

## DESKTOP SWITCH

The 065-77SMXLD is a high performance and cost-effective module for serial optical data communication applications specified for single-mode of 1.25 Gbps. It operates with +3.3V power supply. The module is intended for single-mode fiber, operates at a nominal wavelength of 1310 nm and complies with Multi-source Agreement (MSA) Small Form Factor Pluggable (SFP).

Each module consists of a transmitter optical subassembly, a receiver optical subassembly and an electrical subassembly. All of them are housed in a metal package and the combination produces a reliable component.

This module is a duplex LC connector transceiver designed for use in Gigabit Ethernet applications and to provide IEEE-802.3z compliant link for 1.25 Gbps intermediate reach applications.

The 065-77SMXLD transceivers use a intermediate wavelength (1310 nm) FP laser diode to enable data transmissions of up to 120 km on a single mode optical fiber.

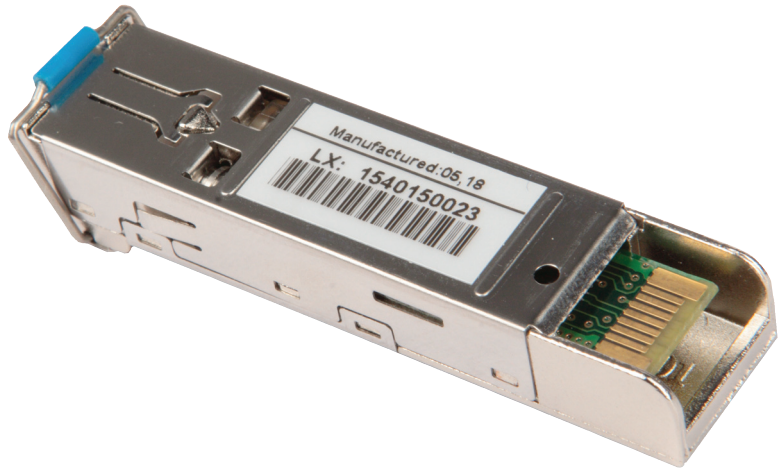
# 1.25 Gigabit Ethernet-Singlemode Transceiver

## APPLICATIONS

- Gigabit Ethernet Links
- Fibre Channel Links at 1.06 Gbps
- High Speed Backplane Interconnects
- Switched Backbones

## FEATURES

- Data Rate: 1.062 to 1.25 Gb/s
- Single 3.3V supply
- 120 km Reach
- 32 dB min, 36 dB Typical Link Budget
- Commercial Temperature available
- 1550 nm DFB Laser
- APD Receiver
- Digital Diagnostic SFF-8472 Compliant
- SFP MSA SFF-8074i compliant
- Telcordia GR-468 compliant



## 1.25 Gigabit Ethernet-Singlemode Transceiver

PART NO.	DESCRIPTION
065-77SMXLD	SFP, Duplex LC Connector, 1310 nm FP LD for Single Mode Fiber, RoHS Compliant

## GENERAL OPERATION

PARAMETER	SYMBOL	MIN	TYPICAL	MAX	UNIT
Supply Voltage	$V_{CC}$	3.135	3.465	3.3	V
Total Current	$I_{CC}$	-	-	300	mA
Power Supply Rejection <sup>a</sup>	PSR	100	-	-	mV <sub>p-p</sub>
Operating Temperature (Case)	$T_{OP}$	-5	-	70	°C
Storage Temperature	$T_{ST}$	-40	-	85	°C
Data Rate GbE	DR	-	1250	-	Mbps
Supply Current	DR	-	1062.5	-	Mbps

a) 20Hz to 155MHz

## TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYPICAL	MAX	UNIT
Optical Power	$P_{OP}$	0	2	5	dBm
Average Launch Power of Off Tx	$P_{Off}$	-	-	-30	dBm
Extinction Ratio (Dynamic)	ER	9	-	-	dB
Eye Mask					802.3z Compliant
Total Jitter	TJ	-	-	200	ps
Optical Rise time (20%-80% )	$t_r$	-	-	260	ps
Optical Fall time (20%-80% )	$t_f$			260	ps
Mean Wavelength	$\gamma$	1 500	1500	1580	nm
Spectral Width (20dB)	$\gamma$	-	-	1	nm
Side Mode Suppression Ratio	SMSR	30	-	-	dB
Optical Path Penalty at 120 Km <sup>b</sup>	dp	-	-	2	dB
Relative Intensity Noise	RIN	-	-	-120	dB/Hz
Reflection Tolerance <sup>c</sup>	rp	-24	-	-	dB

b) Measured at BER of  $10^{-12}$ , PRBS of  $2^7-1$ , at eye center

c) 1 dB degradation of receiver sensitivity

## TRANSMITTER SPECIFICATIONS (ELECTRICAL)

PARAMETER	SYMBOL	MIN	TYPICAL	MAX	UNIT
Input Differential Impedence	$R_{in}$	80	100	120	$\Omega$
PECL Single-Ended Data Input Swing	$V_{in,p-p}$	250	-	1200	mV
TxFault_Fault	$V_{fault}$	2	-	$V_{cc}$	V
TxFaut_Normal	$V_{normal}$	$V_{ee}$	-	$V_{ee}+0.5$	V
TxDisable_Disable	$V_d$	2	-	$V_{cc}$	V
TxDisable_Enable	$V_{en}$	$V_{ee}$	-	$V_{ee}+0.8$	V

## TRANSMITTER SPECIFICATIONS (ELECTRICAL)

PARAMETER	SYMBOL	MIN	TYPICAL	MAX	UNIT
Receiver Power Low <sup>d</sup>	$R_{sens\ low}$	-	-34	-32	dBm
Receive Power High <sup>d</sup>	$R_{sens\ high}$	-3	-	-	dBm
Damage Thershold for Receiver	$P_{in,dabage}$	6	-	-	dBm
Wavelength <sup>e</sup>	$\gamma$	1480	1550	1580	nm
Maximum Reflectance of Receiver	RX_r	-	-	-14	dB
LOS Assert		-42	-	-	dBm
LOS De-Assert		-	-	-32	dBm
LOS Hysteresis		0.5	-	-	dB

d)  $10^{-12}$  BER at 1.25Gb/s,  $2^7-1$  PRBS

e) Operational over 1200-1625nm range

## RECEIVER SPECIFICATIONS (ELECTRICAL)

PARAMETER	SYMBOL	MIN	TYPICAL	MAX	UNIT
PECL Single-Ended Data Output Swing	$V_{out,p-p}$	185	-	800	dBm
Data Output Rise time (20%-80% )	$t_r$	-	-	175	ps
Data Output Fall time (20%-80% )	$t_f$	-	-	175	ps