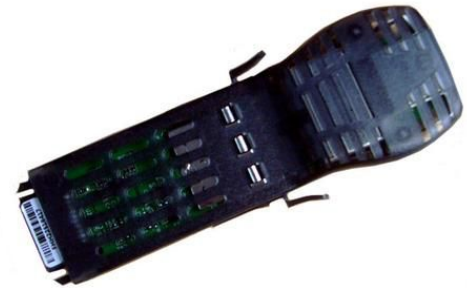




DW-T1000G
1000BASE-T Copper GBIC Transceiver

Features:

- ◆ Hot-pluggable GBIC footprint
- ◆ Extended case temperature range (0°C to +70°C)
- ◆ Low power dissipation (1.05 W typical)
- ◆ Compact RJ-45 connector assembly
- ◆ Access to physical layer IC via 2-wire serial bus
- ◆ 1000 BASE-T operation in host systems with SERDES interface



Applications:

- ◆ 1.25 Gigabit Ethernet over Cat 5 cable

Description:

DW-T1000G 1000BASE-T Copper GBIC transceivers are based on the GBIC Multi Source Agreement (MSA). They are compatible with the Gigabit Ethernet and 1000BASE-T standards as specified in IEEE Std 802.32. The 1000BASE-T physical layer IC (PHY) can be accessed via I2C, allowing access to all PHY settings and features. The DW-T1000G uses the GBIC's RX_LOS pin for link indication, and 1000BASE-X auto-negotiation should be disabled on the host system. The DW-T1000G is compatible with 1000BASE-X auto-negotiation, but does not have a link indication feature(RX_LOS is internally grounded).



+5V Volt Electrical Power Interface

The GE-GB-G3RC has an input voltage range of +5V +/- 5%. The 5.5V maximum voltage is not allowed for continuous operation.

+5V volt Electrical Power Interface						
Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
Supply Current	Is		220	260	mA	1.2W max power over full range of voltage and temperature. See caution note below
Input Voltage	Vcc	4.7	5	5.3	V	Referenced to GND
Maximum Voltage	Vmax			5.5	V	

Caution: Power consumption and surge current are higher than the specified values in the GBIC MSA

Low-speed signals, electronic characteristics

Low-Speed Signals, Electronic Characteristics						
Parameter	Symbol	Min	Max	Units	Notes/Conditions	
GBIC Output LOW	VOL	0	0.5	V	4.7k to 10k pull-up to host_Vcc, measured at host side of connector	
GBIC Output HIGH	VOH	host_Vcc - 0.5	host_Vcc + 0.3	V	4.7k to 10k pull-up to host_Vcc, measured at host side of connector	
GBIC Input LOW	VIL	0	0.8	V	4.7k to 10k pull-up to Vcc, measured at GBIC side of connector	
GBIC Input HIGH	VIH	2	Vcc + 0.3	V	4.7k to 10k pull-up to Vcc, measured at GBIC side of connector	

High-speed electrical interface, transmission line-GBIC

High-Speed Electrical Interface Transmission Line-GBIC						
Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
Line Frequency	fL		125		MHz	5-level encoding, per IEEE 802.3
Tx Output Impedance	Zout,TX		100		Ohm	Differential, for all Frequencies between 1MHz and 125MHz
Rx Input Impedance	Zin,RX		100		Ohm	Differential, for all Frequencies between 1MHz and 125MHz



High-speed electrical interface, host-GBIC

High-Speed Electrical Interface, Host-GBIC						
Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
Single ended data input swing	Vinsing	250		1200	mV	Single ended
Single ended data output swing	Voutsing	350		800	mV	Single ended
Rise/Fall Time	Tr,Tf		175		psec	20%-80%
Tx Input Impedance	Zin		50		Ohm	Single ended
Rx Output Impedance	Zout		50		Ohm	Single ended

General Specifications

General						
Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
Data Rate	BR	10		1000	Mb/sec	IEEE 802.3 compatible. See Notes 2 through 4 below
Cable Length	L			100	m	Category 5 UTP. BER <10-12

Notes:

1. Clock tolerance is +/- 50 ppm
2. By default, the GE-GB-G is a full duplex device in preferred master mode
3. Automatic crossover detection is enabled. External crossover cable is not required
4. 1000 BASE-T operation requires the host system to have an SGMII interface with no clocks, and the module PHY to be configured per Application Note AN-2036. With a SERDES that does not support SGMII, the module will operate at 1000BASE-T only.

Environmental Specifications

Environmental Specifications						
Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
Operating Temperature	Top	0		70	°C	Case temperature
Storage Temperature	Tsto	-40		85	°C	Ambient temperature



Ordering information

Part number	Operating Case temperature
DW-T1000G	1000Mbps only, SERDES interface, Copper GBIC with spring latch

References

1. Gigabit Interface Converter (GBIC) Transceiver Multi-Source Agreement (MSA),
2. IEEE Std 802.3, 2002 Edition. IEEE Standards Department, 2002.
3. "AT24C01A/02/04/08/16 2-Wire Serial CMOS E2PROM", Atmel Corporation.
4. "Alaska Ultra 88E1111 Integrated 10/100/1000 Gigabit Ethernet Transceiver", Marvell Corporation.

Important Notice

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