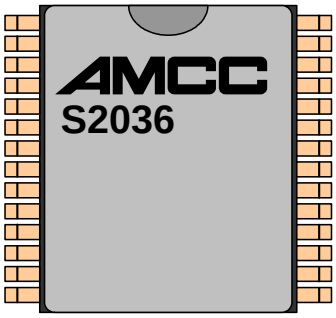

Description

The S2036 is designed specifically to implement the Fibre Channel Open Fiber Control (OFC) system, a redundant safety interlock feature for laser-based fiber optic systems. It is functionally compliant with the ANSI XT311 Fibre Channel physical standard and implements the OFC system defined by that standard, to detect when the optical link has been disrupted and shut down the laser or reduce the optical power level. The S2036 employs effectively redundant paths, each of which can independently turn off the laser.

The chip meets the requirements of Class 1 safety limits defined by FDA, ANSI, and IEC. It is fully compatible with AMCC's S2042/S2043 and S2044/S2045 Fibre Channel chipsets at 265.625, 531.25, and 1062.5 Mbit/s operation. It features low-power operation and a 28-pin SOIC package.

Figure 1, *System Block Diagram*, shows a typical network application.

Overview

The OFC system is an open fiber link detection and laser control system specified in ANSI XT311 Fibre Channel physical standard. It is used as a safety interlock for point-to-point optical fiber links that use semiconductor laser diodes as the optical source. The major reason for implementing OFC is that the optical power levels required to obtain the desired level of system performance in Fibre Channel exceeds the Class 1 limits defined by national and international laser safety standards, if the optical fiber link between two optical ports is disconnected, such as would occur with an opened connector or a cut fiber. It is extremely important that requirements for Class 1 classification are met, due to the potential for customer exposure to laser radiation.

Since it is only when an optical link is opened that a user can be exposed to laser radiation, implementing OFC allows Class 1 classification requirements to be met, since it can detect when the link has been disrupted and can shut down the laser or reduce the optical power level. The S2036 complies fully with the OFC specifications and Class 1 requirements.

Refer to the ANSI Fibre Channel standard document for details of OFC operation.

AMCC Suggested Interface Devices

S2042/S2043	High Performance Serial Digital Interface Circuit
S2044/S2045	GLM Compliant Serial Interface Circuit

– At a Glance –

General Features

- Implements redundant safety interlock for laser-based fiber optic systems
- Functionally compliant with ANSI XT311 Fibre Channel physical standard
- Enables Class 1 safety compliance for FDA, ANSI, and IEC guidelines
- Operates with the AMCC S2042/S2043, and S2044/S2045 Fibre Channel Chipsets at 265.625, 531.25, and 1062.5 Mbit/s
- On-chip ring oscillator
- Ultra low power operation
- 28-pin SOIC package with Green/RoHS compliant lead free option
- PECL Interface

Applications

- Laser-based fiber optic systems
- Medical and laboratory instrumentation
- High-speed data and telecommunications
  - -Supercomputer
  - -Frame buffer
  - -Mainframe
  - -Switched networks
  - -Broadcast
  - -Mass storage/RAID
  - -Workstations

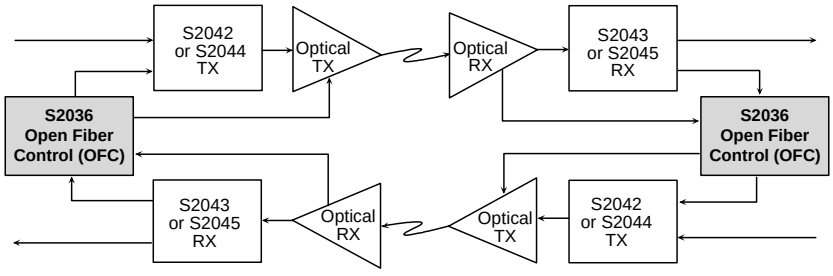

Figure 1. System Block Diagram

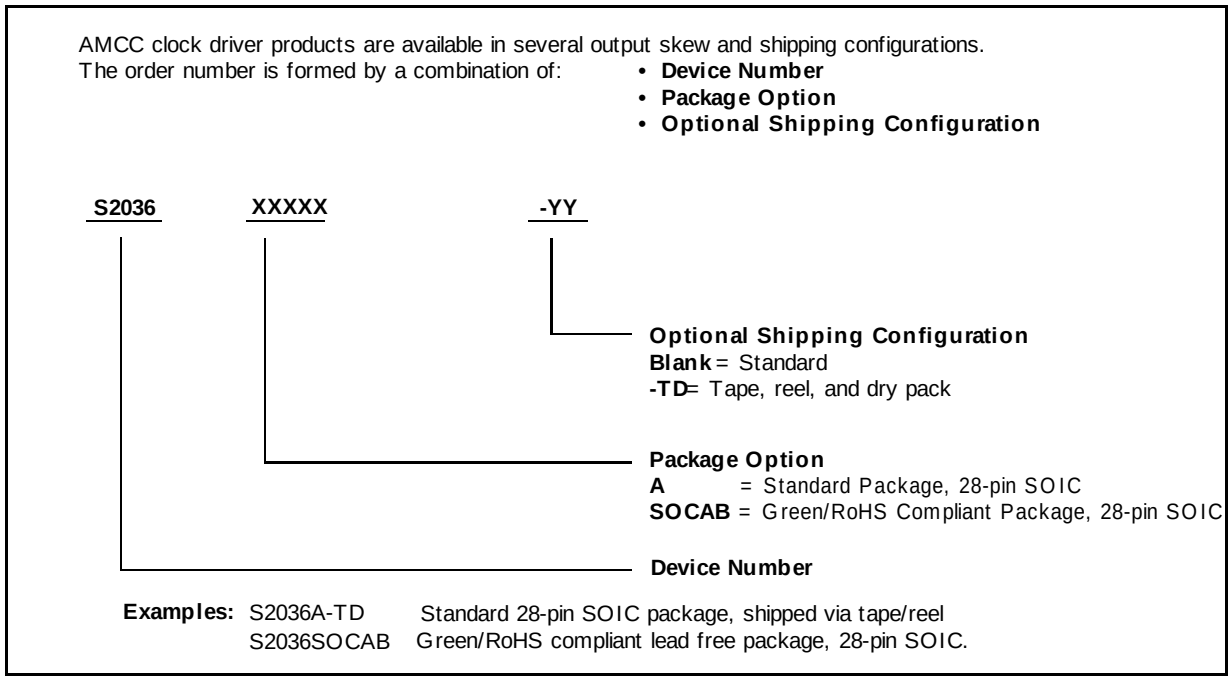

Figure 2. S2036 Ordering Information

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