

1.25Gbps SFP Module Singlemode LC 80km data range (1550nm)



## 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
- 1550 nm DFL LD Transmitter
- Distance up to 80km
- Single 3.3V Power supply and TTL Logic Interface
- Duplex LC Connector Interface
- Hot Pluggable
- Operating Case Temperature Industrial: -40°C~+85°C
- Compliant with MSA SFP Specification
- Digital diagnostic monitor interface Compatible with SFF-8472

#### Applications

- Gigabit Ethernet Switches and Routers
- Fiber Channel Switch infrastructure
- XSDL Applications
- Metro Edge Switching

#### Regulatory Compliance

Features	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	TA / AS-ZX	-40		+85	°C
Power Supply Voltage	VCC	3.15	3.3	3.45	V
Power Supply Current	ICC			300	mA
Surge Current	ISurge			+30	mA

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Baud Rate 1.25 GBaud

### Performance Specifications - Electrical

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
<b>Transmitter</b>						
LVPECL Inputs (Differential)	V <sub>in</sub>	400		2500	mVp	AC coupled inputs
Input Impedance (Differential)	Z <sub>in</sub>	85	100	115	ohms	R <sub>in</sub> > 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 <sub>cc</sub> +0.3	V	I <sub>o</sub> = 400µA; Host V <sub>cc</sub>
Tx_FAULT Output Voltage - Low		0		0,5	V	I <sub>o</sub> = -4.0mA
<b>Receiver</b>						
LVPECL Outputs (Differential)	V <sub>out</sub>	400	800	1200	mVpp	AC coupled outputs
Output Impedance (Differential)	Z <sub>out</sub>	85	100	115	ohms	
Rx_LOS Output Voltage - High		V <sub>cc</sub> -0.5		V <sub>cc</sub> +0.3	V	I <sub>o</sub> = 400µA; Host V <sub>cc</sub>
Rx_LOS Output Voltage - Low		0		0.8	V	I <sub>o</sub> = -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
9µm Core Diameter SMF / AS-ZX			80		km
Data Rate			1.25		Gbps
<b>Transmitter</b>					
Centre Wavelength	λ <sub>c</sub>	1480	1550	1580	nm
Spectral Width (RMS)	σ			1	nm
Average Output Power / AS-ZX	P <sub>Out</sub>	0		+5	dBm
Extinction Ratio	EX	9			dB
Side Mode Suppression Ratio	SMSR	30			dB
Rise/Fall Time (20% – 80%)	tr/ta			260	ps
Total Jitter	TJ			56.5	ps
Output Optical Eye	ITU-T G.957 Compliant				
Data Input Swing Differential	V <sub>IN</sub>	500		2000	mV

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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	s
<b>Receiver</b>					
Centre Wavelength	λc	1100		1600	nm
Receiver Sensitivity / AS-ZX	PIN			-24	dBm
Output Differential Impedance	P IN	90	100	110	Ω
Data Output Swing Differential	V OUT	370		2000	mV
Rise/Fall Time	Tr/tf			2.2	ns
LOS De-Assert	LOS D			-25	dBm
LOS Assert	LOS A	-40			dBm
LOS -High -Low		2.0 0		VCC+0.3 0.8	V V

## Product variants & accessories

Art.-No.	Description
TDE-AS-ZX	1.25Gbps SFP Module Singlemode LC 80km data range (1550nm)