GBIC-1250-ZX

Features
- Data rate 1.062 to 1.25 Gb/s
- Single 5 V supply
- 70km reach
- 28dB typical link budget
- 0 to 70 C temperature operation
- 1550 nm DFB laser
- GBIC MSA compliant SFF-8053
- TUV Certificate number B 02 11 43429 027

Ratings

Parameter	Symbol	Rating	Unit
Supply Voltage	V_{cc}	4.75 to 5.25 V	V
Supply Current (max)	I_{cc}	300	mA
Operating Temp		0 to +70	°C
Storage Temp		-40 to +85	°C

Transmitter Specifications

Parameter	Symbol	Min	Typ	Max	Unit
Wavelength	λ	1500	1550	1580	nm
Spectral Width (20dB)		-	0.2	1	nm
Optical Path Penalty[a]				2	dB
Output Power		0	1.5	5	dBm
Extinction Ratio		9	-	-	dB
Data Rate		1062	-	1250	Mbps
Side Mode Suppression ratio	SMSR	30	-	-	dB
PECL Single Ended Input		325	-	1000	mVp-p
Rise Time (20%-80%)	t_r	-	0.17	0.25	ns
Fall Time (80%-20%)	t_f	-	0.17	0.25	ns
Total Jitter		-	-	0.2	ns(p-p)
Eye Diagram	IEEE-802.3 Compliant				

a) Measured at 10^{-12} BER at 1400ps/nm dispersion

Receiver Specifications

Parameter	Symbol	Min	Typ	Max	Unit
Wavelength	λ	1200	-	1600	nm
Receive Power Range Low[b]		-24	-27	-	dBm
Receive Power Range High[b]		-3	-1	-	dBm
Data Rate		-	-	1250	Mbps
PECL Single Ended Output		185	-	1000	mVp-p
Rise Time, Fall Time	t_r, t_f	-	0.17	0.25	ns
Signal Detect Threshold-Assertion		-	-	-24	dBm
Signal Detect Threshold -Deassertion		-34	-	-	dBm
Signal Detect Level Low		V_{ee}	-	$V_{ee}+0.5$	V
Signal Detect Level High		2	-	V_{cc}	V
Hysteresis		1		-	dB

b) PRBS 2^7-1; BER = 10^{-12}

Timing Parameters for GBIC Management

Parameter	Symbol	Min	Max	Unit	Conditions
TX_DISABLE assert time	t_off		10	μsec	Rising edge of TX_DISABLE to fall of ouput signal below 10% of normal
TX_DISABLE negate time	t_on		1	msec	Falling edge of TX_DISABLE to rise of ouput signal above 90% of normal
Time to initialize, includes reset of TX_FAULT	t_init		300	msec	From power on or hot plug after $V_{DD}T>3.15$ volts or from negation of TX_DISABLE during reset of TX_FAULT
TX_FAULT from fault to assertion	t_fault		100	μsec	From occurence of fault (output safety violation or $V_{DD}T<3.15$ volts)
TX_DISABLE time to start reset	t_reset	10		μsec	TX_DISABLE HIGH before TX_DISABLE set LOW
RX_LOS assert delay	t_loss_on		100	μsec	From detection of loss of signal to assertion of RX_LOS
RX_LOS negate delay	t_loss_off		100	μsec	From detection of presence of signal to negation of RX_LOS

Outline Drawing and Connection

Pin	Function	Pin	Function
1	Rx_LOS	11	Rx Ground
2	Rx Ground	12	Rx_Data (-)
3	Rx Ground	13	Rx_Data (+)
4	MOD_DEF (0)	14	Rx Ground
5	MOD_DEF (1)	15	VDD Rx
6	MOD_DEF (2)	16	VDD Tx
7	Tx_Disable	17	Tx Ground
8	Tx Ground	18	Tx_Data (+)
9	Tx Ground	19	Tx_Data (-)
10	Tx_Fault	20	Tx Ground

Warnings

Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.

Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

Legal Notice