp	AC coupled inputs
Input Impedance (Differential)	Z _{in}	85	100	115	ohms	R _{in} > 100 kohms @ DC
Tx_DISABLE Input Voltage - High		2		3.45	V	
Tx_DISABLE Input Voltage - Low		0		0.8	V	
Tx_FAULT Output Voltage - High		2		V _{cc} +0.3	V	I _o = 400µA; Host V _{cc}
Tx_FAULT Output Voltage - Low		0		0.5	V	I _o = -4.0mA
Receiver						
LVPECL Outputs (Differential)	V _{out}	400	800	1200	mVpp	AC coupled outputs
Output Impedance (Differential)	Z _{out}	85	100	115	ohms	
Rx_LOS Output Voltage - High		2		V _{cc} +0.3	V	I _o = 400µA; Host V _{cc}
Rx_LOS Output Voltage - Low		0		0.8	V	I _o = -4.0mA
MOD_DEF (0:2)	VoH VoL	2.5 0		0.5	V V	With Serial ID

Optical and Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
50µm Core Diameter MMF	L		2		km
Data Rate			622		Mbps
Transmitter					
Centre Wavelength	λ _c	1260	1310	1360	nm
Spectral Width (RMS)	σ			10	nm
Average Output Power	P _{Out}	-19		-12	dBm
Extinction Ratio	EX	9			dB
Rise/Fall Time (20% – 80%)	tr/ta			2	ns
Total Jitter	TJ			1.0	ns
Output Optical Eye	ITU-T G.957 Compliant				
Data Input Swing Differential	V _{IN}	500		2000	mV
Input Differential Impedance	Z _{IN}	90	100	110	Ω

OC-12/STM-4 SFP Module MM LC 2km data range (1310nm) Cisco compatible

TX Disable - Disable	2.0	VCC+0.3	V
- Enable	0	0.8	V
TX_Fault - Fault	2.0	VCC+0.3	V
- Normal	0	0.8	V
TX_Disable Assert Time t _{off}	10		us
Receiver			
Centre Wavelength	λ _c	1260	1600
			nm
Receiver Sensitivity	PIN	-26	
			dBm
Output Differential Impedance	P IN	90	100
			110
			Ω
Data Output Swing Differential	VOUT	370	2000
			mV
Rise/Fall Time	Tr/tf	2.2	
			ns
LOS De-Assert	LOSD	-27	
			dBm
LOS Assert	LOSA	-40	
			dBm
LOS - High	2.0	VCC+0.3	V
- Low	0	0.8	V

Product variants & accessories

Art.-No.	Description
TDE-SFP-OC12-MM	OC-12/STM-4 SFP Module MM LC 2km data range (1310nm) Cisco compatible