Ultra Multimode LVD/SE SCSI Terminator

AR7519

FEATURES

- Meets SCSI-1, SCSI-2, Ultra2, and Ultra3/Ultra160 standards.
- Auto-selectable multimode for single-ended or low voltage differential termination.
- Current limit and thermal shutdown protection.
- Ground driver integrated for single-ended operation
- SCSI bus hot-swap compatible.
- Compatible with active negation drivers.

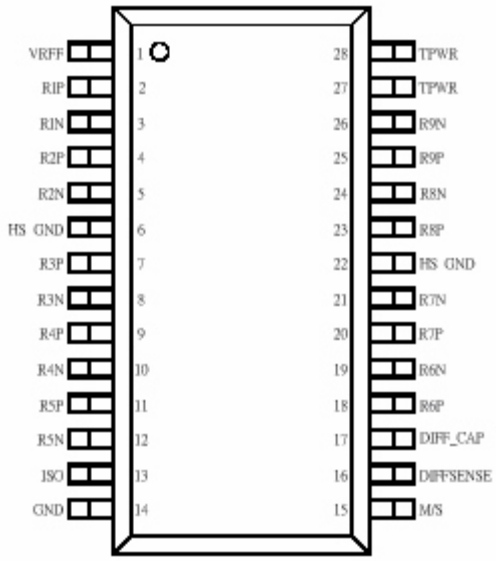
APPLICATIONS

- PC server
- Workstation

DESCRIPTION

The AR7519 multimode SCSI terminator is both a single-ended (SE) and a low voltage differential (LVD) terminator that meets the specification of SCSI parallel interface (SPI-3). In addition, the AR7519 provides backward compatibility to the SCSI-1, SCSI-2, and SE specifications. The multimode terminator contains all functions required to terminate and auto detect for SCSI devices without hardware fluctuation. Auto-selection is achieved by using voltage detection on the DIFFSENSE signal. The AR7519 senses the DIFFSENSE line while sourcing the DIFFSENSE signal with the LVD levels. The DIFFSENSE line being grounded indicates that one or more SE devices are attached on the bus. The AR7519 switches to the termination mode that is appropriate for the bus based on the value of the DIFFSENSE input voltage.

For the SE termination, the active terminator will pull RXN to 2.85V and RXP to hard ground. The AR7519 can sink 22 mA per line as required by SCSI specification. The SE resistor will maintain 110Ω ± 5%. For the LVD termination, the AR7519 integrates two current sources with nine precision resistor strings. This architecture yields a 105Ω ± 5% differential and 226Ω ± 10% common mode impedance. A fail-safe bias of 110 mV is sustained when no drivers are connected to the SCSI bus. If the AR7519 detects a HVD SCSI device on the bus, all the signals will be set to a high impedance state.



AR7519-TSSOP28

PIN DESCRIPTION

PIN	SYMBOL	DESCRIPTION
27,28	**TPWR**	4.0V to 5.75V power input pin. Connect to SCSI bus power line. A 4.7µF capacitor and a 0.1µF high frequency capacitor are recommended between TPWR and ground.
1	**VREF**	Reference Voltage. Must be decoupled with a 4.7µF capacitor to ground as shown in Figure 1.
6,22 14	**HS GND** **GND**	Heat Sink Ground. These should be connected to large area PC board ground trace in order to increase the power dissipation capability.
2,4,7,9,11,18 20,23,25	**RxP**	Termination lines. These lines switch to hard ground in SE mode and are the positive lines for LVD mode. All lines are in high impedance when HVD is detected.
3,5,8,10,12 19,21,24,26	**RxN**	Termination lines. These lines switch to the active lines in SE mode and are the negative lines for LVD mode. All lines are in high impedance when HVD is detected.
13	**ISO**	Isolate pin. This pin used to shut down the terminator if the terminator is not connected at the end of the bus. Connect the pin to ground will activate the terminator in normal operation. The terminator will be disabled when the pin is in high state. An internal pull-down resistor assures that the AR7519 will operate as normal if the ISO pin is left floating.
15	**M/S**	Mode select pin. When pull high, master mode will enable the DIFFSEN drive SCSI bus. The DIFFSENSE driver is off when this pin is connected to ground.
16	**DIFFSENSE**	Mode Sense pin. This signal will drive 1.3V to the SCSI bus during the Master mode in order to detect which type of device is connected to the SCSI bus. On power up, the AR7519 will try to deliver LVD level to the DIFFSENSE line. If only LVD SCSI devices are on the bus, the DIFFSENSE signal will be successfully driven to 1.3V and the terminator will configure the system for LVD operation. If any SE device is on the bus, it will present a grounding level to the DIFFSENSE line. This will indicate AR7519 to configure into SE operation. AR7519 will be in shutdown mode if DIFFSENSE detects a high voltage level.
17	**DIF_CAP**	DIFFSENSE CAPACITOR. This pin should be connected to a 0.1uF capacitor to ground and 20KΩ resistor to SCSI bus DIFFSENSE line for DIFFSEN filter.