

AGM722F-A
1GBASE, GBIC, LX Transceiver

Features

- Operating data rate up to 1.25Gbps
- 1310nm LD Transmitter
- Distance Up to 10km
- 3.3V/5V Power supply and TTL Logic Interface
- Compliant with GBIC Specification Rev5.5
- Duplex SC Connector Interface
- Hot Pluggable
- Commercial Operating Case Temperature:
0°C ~+70°C



Applications

- WDM GBE Links
- Fiber Channel Links
- SONET/SDH Equipment Interconnect

1. Description

The Approved Networks AGM722F-A series optical transceivers meet the Gigabit Interface Converter (GBIC) specification Rev. 5.5. It satisfies the optical interface specifications defined in IEEE 802.3z Drift 5.0 for Gigabit Ethernet. This module is designed for Single-mode fiber and operates at a nominal wavelength of 1310 nm.

The transmitter section uses a multiple quantum well laser and is a class 1 laser compliant according to International Safety Standard IEC-60825. The receiver section uses an integrated InGaAs detector preamplifier (IDP) mounted in an optical header and a limiting post-amplifier IC. A PECL input /output logic interface is used. TTL RX-LOS output simplifies interface to external circuitry. A 20-pin SCA-2 host connector is used to connect the converter to the host system.

2. Absolute Maximum Ratings

Operation in excess of any absolute maximum ratings might cause permanent damage to this module.

| Parameter | Symbol | Min | Typ | Max | Units |
|----------------------|--------|-----|-----|-----|-------|
| Storage Temperature | TS | -40 | | +85 | °C |
| Power Supply Voltage | VCC | 0 | | 6 | V |

3. Recommended Operating Environment

| Parameter | Symbol | Min | Typ | Max | Unit | |
|----------------------------|--------------------|------|------|---------------------|-------|----|
| Case operating Temperature | Commercial | TC | 0 | - | 70 | °C |
| Supply Voltage | VCC | 4.75 | 5 | 5.25 | V | |
| | | 3.17 | 3.3 | 3.45 | | |
| Supply Current | Icc | | | 300 | mA | |
| Inrush Current | I _{surge} | | | I _{cc} +30 | mA | |
| Baud Rate | | | 1.25 | | GBaud | |

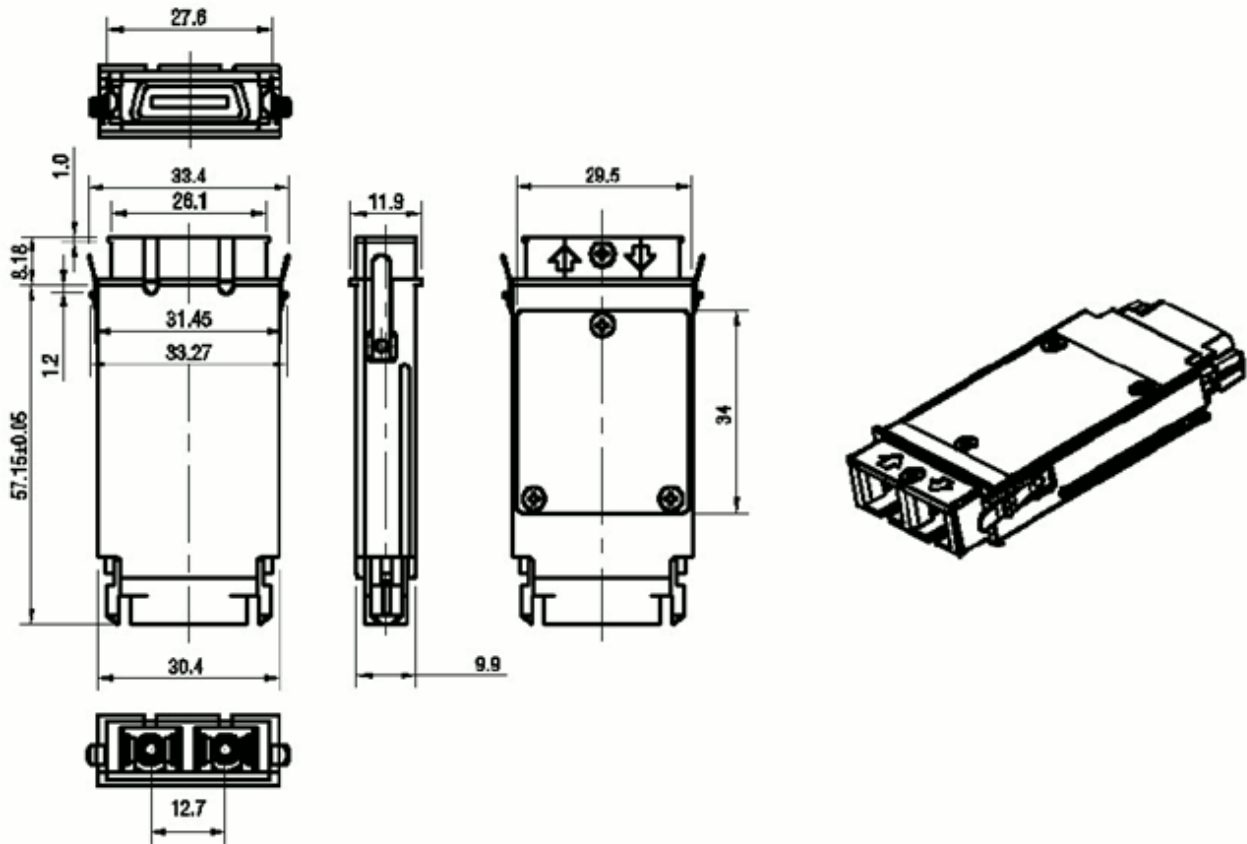
4. Performance Specifications

| Transmitter | | | | | | |
|---------------------------------|------------------|-----------------------|-----|----------------------|------|---|
| Parameter | Symbol | Min | Typ | Max | Unit | Notes |
| LVPECL Inputs (Differential) | V _{in} | 400 | | 2500 | mVp | AC coupled inputs |
| Input Impedance (Differential) | Z _{in} | 85 | 100 | 115 | ohms | R _{in} > 100 kohms @ DC |
| Tx_DISABLE Input Voltage - High | | 2 | | V _{cc} +0.3 | V | |
| Tx_DISABLE Input Voltage -Low | | 0 | | 0.8 | V | |
| Tx_FAULT Output Voltage - High | | V _{cc} - 0.5 | | V _{cc} +0.3 | V | I _o = 400µA; Host V _{cc} |
| Tx_FAULT Output Voltage -Low | | 0 | | 0.5 | V | I _o = -4.0mA |
| Receiver | | | | | | |
| Parameter | Symbol | Min | Typ | Max | Unit | Notes |
| LVPECL Outputs (Differential) | V _{out} | 400 | 800 | 1200 | mVpp | AC coupled outputs |
| Output Impedance (Differential) | Z _{out} | 85 | 100 | 115 | ohms | |
| Rx_LOS Output Voltage - High | | V _{cc} - 0.5 | | V _{cc} +0.3 | V | I _o = 400µA; Host V _{cc} |
| Rx_LOS Output Voltage -Low | | 0 | | 0.8 | V | I _o = -4.0mA |
| MOD_DEF (0:2) | VoH | 2.5 | | | V | With Serial ID |
| | VoL | 0 | | 0.5 | V | |

5. Optical Characteristics

| Parameter | Symbol | Min | Typ | Max | Unit |
|--------------------------------|-----------------------|------|------|---------|----------|
| 9µm Core Diameter SMF | | 10 | | km | |
| Data Rate | | 1.25 | | Gbps | |
| Transmitter | | | | | |
| Parameter | Symbol | Min | Typ | Max | Unit |
| Centre Wavelength | λ_C | 1270 | 1310 | 1350 | nm |
| Spectral Width (RMS) | σ | | | 3 | nm |
| Average Output Power | P _{Out} | -9 | | -3 | dBm |
| Extinction Ratio | EX | 9 | | | dB |
| Rise/Fall Time(20%~80%) | tr/tf | | | 260 | ns |
| Output Optical Eye | IUT-T G.957 Compliant | | | | |
| Data Input Swing Differential | V _{IN} | 500 | | 2000 | mV |
| Input Differential Impedance | Z _{IN} | 90 | 100 | 110 | Ω |
| TX Disable | Disable | 2.0 | | VCC+0.3 | V |
| | Enable | 0 | | 0.8 | |
| TX_Fault | Fault | 2.0 | | VCC+0.3 | V |
| | Normal | 0 | | 0.8 | |
| Tx_Disable Assert Time | t _{off} | | | 10 | us |
| Receiver | | | | | |
| Parameter | Symbol | Min | Typ | Max | Unit |
| Centre Wavelength | λ_C | 1100 | | 1600 | nm |
| Receiver Sensitivity | P _{IN} | | | -20 | 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-AssertS | LOSD | | | -25 | dBm |
| LOS Assert | LOSA | -40 | | | dBm |
| LOS | High | 2.0 | | VCC+0.3 | V |
| | Low | 0 | | 0.8 | |

6. Mechanical Dimentions



7. 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 EN 60950, EN (IEC) 60825-1,2 | Compatible with Class I laser product. Compatible with T _μ V standards |
| Component Recognition | UL and CUL | UL file E317337 |
| Green Products | RoHS | RoHS6 |

8. Contact Information

Approved Networks is a leading supplier of Network Transceivers and Connectivity products to Channel Partners, Resellers, and OEMs. With more than 9 years of direct industry experience, our products are resident in the most demanding and mission critical functional networks Worldwide. We serve as a Master Distributor to the largest CMs in the world and deploy the most rigorous testing and firmware management programs to bring the highest level of functional product to the market at a cost that makes sense.

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