SCSI
Application Overview

The Small Computer Systems Interface (SCSI) is a local I/O bus that is used to connect several peripherals to a host computer. The number of addressable devices per system is determined by the width of the data path, i.e. wide SCSI can have 16 devices.

3

Termination and TERMPWR

Proper termination of the SCSI bus is very important to maintain signal integrity. Since the cable environment is not controlled, the termination impedance may not match the cable impedance resulting in signal reflections. Reflections contribute to improper bus performance. The terminator circuitry absorbs reflected signals and improves data integrity. The function of a SCSI terminator is to source current when the line is active, and to maintain the proper open circuit voltage when the line is not active. All terminators independent of location shall be powered from the TERMPWR lines. Per the SCSI standards, provisions shall be made to provide power to the TERMPWR lines of the SCSI bus. The power shall be supplied through a low forward drop diode or similarly behaving circuit that prevents backflow of power if one of the sources of TERMPWR is powered-off.

Problem/Solution

The TERMPWR line on a SCSI port provides termination power for peripherals on the SCSI bus. A short-circuit anywhere on the bus can cause the entire bus and host to crash. A PolySwitch device can be used for circuit protection on the SCSI controller circuit and on each individual peripheral that is connected to the SCSI bus.

Typical Agency Approval Requirements

UL1950 and IEC60950 are the primary agency specifications that govern the output of power sources.

Typical Protection Requirements

The SCSI bus TERMPWR line can draw up to 1.5A in certain conditions. When a short-circuit occurs, that current can increase well beyond safe levels thus requiring protection. Also, resettability is important because the frequency with which peripherals will be connected and disconnected from the bus increases the likelihood of a short-circuit caused by a damaged cable or a misconnection.

Device Selection

The most commonly used PolySwitch resettable devices in SCSI applications are the microSMD, miniSMD, and SMD series devices ranging in hold current from 0.75 to 3.0A.

3

Figure 1. Typical Schematic