1000BASE-CWDM GBIC Module Singlemode SC (xxxxnm) 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.

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Technical Data

Features

- Operating data rate up to 1.25Gbps
- 18-Wavelength CWDM DFB LD Transmitter from 1270 nm to 1610 nm, with step 20 nm
- APD High Sensitivity Receiver
- 32 dB Power Budget at Least
- Single 5V/3.3V Power supply and TTL/LVTTL Logic Interface
- Duplex SC Connector Interface
- Hot Pluggable
- Operating Case Temperature Industrial:-40°C~+85°C
- Compliant with GBIC Specification Rev. 5.5

Applications

- Switch to Switch Interface
- High Speed Interface for File Servers
- Bus Extension Application
- Data Storage

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

CWDM* Wavelength (0 to 70°C)

Band	Nomenclature	Wavelength(nm) Min.	Wavelength(nm) Typ.	Wavelength(nm) Max.
O-band Original	A	1264	1270	1277.5
	B	1284	1290	1297.5
	C	1304	1310	1317.5
	D	1324	1330	1337.5
	E	1344	1350	1357.5
E-band Extended	F	1364	1370	1377.5
	G	1384	1390	1397.5
	H	1404	1410	1417.5
	I	1424	1430	1437.5
	J	1444	1450	1457.5
S-band Short Wavelength	K	1464	1470	1477.5
	L	1484	1490	1497.5
	M	1504	1510	1517.5
	N	1524	1530	1537.5
C-band Conventional	O	1544	1550	1557.5

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L-band Long Wavelength	P	1564	1570	1577.5
	Q	1584	1590	1597.5
	R	1604	1610	1617.5

CWDM*: 18 Wavelengths from 1270nm to 1610nm, each step 20nm.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	TS	-40	+85	°C
Supply Voltage	Vcc	-0.5	6	V

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Case Temperature	TA	-40		+85	°C
Power Supply Voltage	Vcc	4.75	5	5.25	V
Power Supply Current	Icc			300	mA
Surge Current	ISurge			+30	mA
Baud Rate			1.25		GBaud

Performance Specifications - Electrical

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
LVPECL Inputs (Differential)	Vin	400		2500	mVp	AC coupled inputs
Input Impedance (Differential)	Zin	85	100	115	ohms	Rin > 100 kohms @ DC
Tx_DISABLE Input Voltage - High		2		Vcc+0.3	V	
Tx_DISABLE Input Voltage - Low		0		0.8	V	
Tx_FAULT Output Voltage - High		2		Vcc+0.3	V	Io = 400µA; Host Vcc
Tx_FAULT Output Voltage - Low		0		0.5	V	Io = -4.0mA
Receiver						
LVPECL Outputs (Differential)	Vout	400	800	1200	mVpp	AC coupled outputs
Output Impedance (Differential)	Zout	85	100	115	ohms	
Rx_LOS Output Voltage - High		2		Vcc+0.3	V	Io = 400µA; Host Vcc
Rx_LOS Output Voltage - Low		0		0.8	V	Io = -4.0mA
MOD_DEF (0:2)	VoH VoL	2.5 0		 0.5	V V	With Serial ID

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Optical and Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Data Rate			1.25		Gbps
Transmitter:					
Centre Wavelength	λc	-5.5		+7.5	nm
Spectral Width (RMS)	σ			1	nm
Average Output Power	P Out	0		+5	dBm
Extinction Ratio	EX	9			dB
Rise/Fall Time (20% – 80%)	tr/tf			260	ns
Output Optical Eye	ITU-T G.957 Compliant				
Data Input Swing Differential	V IN	500		2000	mV
Input Differential Impedance	ZIN	90	100	110	Ω
TX Disable - Disable - Enable		2.0 0		VCC+0.3 0.8	V V
TX_Fault - Fault - Normal		2.0 0		VCC+0.3 0.8	V V
TX_Disable Assert Time	t_off			10	us
Receiver					
Centre Wavelength	λc	1100		1600	nm
Receiver Sensitivity	PIN			-32	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			-33	dBm
LOS Assert	LOSA	-40			dBm
LOS - High - Low		2.0 0		VCC+0.3 0.8	V V

xxxx: wavelength 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610 nm

Product variants & accessories

Art.-No.	Description
TDE-CWDM-GBIC-xxxx	1000BASE-CWDM GBIC Module Singlemode SC (xxxxnm) Cisco compatible